



Research Article



A Descriptive Study of Nurses' Implementation of Pressure Ulcer Prevention Bundle Care in Total Care Patients

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Abstract

Pressure ulcers are a serious health problem that serve as an indicator of hospital service quality. Proper management and prevention are important for reducing the impact and supporting infection control. If not handled appropriately and promptly, pressure ulcers can become a serious threat to patients, especially for those in total care. There is a need for an efficient and effective innovation to prevent pressure ulcers, one of which is the application of pressure ulcer prevention bundle care. This study aims to describe how well nurses implement a care bundle designed to prevent pressure ulcers in patients who require total care. This research belongs to a quantitative study with a descriptive design. The sample consisted of 34 respondents using a total sampling technique. Data analysis used univariate analysis and frequency distribution tables. The frequency distribution of respondents' age was mostly in the adult category, with 29 respondents (85.3%). Gender was mostly in the female category with 31 respondents (91.2%). Education was mostly in the Diploma III in Nursing category, with 28 respondents (82.4%). Work experience was mostly in the category of more than 3 years, with 32 respondents (94.1%). The category of bundle care implementation for pressure ulcer prevention was mostly in the good category with 23 respondents (67.6%) and fairly good in 11 respondents (32.4%). The implementation of bundle care for pressure ulcer prevention among total care patients at RSUD Muntilan was mostly carried out well by nurses. To ensure that all nurses implement bundle care optimally, we need to improve consistency and conduct periodic evaluations.

INTRODUCTION

Pressure ulcers are a serious health problem in the provision of healthcare services. Pressure ulcers remain a global issue and result in substantial healthcare costs each year. They are still considered a

significant health problem since they are included as indicators of hospital service quality and are an essential component of Infection Prevention and Control (IPC), with pressure ulcer management being an important part of this effort. Pressure ulcers are serious health issues that lead to high

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costs and serve as an indicator of hospital service quality. Proper management and prevention are crucial to reduce their impact and to support infection control [1].

The Directorate General of Health Services, Ministry of Health of the Republic of Indonesia, stated that pressure ulcers are a significant problem in Indonesia. In 2021, the incidence of pressure ulcers in Indonesia reached 33.3%, which is relatively high compared to the prevalence in Southeast Asia, ranging between 2.1–31.3%. Data from hospitals in Central Java Province recorded 9,413 cases (30%) of pressure ulcers in 2024 [2]. Based on data from the IPC Team of RSUD Muntilan, Magelang Regency, in September–October 2022, the incidence rate of pressure ulcers was 15% among 40 hospitalized patients. Meanwhile, 65% of patients were in total care dependency. Of these, 15% of patients with pressure ulcers were those with total care dependency.

The Infection Prevention and Control Committee (IPC) strives to address and prevent pressure ulcers in hospitals, which also requires staff training to improve awareness and management of pressure injuries [1]. Two important aspects of pressure ulcer prevention are intrinsic and extrinsic factors. Intrinsic factors originate within the individual, such as age, disease, malnutrition, immobility, incontinence, impaired consciousness, and obesity. Extrinsic factors, on the other hand, come from outside the patient's body, such as pressure, friction, moisture, or the use of medical devices [3].

Pressure ulcers are a complex problem requiring a multidisciplinary approach. Nurses are the primary healthcare providers involved in pressure ulcer cases. Nurses play a crucial role in preventing and managing pressure ulcers. Studies show that 66.7% of nurses played a good role in pressure ulcer risk assessment, 60% in skin care, 66.7% in improving patients' nutritional status, and 86.7% in providing

adequate education to patients and families. Physicians provide diagnoses and necessary medical management for pressure ulcers. Families offer emotional support and assistance in daily care. Other healthcare teams may focus on physical therapy and nutrition. Environmental factors, including bedding, clothing materials, and humidity, are also involved [4].

Pressure ulcers commonly occur in bedridden patients, most of whom experience decreased consciousness. These patients fall under the category of total care dependency, which places them at higher risk of developing pressure ulcers. Although total care does not directly influence pressure ulcers, the dependency condition becomes a risk factor. Patients requiring total assistance from nurses are those with impaired consciousness, severe weakness, inability to move, and complete dependency on nurses for bathing and elimination, often requiring two nurses for assistance [5].

If not managed properly and promptly, pressure ulcers can pose a serious threat to hospitalized patients, increasing the risk of severe complications including infections that may lead to death [6]. Referring to the International Patient Safety Goals (IPSG) and the Ministry of Health of the Republic of Indonesia, pressure ulcers are included as one of the six critical patient safety indicators to be prevented [7].

The prevention of pressure ulcers in patients is particularly important in total care patients; therefore, an efficient and effective innovation is needed to prevent pressure ulcers, one of which is the implementation of pressure ulcer prevention bundle care. Bundle Care for Pressure Ulcer Prevention is a series of quality management interventions that can be implemented to promote collaboration among various healthcare disciplines and translate clinical guidelines into clinical practice [8]. However, the implementation of pressure ulcer prevention bundle care faces several challenges, such as lack of

knowledge and training, limited resources, insufficient patient and family involvement, low adherence to policies, and diverse needs of nurses [9].

Pressure ulcer prevention bundle care consists of several components, including risk assessment, skin care, repositioning, nutrition and hydration, use of support devices, and education. These interventions can be modified according to patient conditions. This approach has been practiced in RSUD Muntilan to prevent pressure ulcer incidents.

The bundle care for pressure ulcer prevention integrates various proven interventions to reduce the incidence of pressure ulcers, thereby decreasing length of hospital stay and healthcare costs. Research by Yustina showed that the application of bundle care improved nurse compliance and knowledge. The implementation of bundle care also increased patient and family participation and reduced the risk of serious complications that could endanger patient safety [10]. Another study by Zikran et al. demonstrated that implementing bundle care could reduce the prevalence of pressure ulcers by up to 50% [11].

The implementation of pressure ulcer prevention bundle care involves several parties, such as nurses, doctors, patients, families, and hospital management. Moreover, bundle care is a strategy to reduce the prevalence of pressure ulcers. It includes several measures, such as maximizing patient movement and reducing skin pressure, maintaining skin hygiene and patient cleanliness, providing healthy nutrition, repositioning patients, and carefully monitoring patient conditions [10].

In 2023, the incidence rate of pressure ulcers decreased to 1.6%, but in 2024, the incidence increased to 3.1%. Considering the rise in pressure ulcer incidence at RSUD Muntilan from 1.6% in 2023 to 3.1% in

2024, it indicates that the effectiveness of bundle care for pressure ulcer prevention still needs improvement. This is the rationale for conducting the present study, which is to analyze the implementation of bundle care for pressure ulcer prevention in total care patients at RSUD Muntilan. Although bundle care has been applied at RSUD Muntilan, there has been no comprehensive description of its implementation as an evaluation tool to reduce the incidence of pressure ulcers, especially in total care patients. Therefore, this study was conducted to obtain an overview of the implementation of bundle care for pressure ulcer prevention at RSUD Muntilan, particularly in total care patients.

METHOD

This study employed a descriptive research design. The variable in this study was the implementation of pressure ulcer prevention bundle care.

The study population consisted of nurses who managed patients at risk of or with pressure ulcers, with a total sample of 34 respondents selected using a total sampling technique. The inclusion criteria were nurses willing to participate as respondents and those directly involved in performing pressure ulcer prevention. The exclusion criterion was nurses who did not perform bundle care implementation (head nurses).

Two instruments were utilized: (1) a demographic data form covering basic information such as age, gender, education level, and length of service; and (2) an observation checklist assessing the implementation of pressure ulcer prevention bundle care for total care patients by nurses, based on the standards issued by RSUD Muntilan, Magelang Regency. The instrument used in this study was a standardized pressure ulcer prevention bundle care observation checklist officially implemented and approved by the hospital as a permanent clinical observation tool. As it is part of the

hospital's established standard operating procedures, the checklist has undergone institutional review and validation prior to implementation. Observations were conducted directly by the primary researcher using this standardized checklist. To ensure consistency, observations were performed systematically according to the predefined operational definitions of each bundle component.

Data analysis was performed using univariate analysis, presented in frequency distribution tables and percentages to describe all variables. Ethical approval for this study was obtained from the Health Research Ethics Committee of RS Tk. II 04.05.01 dr. Soedjono, with approval number: 1098/EC/V/2025.

RESULT

Characteristics of Respondents

The study was conducted at RSUD Muntilan, Magelang Regency, focusing on nurses' demographic characteristics, including age, gender, educational level, and length of service, as presented in Table 1.

Overview of the Implementation of Bundle Care for Pressure Ulcer Prevention in Total Care Patients by Nurses at RSUD Muntilan, Magelang Regency

Table 2 presents the distribution of bundle care implementation for pressure ulcer prevention in total care patients by nurses at RSUD Muntilan.

A more detailed breakdown of specific bundle care practices for pressure ulcer prevention in total care patients is provided in Table 3.

Table 1
Frequency Distribution of Respondents' Characteristics (Age, Gender, Educational Level, and Length of Service) at RSUD Muntilan, Magelang Regency, 2025 (n = 34)

| No. | Variabel | Category | Frequency (n) | Percentage (%) |
|-----|-------------------|--------------------------|---------------|----------------|
| 1. | Age | Adult | 29 | 85.3 |
| | | Pre-elderly | 5 | 14.7 |
| 2. | Gender | Male | 3 | 8.8 |
| | | Female | 31 | 91.2 |
| 3. | Education | Diploma in Nursing (D3) | 28 | 82.4 |
| | | Bachelor in Nursing (S1) | 5 | 14.7 |
| | | Master in Nursing (S2) | 1 | 2.9 |
| 4. | Length of Service | < 3 years | 2 | 5.9 |
| | | ≥ 3 years | 32 | 94.1 |

Source: Primary data, processed.

Table 2
Overview of Bundle Care Implementation for Pressure Ulcer Prevention in Total Care Patients by Nurses at RSUD Muntilan, Magelang Regency (N = 34)

| No. | Variable | Category | Frequency (n) | Percentage (%) |
|-----|---|----------|---------------|----------------|
| 1. | Implementation of Bundle Care for Pressure Ulcer Prevention | Poor | 0 | 0.0 |
| | | Fair | 11 | 32.4 |
| | | Good | 23 | 67.6 |

Source: Primary data, processed.

Table 3

Types of Bundle Care Implementation for Pressure Ulcer Prevention in Total Care Patients by Nurses at RSUD Muntilan, Magelang Regency (N = 34)

| No. | Type | Yes (n/%) | No (n/%) |
|-----|---|------------|-----------|
| 1. | Maintaining skin hygiene | 34 (100.0) | 0 (0.0) |
| 2. | Repositioning every 2 hours (right and left side) | 19 (55.9) | 15 (44.1) |
| 3. | Reducing pressure on the heel | 33 (97.1) | 1 (2.9) |
| 4. | Massaging or gently rubbing pressure-prone areas with lotion | 29 (85.3) | 5 (14.7) |
| 5. | Preventing friction and shear, maintaining posture and mobility | 31 (91.2) | 3 (8.8) |
| 6. | Maintaining cleanliness of linens and preventing folds/wrinkles | 31 (91.2) | 3 (8.8) |
| 7. | Using anti-decubitus mattresses | 23 (67.6) | 11 (32.4) |
| 8. | Monitoring the start date of bed rest | 34 (100.0) | 0 (0.0) |

Source: Primary data, processed.

DISCUSSION

The main finding of this study indicates that the implementation of pressure ulcer prevention bundle care among nurses was categorized as partial compliance, suggesting that preventive measures were not consistently applied across all components.

Characteristics of Respondents Based on Age, Gender, Educational Level, and Work Experience

Based on the findings, most respondents were in the adult age category, totaling 29 nurses (85.3%). Age plays a significant role in shaping maturity, responsibility, and discipline in carrying out nursing duties. Generally, adulthood reflects better decisionmaking and consistency in adhering to established protocols. In the context of pressure ulcer prevention bundle care, adult nurses tend to perform better, as they have a greater awareness of the importance of preventive measures for total care patients. Adulthood represents a phase of maturity in which individuals are able to make independent decisions and assume full responsibility for their actions. This maturity contributes positively to the consistent implementation of pressure ulcer prevention bundle care [12].

Age is closely related to nursing practice, particularly because it reflects maturity, responsibility, and clinical experience. Older nurses generally possess broader clinical experience and a deeper

understanding of pressure ulcer prevention practices. They are more skilled in identifying risks and making accurate nursing decisions. Although continuous training remains necessary, nurses with greater maturity typically show higher compliance and attention to detail in implementing bundle care [10]. Partial compliance may be associated with high workload and limited staffing, particularly in total care patients who require intensive monitoring. In addition, limited availability of pressure-relieving mattresses may further reduce optimal implementation.

The gender distribution revealed that the majority of respondents were female, totaling 31 (91.2%). Gender may influence work approaches and attitudes toward responsibility. Female nurses are often characterized as more meticulous, empathetic, and disciplined in adhering to procedures. Thus, the predominance of female nurses in this study may have positively supported the implementation of bundle care for pressure ulcer prevention. Female nurses often demonstrate strong interpersonal skills and flexibility in providing care, especially for immobile patients who require special attention. Social norms and cultural expectations that associate nursing with women also influence the professional demographics, reinforcing the positive contribution of female predominance to pressure ulcer prevention efforts [12].

While gender differences can influence care delivery, they are not absolute

determinants. Variations in physical and psychological characteristics between male and female nurses may affect aspects such as precision, physical strength, and patienthandling approaches. Female nurses, for example, may be more patient and careful, while male nurses may excel in patient mobilization. Nevertheless, professional competence, knowledge, and skills remain the primary determinants of effectiveness in pressure ulcer prevention [13].

Most respondents' educational level was Diploma III in Nursing, with 28 nurses (82.4%). Educational background is strongly linked to understanding nursing concepts and evidencebased practice. Higher educational levels typically provide better critical thinking and awareness of the importance of preventive interventions. Nurses with a Diploma III degree already possess sufficient competencies to understand and implement pressure ulcer prevention bundle care, especially in caring for highly dependent patients. Although this program is shorter compared to a Bachelor of Nursing, it provides adequate foundational competencies for clinical practice. Thus, Diploma III graduates are able to carry out bundle care procedures appropriately [12].

Nursing education is essential in supporting quality care and reducing the incidence of pressure ulcers. Bundle care, as a set of integrated preventive interventions, requires sufficient knowledge for effective and consistent implementation. Welltrained nurses are better equipped to apply preventive measures systematically, ensuring optimal patient outcomes. Therefore, strengthening education and training is crucial to enhance the success of pressure ulcer prevention [14].

Regarding work experience, the majority of respondents had worked for more than three years (94.1%). Work experience is closely associated with clinical exposure and confidence in providing care. Nurses

with longer work histories are generally more familiar with standard procedures and able to apply them consistently. Those with more than three years of experience are particularly skilled in managing total care patients and preventing pressure ulcers. Clinical exposure over time develops stronger adherence to standard operating procedures, contributing to more effective bundle care implementation [12].

In general, longer work experience enhances skills, accuracy, and understanding of procedures, directly influencing the quality of bundle care implementation. Nurses who have worked for more than three years are more accustomed to managing complex clinical conditions, including patients at high risk for pressure ulcers. Their accumulated experience helps them implement preventive strategies more effectively, reducing the likelihood of complications [15].

Implementation of Pressure Ulcer Prevention Bundle Care

The study showed that most nurses applied pressure ulcer prevention bundle care in the "good" category. This finding reflects that although some aspects were performed adequately rather than optimally, most preventive measures were carried out effectively. The eight main components of bundle care were generally implemented well, with a high proportion of "Yes" responses in most categories. These included: (1) maintaining skin hygiene, (2) repositioning patients every two hours, (3) reducing heel pressure, (4) massaging or applying lotion to pressureprone areas, (5) minimizing friction and shear, (6) ensuring clean linens without folds, (7) using antidecubitus mattresses, and (8) monitoring bed rest duration.

Nevertheless, two aspects showed lower compliance. First, repositioning patients every two hours was less frequently implemented, particularly among patients

with mechanical ventilation or those requiring restraints due to decreased consciousness. These clinical conditions limited mobility and made repositioning difficult. Second, the use of antidecubitus mattresses was lower due to limited facility availability. These barriers highlight the impact of resource constraints and patient condition on the optimal application of bundle care. Improvements in equipment availability and clinical adaptations are therefore needed to ensure full compliance.

Nurses demonstrated good awareness of the importance of bundle care in preventing pressure ulcers. These results are consistent with Utama & Rohmani, who emphasized the necessity of pressure ulcer prevention guidelines to reduce incidence, especially among immobile patients. Preventive actions such as regular repositioning, skin monitoring, and proper equipment use are central to effective care. Poor implementation of bundle care can increase risks of serious complications and mortality. Hence, consistent and accurate execution is crucial [12].

Pressure ulcers remain a major issue in intensive care units, contributing to pain, infection, and mortality. Preventive measures must therefore be systematic and comprehensive. Bundle care has been proven effective in significantly reducing incidence compared to conventional care, with nurse compliance being the key determinant. Adherence to repositioning, skin checks, and support surface use not only enhances patient safety but also strengthens professional accountability. This aligns with findings from Lavallée et al., who demonstrated that structured interventions improved patient outcomes [16].

Further, Zikran et al. highlighted that bundle care is particularly effective for immobile patients, integrating multiple preventive measures into a single care package. This approach improves care quality while reducing hospital stay and

healthcare costs [11]. Similarly, Gani et al. reported that consistent bundle care implementation significantly decreases pressure ulcer incidence and shortens hospitalization by up to 17 days [8].

Despite generally good performance, the current study identified limitations in two critical components: patient repositioning and mattress use. Failure to reposition patients regularly increases the risk of prolonged pressure on specific areas, while limited access to antidecubitus equipment hinders effective prevention. These findings are consistent with Aliyyah & Husain, who emphasized the importance of regular repositioning for immobile patients, as workload and limited monitoring often hinder compliance [17].

Among the bundle care aspects, skin hygiene received the highest compliance, with all 34 respondents (100%) reporting consistent implementation. This aligns with the essential role of nurses in maintaining skin integrity and preventing early signs of breakdown [18]. In contrast, repositioning was performed by only 19 nurses (55.9%), despite its critical role in preventing pressure ulcers in immobile patients [19].

Other components, such as reducing heel pressure, massaging at-risk areas, minimizing friction, maintaining linen hygiene, and monitoring bed rest initiation, were largely implemented. Together, these actions demonstrate the effectiveness of bundle care as an evidencebased, structured approach for consistent and comprehensive patient care [8], [11].

This study has several limitations. First, the study was conducted in a single hospital setting, which may limit generalizability. Second, observations were conducted by a single researcher, which may introduce observer bias. Third, the descriptive design does not allow analysis of causal relationships between nurse characteristics and compliance levels.

CONCLUSION

The implementation of pressure ulcer prevention bundle care at RSUD Muntilan was generally categorized as good, although variability across components was observed. Repositioning was the most consistently implemented component, while the use of anti-decubitus mattresses showed lower compliance. Based on these findings, hospital management should strengthen periodic audits and monitoring systems to ensure consistent implementation. Structured and ongoing staff training is also recommended to enhance adherence to evidence-based practice. Additionally, adequate provision of essential equipment, including anti-decubitus mattresses, is necessary to support optimal prevention efforts.

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