

Nurses Knowledge of Perioperative Pressure Injury Assessment Tools: A quality improvement project

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Introduction

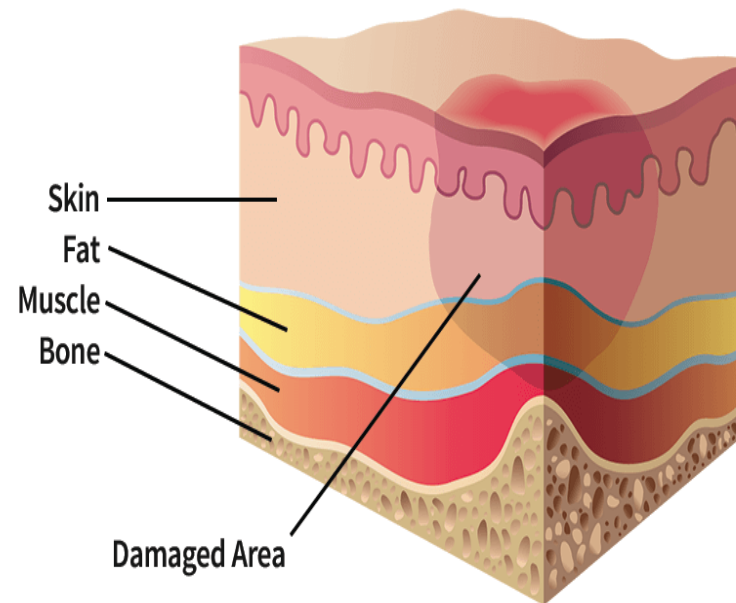
- Prevalence of pressure injuries in USA
 - 2.5 million annually
- Incidence rate of perioperative pressure injuries
 - 45% in the perioperative setting
- Significance of nursing care on surgical outcomes
 - Reduction 3.37% to 0.89% over 1 year
 - Cost savings of \$1,364,000 over 1 year

Pressure Injury Definition

➤ Pressure injuries:

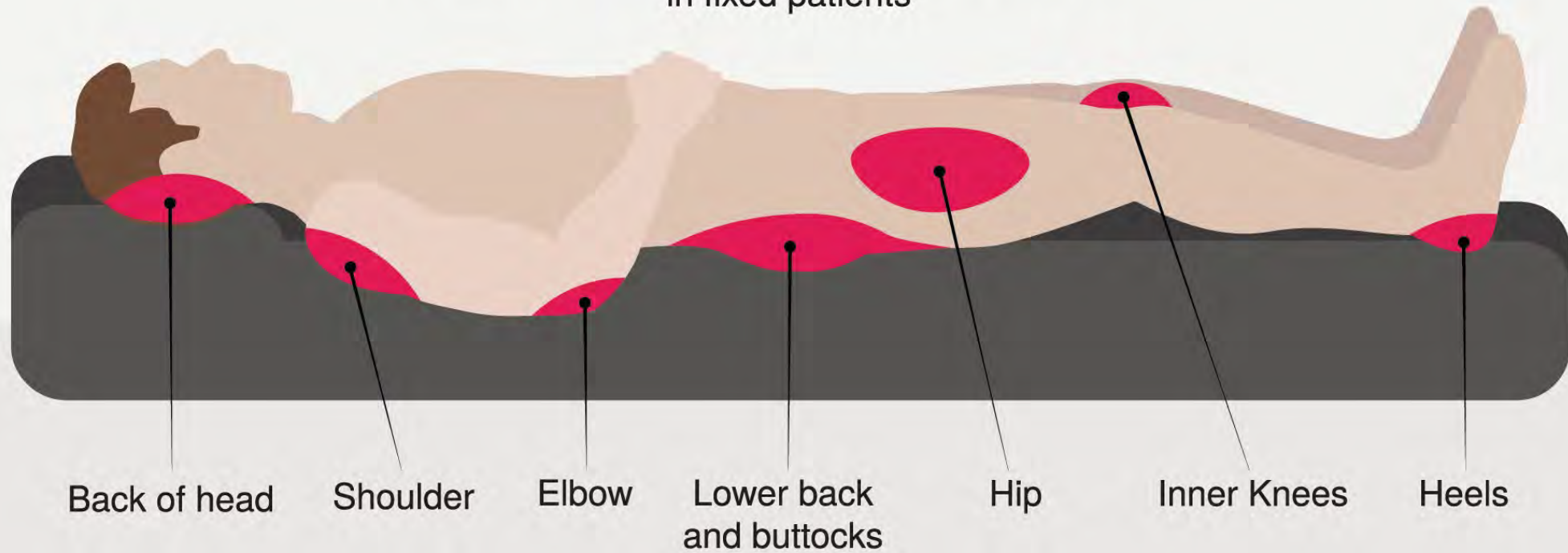
- Localized injury to skin or underlying tissue over a bony prominence
- Due to friction, pressure, or shearing
- Developed 48-72 hours after surgery

Pressure Sore – Stage #1



Pressure Injury Formation Sites

Pressure sores often form over bony prominences in fixed patients



Problem Statement

- Pressure injuries are among the top ten hospital acquired conditions not reimbursable by CMS
- \$21,000 to \$152,000 to treat per injury
- The cost of perioperative related pressure injury development increased hospital stays by 44% (\$1.3 billion annually)
- Approximately 80% of patients are admitted directly to inpatient perioperative services the day of surgery

AORN Pressure Injury Prevention Tool Kit of 2016

(Association of Operating Room Nurses)

- Joint collaboration with the Wound, Ostomy, and Continence Society

- Goals
 - To avoid complications, disfigurement, disability, and death
 - To eliminate harm from pressure injuries in high-risk surgical patients

- Scott Triggers gap analysis
 - Communication
 - Education

AORN Pressure Injury Prevention Tool Kit

Munro Scale

Munro Pressure Ulcer Risk Assessment Scale for Perioperative Patients				
Code #: _____				
Patient Name: _____				
Hospital ID#: _____				
Risk Factor Score	1	2	3	Total
Comorbidity				
Identify and add 1 point for each condition	Smoking	Asthma	Hypertension	
	Diabetes	Vascular disease	Respiratory disease	
Nutritional state				
Length of NPO status	12 hours or <	> 12 hours but < 24 hours	> 24 hours	
Body Mass Index or weight				
Choose one description	< 30 kg/m ²	30 kg/m ² - 35 kg/m ²	> 35 kg/m ²	
	normal	underweight/obese	morbidly obese	
Age				
Years	39 or <	40-59	60 or >	
Body temperature (98.6° F = 37° C)				
Celsius	36.1°-37.8°	> 37.8° or < 36.1° (+ or - 2°)	> 37.8° or < 36.1° (+ or - > 2°)	
	body temperature maintained	fluctuated + or - > 2°	maintained + or - > 2°	
Preoperative mobility/activity				
	not or slightly limited	very limited	completely immobile	
Physical status / American Society of Anesthesiologists pre-anesthesia evaluation score				
	healthy and mild systemic disease, no functional limitations	moderate to severe systemic disease, some function limitation	moderate to severe systemic disease, constant threat to life and functionally incapacitating	
Friction and shear during transfers				
	moves independently	requires transfer assistance	requires full assistance, position intraoperatively changed and use of traction	

AORN Pressure Injury Prevention Tool Kit

CMUNRO SCALE

The image shows a blue card with two columns. The left column is a checklist for the CMUNRO SCALE, and the right column is a list of co-morbidities/diseases. The card is held by two blue rings at the top.

	PREOPERATIVE
C	Co-morbidities Current Status
M	Mobility
U	Under Age of 60
N	Nutrition
R	Recent Weight Loss
O	Over Weight (BMI)
	INTRAOPERATIVE
S	Systolic BP Surface
C	Core Temperature
A	ASA Anesthesia Type Lying Position Lying Moisture
L	POSTOPERATIVE
E	Length of Stay (LOS) Periop Estimated Blood Loss (EBL)

CMUNRO SCALE

Co-morbidities/Diseases

- Smoking
- Hypertension
- Vascular/Renal
- Cardio-vascular
- Peripheral-vascular
- Asthma
- Pulmonary
- Respiratory
- History of or existing Pressure Injury
- Diabetes all types

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AORN Pressure Injury Prevention Tool Kit

Scotts Triggers Tool



Review patient record and complete data in left column. Place a check in the right column if the answer is YES. If two or more YES answers are present, this may indicate an increase risk of perioperative pressure ulcers. Use Perioperative Pressure Injury Prevention Plan (PIPP) of care.

SCOTT TRIGGERS*	Does it meet these qualifications?	If YES, please check here.
Age _____	Age 62 or Older	
Serum Albumin _____ g/L or BMI	Albumin level <3.5 g/L or BMI <19 or >40	
ASA score (circle) 1 2 3 4 5	ASA score 3 or greater	
Estimated surgery time in hours/minutes _____	Surgery time over 3 hours or 180 minutes**	

Two or more YESes = HIGH RISK SURGICAL PATIENT

Assessment Comments:

* Scott Triggers® is a set of evidence-based factors (named for nurse/program founder Susan Scott) identified as predictors of highest risk for pressure injury development in the study (e.g., age 62 or older, Albumin level below 3.5 and ASA score 3 or greater). Scott, SM. Progress and Challenges In Perioperative Pressure Ulcer Prevention. JMOCN. 2015;42(5):480-5

** Surgery time is calculated from the time into the Operating Room until the time out of the Operating Room.

PICO(T) Question

Does knowledge, education, and attitude regarding evidence-based assessment tools influence care practices among nurses to prevent the development of pressure injuries in the perioperative environment?

Synthesis Search

- Literature search conducted January 30, 2020 to September 30, 2020
 - Published between 2015 and 2020, full text-citation, English language
- MeSH headings:
 - AORN, AORN toolkit, pressure injuries, perioperative nurses
- Key terms:
 - Perioperative, perioperative pressure injury, pressure injury, adult surgery, AORN toolkit, perioperative skin assessment, perioperative ulcers, Munro scale, Scotts Triggers tool, CMUNRO SCALE

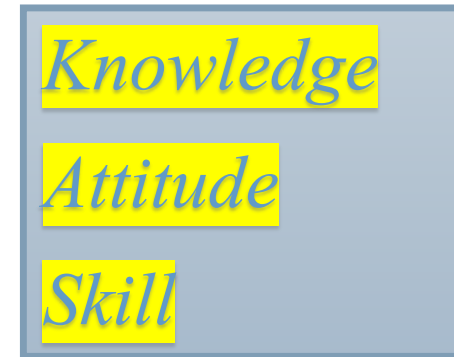
Common Themes – Theoretical Construct

➤ **Knowledge:**

- Ensure high quality and safe patient care
- Lack of knowledge with regard to assessment and prevention

➤ **Education:**

- Annual
- Population specific to perioperative patients



➤ **Outcomes:**

- Improve nurse's knowledge of pressure injuries & prevention tools
- Promote best practice for the prevention of perioperative pressure injuries
- Prevent perioperative pressure injuries

Purpose, Aim, and Objectives

Does knowledge, education, and attitude regarding evidence-based assessment tools influence care practices among nurses to prevent the development of pressure injuries in the perioperative environment?

- Purpose:
 - To evaluate the prevalence of institutional implementation of the AORN pressure injury tool kit.
- Aims:
 - Assess knowledge
 - Assess awareness
 - Assess care practices

Purpose, Aim, and Objectives

Does knowledge, education, and attitude regarding evidence-based assessment tools influence care practices among nurses to prevent the development of pressure injuries in the perioperative environment?

- Project Objectives:
 - Assess perioperative nurse's overall knowledge of pressure injuries and prevention techniques.
 - Assess perioperative nurse's awareness of pressure injury prevention tool kits.
 - Assess nursing care practices performed to prevent perioperative pressure injuries.
 - Gain 15% to 30% participation among sample of perioperative nurses.

Methodology

➤ **Project Design**

- Quality improvement study
- Convenience sample

➤ **Setting**

- Methodist University Hospital (MUH) (200 perioperative staff nurses)
- Regional One Health (ROH) (115 perioperative staff nurses)

➤ **Participants**

- Perioperative staff nurses with an established email
- Educational level- hold a degree in nursing

Survey Development

- REDCap survey distributed via email to assess knowledge, awareness, and care practices
- Survey utilizes the Likert scale (1-5) and fill-in-the-blank choices.
 1. When does pressure injury prevention and risk assessment begin at your facility?
 2. Do you have knowledge of any pressure injury risk assessment or prevention tools at your facility?
 3. Pressure injury risk assessment and prevention is the responsibility of whom at your facility?
 4. Is one of the following pressure injury risk assessment tools a component of the hand-off communication at your facility?
 5. In the past 12 months, have you been provided any educational resources regarding pressure injury prevention?
 6. If so, how was the education obtained?
 7. Do you feel as if perioperative patients are at greater risk for pressure injury development than other hospitalized patients?
 8. What is the incidence of perioperative pressure injuries at your institution?
 9. How important do you believe preventing pressure injuries is to you patient's total outcome?
 10. Nurse characteristics

Project Implementation

- Distributed the survey at in two separate, inpatient sites
 - Regional One Medical Center
 - Mrs. Ruth Shumaker- perioperative services director
 - Methodist University Hospital
 - Mr. Byron Robinson- perioperative services director
- 4-week overall study period
 - 3 weeks of data collection at each respective site

Budget and Data Analysis

- Budget
 - No monetary cost
- Software
 - REDCap
 - Excel spreadsheet
 - PowerPoint
- Visual Displays and Graphs

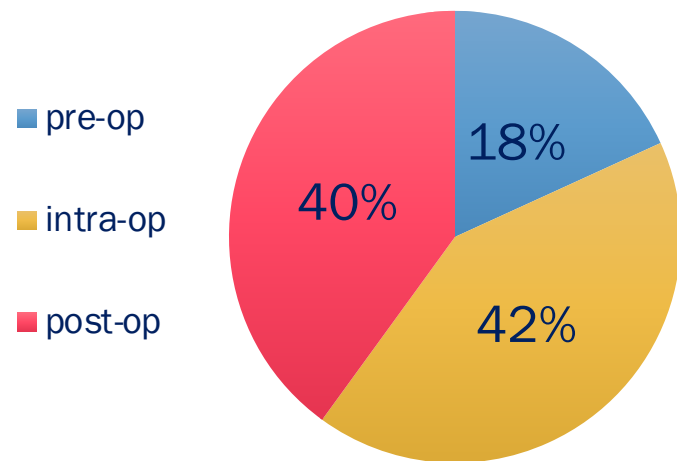


Results: Participant Characteristics

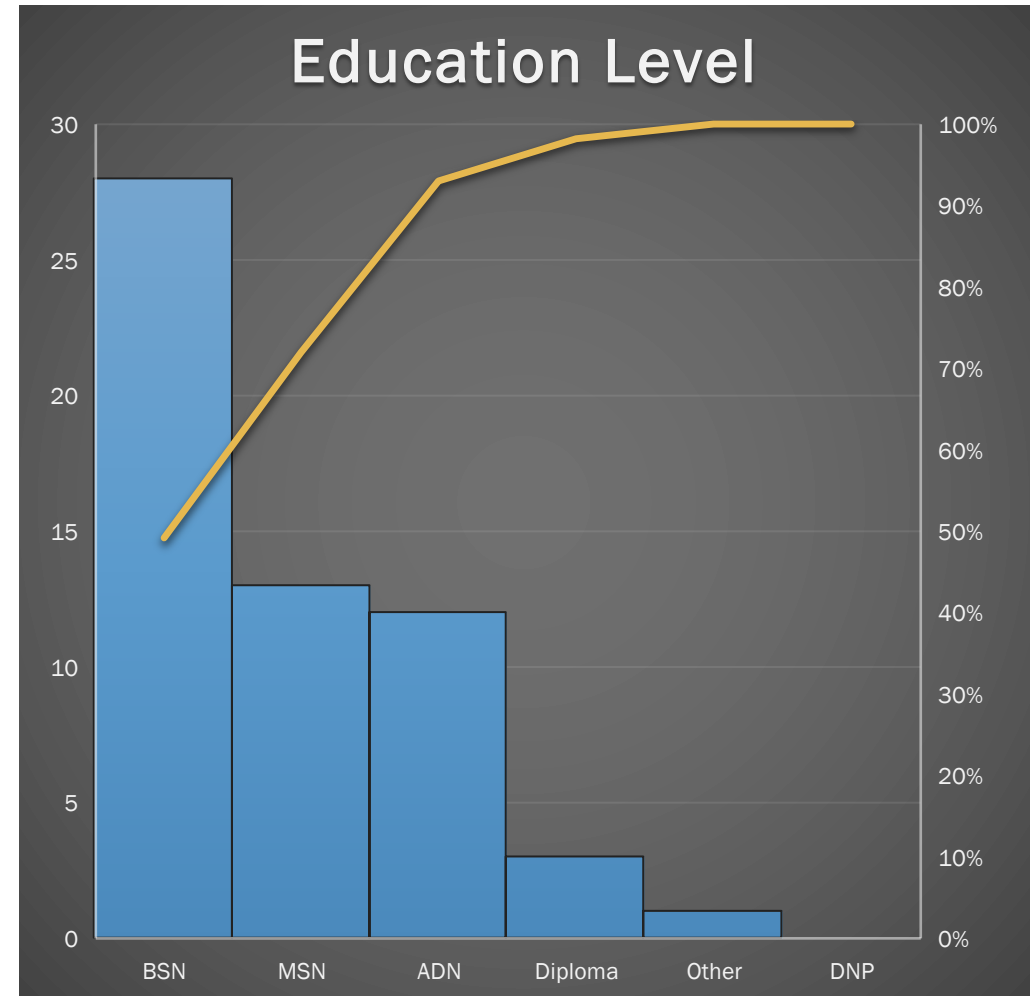
Years of experience

- Nursing for 15+ years (57.9%)
- Perioperative for 10+ years (33.3%)

Perioperative Practice Area



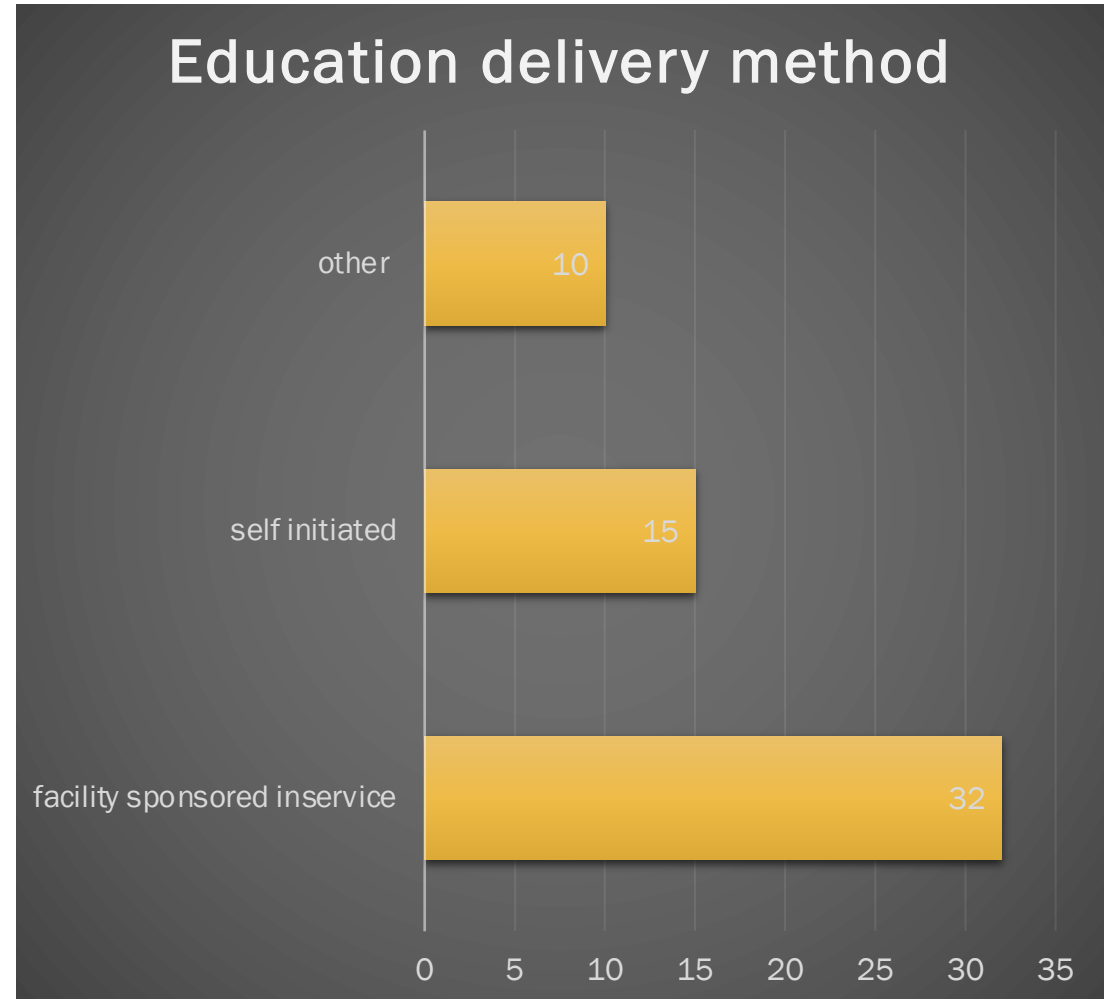
Education Level



Results: Participant Characteristics

Exposed to Annual Education

M= 3.8 (SD= 1.3)



Results: Attitude

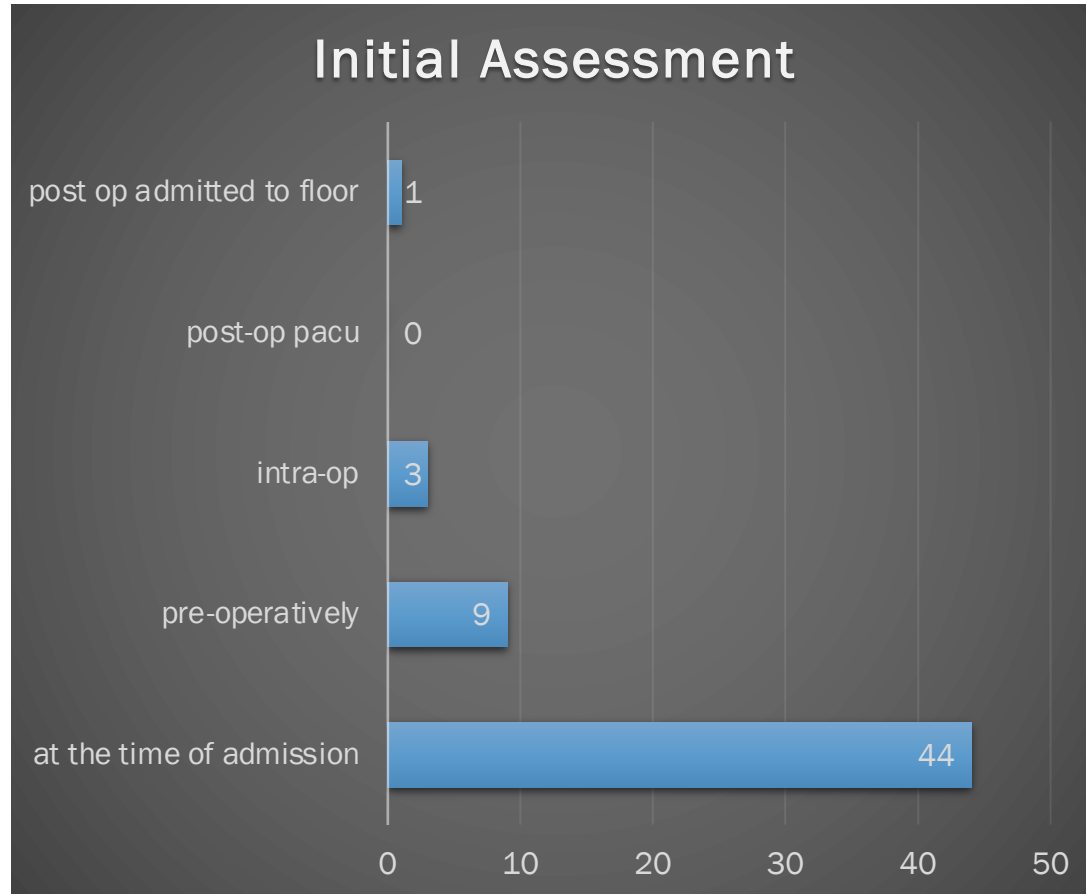
Attitude

- Nurse perception of risk
 - $M= 3.5$ ($SD= 1.8$)
- Nurse perception of health outcome
 - $M= 4.8$ ($SD 0.8$).

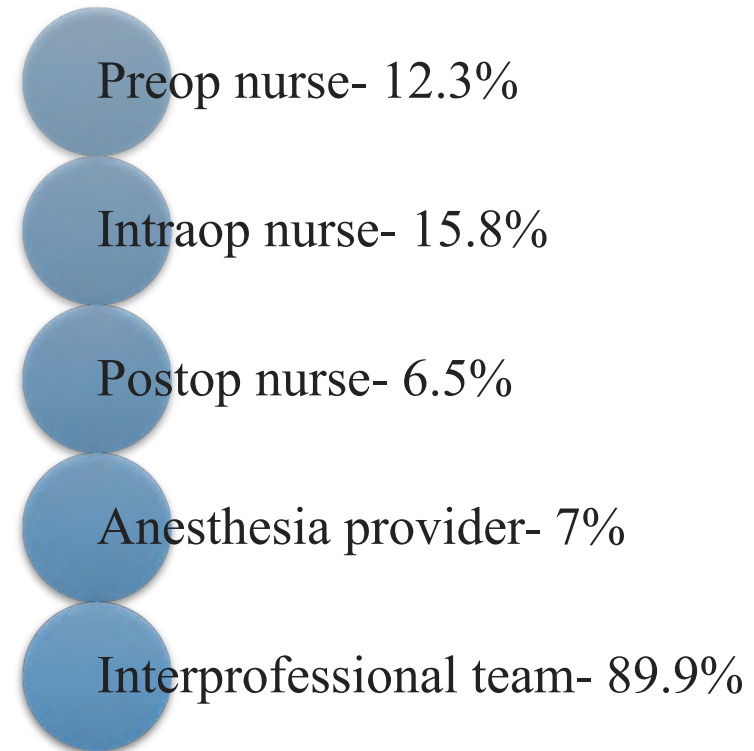




Results: Knowledge



The Responsible Clinician



Results: Nursing Care Practices

Knowledge of pressure injury tools

Tool Knowledge M= 3.8 (SD= 1.3)

Tool usefulness M= 3.9 (SD= 1.1)

Tool usage M= 66.5 (SD= 40.7)

24.6% use 0-10% of the time

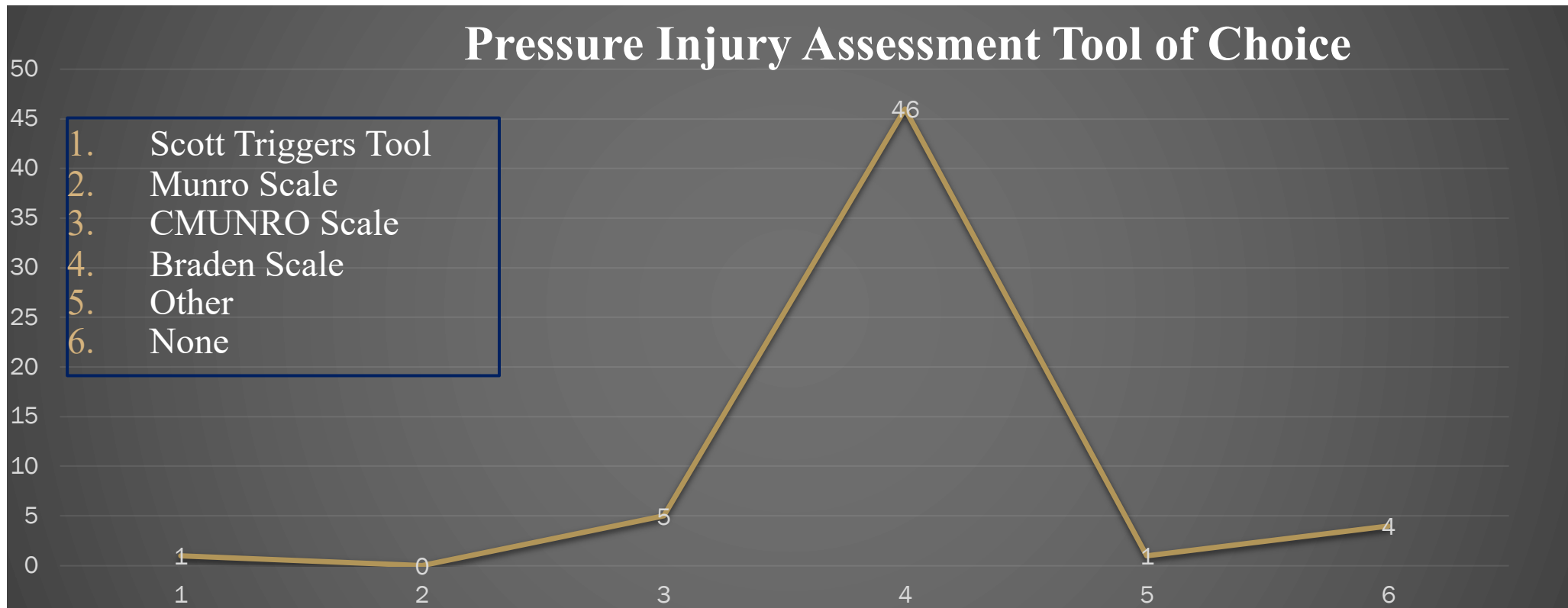
42.1% use 90-100% of the time



Results: Awareness

Awareness of institutional incidence of pressure injuries

M= 7.9 (SD= 7.9)



Discussion

- Participation goal met
 - 18.1% perioperative nurses from both sites
- Inappropriate utilization of the Braden Scale
 - Not endorsed by AORN
- Opportunity for improvement
 - Evidence-based education
- AORN Pressure Injury Prevention Toolkit
 - Incidence rate reduction from 3.37% to 0.89%





Discussion: Previous vs. Current State of Evidence

➤ Previous study

- 60% had > 10 years of perioperative nursing experience
- The highest response rate pre-op (39%), intra-op (35%)
- Facility sponsored in-service (30%)

Talliet et al., 2017 and Lupear et al., 2015

➤ ADN 58%

➤ Diploma 0%

➤ Bachelor 37%

➤ Masters 5%

Tallier et al., 2017

➤ Current study

- 33.3% had > 10 years of perioperative nursing experience
- The highest response rate intra-op (42%), pre-op (18%)
- Facility sponsored in-service (56.1%)

➤ ADN 21%

➤ Diploma 5.3%

➤ Bachelor 49.1%

➤ Masters 22.8%

Discussion

- Strengths
 - Foundation for more knowledge
 - Identified need for education

- Limitations
 - Third party communication with participants
 - Incentives- financial vs. professional engagement

- Implications for future research
 - Survey fatigue
 - Positive attitudes impact care practices

Conclusions



Knowledge protects patient safety

Insufficient knowledge of prevention tools

Gap in knowledge despite experience

Need for perioperative cross-training

More high-quality research

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Questions???

