

Assessment of the level of utilizing pressure ulcer (PUs) prevention and treatment interventions in clinical practice among Sultan Qaboos Comprehensive Cancer Care and Research centre (SQCCCRC) Nurses

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Abstract: Pressure ulcers (PUs) care considered one of the crucial role of nurses working within in patient's unit. Consequently, nurses must acquire sufficient knowledge concerning the potential risks associated with PUs development and be adept at managing complications that exacerbate patient conditions. Thus, the objective of this study was to assess the level of utilizing (PUs) prevention and treatment interventions in clinical practice among (SQCCCRC) Nurses'. Additionally, to investigate the impact various nurses' personal characteristics on the level of Nurses' practice. A cross-sectional study recruited 148 inpatient unit nurses from oncology center using census sampling. A validated assessment tool used to assess nurses level of utilizing (PUs) preventions and treatment interventions. Data were collected between NOV and DEC 2023. The consequences of the study reveal the overall level of practice and (PUs) prevention and treatment intervention was 81.2 out of 100, interpreted as a satisfactory practice level. Nurses' age, years of experience, and involving in pressure ulcer courses were found aspects prompting nurses' level of practice. The outcomes of the study highlight the importance of implementing in-service training or continuous education programs specifically designed for pressure injury (PUs) preventions and treatment interventions. These programs are intended to address the knowledge gaps among nurses regarding pressure ulcer prevention and treatment interventions. The goal is to improve their attitudes and practices in this critical aspect of patient care.

Keywords: Pressure ulcers, patient, utilizing, prevention, treatment interventions.

1. Background

Pressure ulcers present a significant and intricate health challenge in both hospital and community healthcare settings, leading to human suffering, pain, disfigurement, loss of productive time, and financial burdens. The consequences of pressure ulcers include substantial costs (Anthony et al., 2004; Bennett et al., 2004), heightened infection rates (Ash, 2002), and prolonged hospital stays (Anthony et al., 2004; Clark, 1998). While pressure ulcers are largely preventable (Anthony et al., 2004; EPUAP and NPUAP, 2009), various investigations have documented a spectrum of incidence rates spanning from 0.78% to 39.3%. Numerous global studies have disclosed prevalence rates within the range of 4.3% to 25%. Examples include Germany at 4.3%, the Republic of Ireland at 9%, the USA at 9.5%, Sweden at 17.6%, and the United Arab Emirates at 25%. In Bahrain, the prevalence stands at 12%, or 7% when excluding grade, I cases (Al Shidi, 2016). clinical guidelines have been developed globally over the past twenty-five years to enhance decision-making for improved prevention and management (Clark, 1999). Despite the availability of these guidelines, their implementation in the Arab World remains unconfirmed.

Pressure ulcer prevention programs encompass various elements, such as risk assessment, training, repositioning, the use of preventive measures, support surfaces, and skin assessment

(EPUAP & NPUAP, 2009; AWMA, 2012). Day et al. (1997) suggests Aggressive and ongoing prevention programs, including thorough skin assessment, frequent repositioning, and careful selection of support surfaces, have demonstrated significant reductions in pressure ulcer incidence, treatment time, and cost savings. Education and training are fundamental components of pressure ulcer programs, promoting awareness and best practices (Day et al., 1997; Banks, 1998; Clark, 1999). Mockridge and Anthony (2001), in a UK-based study, discovered that senior staff exhibited greater knowledge about pressure ulcer treatment compared to junior staff. In a Belgian context, Gunningberg (2005) identified insufficient knowledge regarding pressure ulcer prevention, and interestingly, knowledge did not show a correlation with the implementation of preventive measures.

Studies evaluating nurses' application of pressure ulcer prevention and treatment methods have revealed discrepancies between theory and practice. In various settings, inappropriate treatments, outdated practices, and inadequate knowledge have persisted (Panagiotopoulou and Kerr ,2004; Barrois et al. 2008). Factors influencing the implementation of preventive measures include nurses' education level, specific training in pressure ulcers, involvement in pressure ulcer research, and seniority (Mockridge &Anthony ,2001; Pancorbo-Hidalgo et al. ,2007).

In Oman, the level of nurses' knowledge on pressure injury precautions was found to be relatively low, with limited familiarity with wound management policies and pressure ulcer prevention and management strategies (Al Shidi, 2016). the current study, conducted in the SQCCCRC hospital aiming to assess the level of utilizing pressure ulcer (PUs) prevention and treatment interventions among nurses in clinical practice. This research addresses the need for evidence-based knowledge and robust findings to enhance tissue viability programs, specifically in the context of cancer treatment, contributing to educational initiatives at both hospital and national levels. The study's outcomes can serve as a foundational reference for healthcare professionals and aid in the development of effective strategies for pressure ulcer prevention and treatment.

2. Research Objective

General research objective

1. Determine the level which nurses utilizing pressure ulcer prevention and treatment interventions in clinical practice.

Specific research question

- 1- Determine the relationship between nurses' age and the level which nurses utilize pressure ulcer prevention and treatment interventions in clinical practice.
- 2- Determine the relationship between nurses' gender and the level which nurses utilize pressure ulcer prevention and treatment interventions in clinical practice.
- 3- Determine the relationship between nurses' education level and the level which nurses utilize pressure ulcer prevention and treatment interventions in clinical practice.
- 4- Determine the relationship between attending Course in pressure ulcer prevention and treatment and the level which nurses utilize pressure ulcer prevention and treatment interventions in clinical practice.
- 5- Determine the relationship between nurses' engagements in reading SQCCCRC and the level which nurses utilize pressure ulcer prevention and treatment interventions in clinical practice.

3. Method

3.1 Setting and Sample

This study was executed in the Sultanate of Oman from November 8, 2023, to December 8, 2023. Employing a descriptive correlation design, the research aimed to evaluate the level which nurses' utilizing pressure ulcer prevention and treatment interventions in clinical practice along with associated factors. The complete population of SQCCCRC nurses directly involved in providing care in inpatient units comprised 186 expatriate and Omani nurses. The researchers chose to employ a Census sampling method, indicating that all nurses working in inpatient units and directly participating in patient care constituted the accessible population for this study. A total of 186 questionnaires were distributed by the researchers, resulting in 148 responses and attaining a 88% response.

3.2 -Instruments

The tools utilized in this study have been derived from a prior investigation and comprise two distinct sections tailored to gauge different variables:

- 1- Professional and Demographic Characteristics: This section includes relevant factors such as age and gender, educational background, years of experience, participation in pressure

ulcer-related training, and adherence to reading the SQCCCRC policy.

2. level of Utilization of Pressure Ulcer Prevention and Treatment Interventions in Clinical Practice: This aspect will be evaluated using the "Nurses' Adherence to Recommendations for Preventing Pressure Ulcers" (QARPPU) tool. This specialized instrument is tailored to assess the extent to which nurses align with established recommendations and guidelines for preventing pressure ulcers within clinical settings. Nurses will respond to the questions using a 5-point Likert scale, enabling them to indicate the degree of their adherence to the provided statements. It is consisting a 27-item questionnaire covering five themes: (1) use of a risk-predictive instrument; (2) evaluation, skin care, and selection of special surfaces; (3) postural change; (4) force and pressure relief; and (5) nutrition for PUs prevention (Moya-Suárez et al., 2017). Total score ranges from 27 to 135. Moya-Suarez et al did not determine a cut-off score for good practice of PUs prevention. Again, we translated total scores into percentage scores, and for this questionnaire we selected a mean cut-off score of 80 to reflect the nurse's good performance on PUs prevention practice, based on a previous study conducted word wide (Alzahrani, 2022; Moya-Suárez et al., 2017).

4. Data Collection and Ethical Considerations

The study commenced following the acquisition of ethical approval from the SQCCCRC Research Committee, with the IRB & EC project ID as (CCCCRC-21-2023). To safeguard participants, measures were implemented to prevent harm, deception, coercion, and breach of confidentiality by keeping respondents' names and any identifying features undisclosed. Informed written consent was obtained from participants after providing a clear explanation of the study and allowing them to pose any queries. Participants were apprised of their right to withdraw from the study at any point. Nurses were invited to participate voluntarily through an enrolment letter attached to the questionnaire, wherein the research objectives and their right to decline participation were elucidated. The questionnaire, administered by the researcher, took approximately 20-30 minutes to complete. Upon completion, participants placed the questionnaire in a sealed envelope in a designated box to ensure privacy.

5. Data analysis

Descriptive statistics were computed to delineate the demographic characteristics of the study participants, with a total of 148 questionnaires analysed. The missing data for all variables in this study was negligible, showing 0%. Non-response bias was evaluated by comparing primary and late participants, following the recommendation by Hair et al. (2006) as a widely used approach in quantitative research to gauge nonresponse bias. The comparison, indicating no substantial differences ($p>0.05$) between primary and late participants across all variables, supports the generalizability of the research findings to the population.

To assess data normality, skewness and kurtosis tests were employed. The results indicated a normal distribution, as evidenced by skewness values falling within the range of -2 to +2 and kurtosis within -7 to +7. The significance of this study is established at ($p<0.05$).

6. Result

the demographic variables under consideration encompassed age, gender, years of experience, education level, attendance in pressure ulcer prevention and treatment courses, and involvement in reading the SQCCRC policy. The reported participant ages ranged from a minimum of 23 years to a maximum of 48 years, with a mean age

of 30.1 years. The majority of participants were female (n=113), while male participants numbered n=35. A significant portion of the participants had up to 5 years of experience (n=80), held a bachelor's degree (n=139), and a notable percentage (57.4%) had attended a pressure ulcer course (n=85). Additionally, 73.6% of the nurses were actively engaged in reading the hospital policy (n=109). the result shows in table below.

Nurses' demographic characteristics

Category	Number	Percentage
Gender		
Male	35	23.6%
Female	113	76.4 %
Years of experience		
Less than 1 years	40	27%
1-5 years	40	27%
6-10 years	28	18.9%
11-15 years	33	22.3%
16-20 years	2	1.4%
More than 20 years	5	3.4%
Highest degree hold		
Bachelor's	139	93.9%
Master degree	9	6.1%
Attending course in pressure ulcer		
Yes	85	57.4%
No	63	42.6%
Reading the SQCCRC policy		
Yes	109	73.6%
No	39	25%

The descriptive statistics for the level of nurses' practice have been interpreted as the satisfactory level if total score of QARPPU tool is 80% or above. while, less than 80% presented as unsatisfactory score, according to the cut-off point of the instrument (80%). The result data analysis shows that the majority of the nurses have a satisfactory level of practice. Therefore, 66.2 % (n=98) practicing pressure ulcer prevention and treatment intervention at satisfactory level. While, the nurse who were attained un satisfactory score were only 33.8%. the mean level of practice was 81.2% which is represent a satisfactory level of practice according to the cut-off point of the instrument (80%).

Level of practicing pressure ulcer prevention and treatment intervention

Level of practice	Number	Percent
Satisfactory $\geq 80\%$	98	66.2 %
Un satisfactory $<80\%$	50	33.8%

Appropriate statistical analyses were utilized to evaluate the relationship with the variable. The results of the Pearson correlation indicated a significant relationship ($p < 0.05$) between participant age and the level of practice, with a coefficient of 0.28. In contrast, the results of independent T-tests revealed no significant relationship between gender and education level and involving in reading SQCCRC policy ($p > 0.05$). However, a significant relationship was observed between attending courses in pressure ulcer management, and the level of practice ($p < 0.05$). The ANOVA test demonstrated a significant difference in the mean level of practice score among different groups based on years of experience ($P < 0.05$).

7. Discussion

We observed that SQCCRC nurses' self-reported practices in pressure injury prevention and treatment intervention were notably high, with a mean score of 81.3%. This aligns with the findings of Khojastehfar et al., (2020) who highlighted the desirable PUs prevention practices among Iranian nurses. In our study, 66.2% of participants demonstrated satisfactory PUs prevention practices, suggesting an acceptable level of practice among nurses, it is comparable to other study that conducted in china by adopting same tool which shows the 68% of critical care nurses have a satisfactory level of practice (Hu et al., 2021). The elevated scores in PUs prevention practices in our study may be attributed to the

significance of incidence as a nursing-sensitive indicator integrated into nursing quality management and hospital accreditation evaluation. In contrast to our findings, studies among intensive care unit nurses in Egypt and Nepal reported unsatisfactory and unacceptable levels of PUs prevention practices, respectively (Shrestha et al., 2018; Miller et al., 2017). These variations underscore the influence of regional and contextual factors on nurses' adherence to PUs prevention protocols.

In this study, we observed no notable differences in practice scores among nurses based on gender, education level, involving in reading hospital policy. Similar findings have been reported in previous studies, where factors such as, gender, educational level, and hospital type did not significantly influence nurses' practices in pressure injury prevention (Lotfi et al., 2019; Kim et al., 2019). However, in line with our study, prior training specifically on PUs prevention has been associated with significant impacts on nurses' practices in pressure preventing and treatment intervention (Lotfi et al., 2019; Kim et al., 2019; Miller et al., 2017). Furthermore, there is a suggestion in one study that repeated training can contribute to an improvement in nurses' practices over time, enhancing their ability to prevent pressure injuries (Jiang et al., 2020).

8. Conclusion and limitation

In conclusion, the study's results emphasize the need for the development of in-service training or continuous education programs focused on pressure injury (PUs) prevention. These initiatives aim to enhance the deficient knowledge among nurses concerning pressure ulcer prevention and treatment intervention and to optimize their attitudes and practices in this crucial aspect of patient care.

Ultimately, the questionnaires employed in this study gauged nurses' self-reported practices in PUs prevention, potentially differing from their actual practices. It is advisable for a subsequent observational study to be undertaken to delve into the actual practices of nurses in preventing pressure injuries.

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Abbreviation

SQCCRC: Sultan Qaboos Comprehensive Cancer Care and Research Centre

PU: Pressure Ulcers

QARPPU: Nurses' Adherence to Recommendations for Preventing Pressure Ulcers.

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