Effectiveness of The Implementation of Modified Turn Clock in Hospital-Acquired Pressure Injury Prevention

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ABSTRACT

A modified turn clock was implemented to cue nurses for the repositioning of bedridden patients for pressure injury prevention. This study aimed to prevent hospital acquired pressure injury through the monitoring of compliance to repositioning using the turn clock. Direct observation with repositioning chart audit were conducted during pressure injury audit round. A total of 280 bedridden patients were evaluated during pressure injury audit round over a period of 3 months. Study results showed an average of 93.2% compliance to repositioning and documentation in accordance with the turn clock by nursing team. Over the period of 3 months, study results has also showed a reduction of the percentage of hospital-acquired pressure injury cases over the total number of bedridden patients from 1.55% (before implementation of turn clock) to 0.14% (after implementation of turn clock). Compliance to the turn clock to cue patient repositioning is important to improve the pressure injury prevention and patient safety in the hospital. Repositioning education by using turn clock should also be given to caregiver or patient upon discharge to prevent pressure injury at home.

KEY WORDS: turn clock, pressure injury prevention, patient safety

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INTRODUCTION

Pressure injury prevention bundle implementation is essential to prevent hospital-acquired pressure injury (Elcin, 2023). Study done by Adayani *et al.* in Indonesia has showed that two-hourly repositioning is a common method of pressure injury prevention and is effective in preventing pressure injury (Andayani *et al.*, 2020).

However, previous study has also showed that inadequate staffing and the heavy workload has caused missing of repositioning of bedridden patients (Mwebaza *et al.*, 2014). Hence, a standardized turn clock was implemented in Tung Shin Hospital to cue nurses for bedridden patient repositioning at each encounter.

This study aimed to prevent hospital acquired pressure injury by through the monitoring of compliance to repositioning using the turn clock. The data collected can be used as a baseline information for the nursing management team to improve pressure injury prevention and patient safety.

METHODS AND MATERIALS

Methods:
Modified turn clock was displayed at patient's bed headboard to cue the nurses to reposition the patient. Direct observation with repositioning chart audit were conducted during pressure injury audit round from the month April 2023 till June 2023.

Table 1. Compliance audit parameters and outcome assessment.

Audit Parameters	Outcome Assessment
Correct position and complete documentation	Compliance
Either correct position or complete documentation	Non-compliance
Incorrect position and/or incomplete documentation	

Material:
The material used in this study was the modified turn clock which was designed based on the feeding time. For example, if scheduled feeding at 9.00 am, then the patient will be repositioned to right lateral to aid digestion.



Figure 1: Turn clock.

RESULTS

Patient Population
Throughout the three months study period, there was a total of **280** bedridden patients from all the wards in Tung Shin Hospital being included in the audit round.

Clinical audit: repositioning based on turn clock and repositioning chart documentation
The results has shown an increasing trend in the compliance rate throughout the three months audit period (Figure 4).

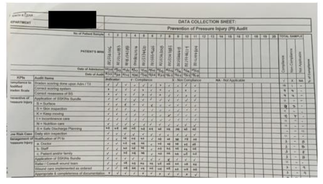

Figure 2: Example of audit form



Figure 3: Pressure injury audit round

Pressure Injury Incidence
Pressure injury incidence of the month was calculated using the formula as below:

$$\text{Pressure injury incidence} = \frac{\text{Total number of hospital-acquired pressure injury cases}}{\text{Total number of bedridden patients}} \times 100$$

Results has showed that pressure injury incidence has reduced as shown in figure 5.

Nurses' Opinion
Nurses' feedbacks: " Turn clock is useful in cueing nurses for patient repositioning", " The turn clock is easy to use".
Reasons for non-compliance:
- lack of knowledge in repositioning
- forgetfulness among some nurses due to heavy workload.

GRAPHS AND TABLES

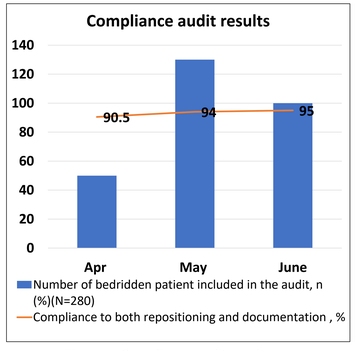

Figure 4. Compliance audit results.

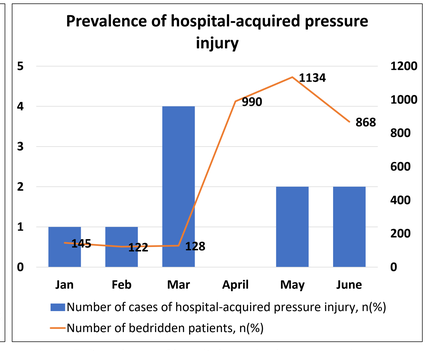

Figure 5. Prevalence of hospital-acquired pressure injury in Tung Shin Hospital.

DISCUSSION

This audit result has showed the reduction in hospital-acquired pressure injury incidence rate. This result was in accordance with the results from the study in the United States where incidence rate of 0 was achieved after the implementation of turn clock. The reduction in pressure injury incidence rate may be due to the implementation of standardized turn clock. The turn clock may help to reduce the confusion in repositioning patients while proving reminders to nurses to reposition patient following a standardized turning schedule (Jones *et al.*, 2009).

This study has given a real-time repositioning and documentation quality check. Regular monitoring with root-cause analysis on audit results may help the nursing management team to assess the issue associated with pressure injury and its occurrence (Niederhauser *et al.*, 2012).

Limitations in this study was that lack of education to caregiver on the use of turn clock to assist repositioning. Hence, further work can be done by investigating caregiver's understanding on the use of turn clock. Also, cost-effectiveness analysis can also be done to evaluate the implementation of turn clock in pressure injury prevention.

CONCLUSIONS

Compliance to the turn clock to cue patient repositioning is important to improve the **pressure injury prevention** and **patient safety** in the hospital. Repositioning education by using turn clock should also be given to caregiver or patient during hospitalization and especially upon discharge to prevent pressure injury at home.

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