İSTANBUL UNIVERSITY PRESS

CURARE–Journal of Nursing,
CURARE 2025, (9): 54–61

https://doi.org/10.26650/CURARE.2025.1766539
Submitted: 15.08.2025
Accepted: 06.10.2025

CURARE
Journal of Nursing

Research Article

Open Access

A Descriptive Review of Nursing Theses on Medical Device-Related Pressure Injuries Conducted in Türkiye

Alper Akyüz [1] & Meryem Yavuz van Giersbergen [2]

[1] Manisa Celal Bayar University Hafsa Sultan Hospital, Manisa, Türkiye
[2] Ege University Faculty of Nursing, İzmir, Türkiye

Abstract

Objective: This systematic review aimed to examine postgraduate theses conducted in the field of nursing in Turkiye related to medical device-related pressure injuries (MDRPIs), with the objective of identifying trends, research themes, and the current level of knowledge in this area.

Methods: As of June 2025, a total of 16.460 nursing theses registered in the Council of Higher Education National Thesis Centre database were screened. Using keywords such as “medical device,” “pressure ulcer,” “pressure injury,” “device-related pressure injury,” and “endotracheal tube,” 162 theses were initially identified, of which 16 met the inclusion criteria and were included in the review.

Results: The reviewed theses were categorised under four main themes: (1) prevalence, risk factors, and clinical characteristics of medical device-related pressure injuries; (2) effects of educational interventions targeted at nurses; (3) relationships between knowledge, attitudes, self-efficacy, and learning motivation; and (4) development of measurement instruments.

Conclusion: This systematic review reveals an increasing academic interest in MDRPIs within the field of nursing in Turkiye recently. It emphasises the need to promote both academic and practice-oriented research on MDRPIs, the use of standardised measurement tools, and the widespread implementation of comprehensive educational programmes.

Keywords Medical Device · Nursing Intervention · Prevention · Pressure Ulcer

Citation: Akyüz A. & Yavuz van Giersbergen M. A Descriptive Review of Nursing Theses on Medical Device-Related Pressure Injuries Conducted in Türkiye. CURARE–Journal of Nursing 2025; (9): 54-61. DOI: 10.26650/CURARE.2025.1766539

Corresponding author: Alper Akyüz alper-akyuz@hotmail.com

INTRODUCTION

Medical Device–Related Pressure Injuries (MDRPIs) are localised tissue damages resulting from intense or prolonged pressure and friction applied by devices used for diagnostic or therapeutic purposes on the surface of the skin. These injuries typically reflect the shape and contact area of the device (1,2). The wound develops as necrosis and ulceration due to pressure on the soft tissue, becoming apparent on the skin in the form of the device (3). In brief, the aetiology of MDRPIs is entirely based on the mechanical load directly exerted by the medical device used. Terminologically, international organisations such as the NPUAP and EPUAP define MDRPIs as "pressure injuries resulting from the use of devices designed for diagnostic or therapeutic purposes." Common medical devices causing MDRPIs include endotracheal tubes, urinary catheters, nasogastric tubes, and oxygen face masks (4,5). MDRPIs are most frequently observed in intensive care patients, with reported prevalence rates generally ranging from 10% to 20%. Global studies indicate an incidence of 19% and a prevalence of 10%–12% (6). The rates are higher in neonatal and paediatric intensive care units, reaching up to 35% (7). In Turkiye, the MDRPI rates have been reported as 11.6%–29.4% in adults, 35.3% in neonates, and 6.8% in paediatric patients (8,9,10). These data highlight that MDRPIs are a common and serious problem, particularly in intensive care settings.

MDRPIs can lead to pain, infection, tissue adhesion, and functional impairment in patients, which not only exacerbates patient suffering but also increases medical costs, affects disease prognosis, prolongs hospital stays, imposes economic burdens on patients, elevates the workload of healthcare professionals, reduces patient and family satisfaction, impacts relationships between doctors, nurses, and patients, and may even trigger medical disputes (11,12).

Nurses play a pivotal role in the prevention of MDRPIs (13). Regular inspection of areas where devices contact the skin, early diagnosis, and risk assessment form the foundation of preventive care. Research indicates that interventions such as nurse training and regular skin assessments can reduce injury rates from 30% to 1% (14). Evidence-based preventive measures include the use of barrier materials, repositioning, and protective dressings. Additionally, specialised pads, air-supported devices, and multidisciplinary training programmes have been found to be effectiveeffective in reducing the incidence of MDRPIs (15).

Although recent years have seen an increase in studies on MDRPIs in the Turkish nursing literature, it is still noted that the topic remains insufficiently explored, particularly with respect to evidence-based practices related to prevention and care (16). This review aims to compile postgraduate theses on MDRPIs in the field of nursing in Turkiye, to present the current state of knowledge, and to identify gaps in the literature.

METHODS

Type of Study

This study was conducted as a systematic literature review between June 21 and August 21, 2025, and was designed as a retrospective descriptive study.

Data Collection

As of June 25, 2025, a total of 16,460 theses were registered in the field of nursing in the National Thesis Centre database of the Council of Higher Education (YÖK). For the purposes of this study, relevant theses addressing pressure injuries caused by medical devices were identified. During the screening process, the "advanced search" and "detailed search" options were used with the following keywords: "medical device," "pressure ulcer," "pressure injury," "decubitus ulcer," "device-related pressure ulcer," "medical device pressure injury," "endotracheal tube," and "nasogastric tube." The field was limited exclusively to "nursing."

Because of this screening, 162 theses were identified as potential candidates for inclusion. All these were evaluated in detail based on their title, abstract, and content. Following the evaluation, 56 theses were excluded for focusing on pressure injuries unrelated to medical devices, and 90 theses were excluded due to irrelevance in terms of content and purpose, including duplicate entries.

Consequently, 16 postgraduate theses that specifically addressed pressure injuries caused by medical devices and were deemed appropriate for the scope of the study were included in the sample. All these were fully accessible in full-text format, and no technical issues or exclusions were encountered regarding access.

Inclusion Criteria

This study included postgraduate theses that were uploaded to the Council of Higher Education National Thesis Centre database up to June 2025, written in Turkish, conducted within the field(s) of nursing, and available as open-access full texts. These were eligible if their titles contained at least one of the following keywords: "medical device," "pressure ulcer," "pressure sore," "pressure injury," or "decubitus ulcer." Only studies specifically addressing pressure injuries caused by medical devices were included.

Exclusion Criteria

Postgraduate theses that did not include the specified keywords in their titles, were not open access, lacked full-text availability, were conducted in disciplines outside of nursing, or focused on pressure injuries not related to medical devices (e.g., post-surgical, intensive care–related, or general pressure ulcers) were excluded from the study.

Data Evaluation

The theses included in the sample were examined using a systematic content analysis method. Each thesis was carefully evaluated on the basis of its research design, objective, sample structure, data collection tools, and results sections. The findings were presented using frequencies and percentages.

RESULTS

An analysis of the 16 theses included in the study revealed that 75.0% were master's theses, while 25.0% were doctoral dissertations. In terms of university type, 75.0% of the theses were conducted at public universities and 25.0% at foundation (private) universities. Regarding the research methodology, all of the theses (100.0%) employed quantitative research methods. When examining the research designs, 37.5% were descriptive, 12.5% were descriptive-cross-sectional, 12.5% were quasi-experimental, 12.5% were experimental, 18.75% were methodological, and 6.25% combined methodological and experimental designs (Table 1).

An analysis of the distribution by year showed that four theses (25.0%) were completed in 2022 and another four (25.0%) in 2023. The highest number of theses was observed in 2024, with six theses accounting for 37.5% of the total. As of 2025, only two theses (12.5%) had been completed. These data indicate a growing interest in this research topic in recent years, with a notable concentration in 2024.

Table 1. Overview of Research Characteristics in Graduate Theses on MDRPI

Category	n	%
Type of Thesis		
Master's Thesis	12	75.00
Doctoral Dissertation	4	25.00
Type of University		
Public University	12	75.00
Foundation (Private) University	4	25.00
Research Method		
Quantitative	16	100.00
Research Design		
Descriptive	6	37.50
Descriptive – Cross-sectional	2	12.50
Quasi-experimental	2	12.50
Experimental	2	12.50
Methodological	3	18.75
Methodological + Experimental	1	6.25

Among the 16 theses analysed, the most frequently used scale was the Braden Risk Assessment Scale, which appeared in six theses (37.5%). This was followed by Medical Device–Related Pressure Injury Assessment Forms and attitude questionnaires (Attitudes Towards Medical Device–Related Pressure Injuries; Attitude Questionnaire on Medical Device–Related Pressure Ulcers), each used in four theses (25%). The Pressure Injury Management Self-Efficacy Scale was used in three theses (18.75%). The following tools and scales were each used in only one thesis (6.25%): Nutritional Assessment Test, Oral Mucositis Evaluation Scale, Information Form on Pressure Injuries in Premature Infants, Training Evaluation Form, Medical Device–Related Pressure Injury Risk Assessment Scale (MDRPI-RAS), Braden QD-T Scale, Staging and Monitoring Form for Nasogastric Tube Pressure Injuries, Analytical Rubric, Learning Motivation Scale, Jackson/Cubbin Risk Assessment Scale, and a mobile application (Hi Nurse) (Table 2).

In this review, postgraduate theses conducted in the field of nursing in Türkiye on MDRPI were thematically analysed. The studies addressed both clinical outcomes and nurses' knowledge, attitudes, and practices, while also examining the development of assessment tools and the effectiveness of educational interventions. The findings were categorised under four main themes: (1) the prevalence, risk factors, and clinical characteristics of MDRPI; (2) the impact of educational interventions on nurses' knowledge levels; (3) the relationships among knowledge, attitudes, self-efficacy, and learning motivation; and (4) scale and tool development studies.

The studies within each theme were presented in detail according to their methodological approaches, sample sizes, measurement tools used, and key findings.

Prevalence, risk factors, and clinical characteristics of medical device–related pressure injuries (MDRPI)

Veziroglu (2022): Among 148 patients in a surgical intensive care unit, the prevalence of MDRPI was 38.2%, with tracheostomy ties being the most common cause (60%). Injuries mostly developed in the ear area and were stage 2, typically appearing after the second day. Significant risk factors included advanced age, high body mass index (BMI), low Braden score, low haemoglobin and albumin levels, infections, chronic diseases, and use of sedatives and insulin.

Table 2. Summary of Research Studies on Medical Device-Related Pressure Injuries(MDRPIs)

Topic	Year	Method	Sample	Key Findings	Data Collection Tools
MDRPIs in Surgical ICUs	2021	Descriptive	148 patients	38.2% injury rate; most common: tracheostomy ties; mostly Stage 2	Patient Information Form, Braden Scale, Observation Form
Effect of Training on Nurses	2021	Quasi-experimental	81 nurses	Knowledge scores increased: 82.44 → 94.67	Introductory Form, Knowledge Form, and Training Evaluation Form
Oral mucosa injuries related to endotracheal tube (ETT)	2022	Descriptive	250 patients	41.6% injury rate; lower lip most affected day 9; BMI and clinical diagnoses were influential	Data Collection Form, Oral Mucositis Assessment Scale
Frequency of ETT-related injuries	2022	Descriptive	146 patients	80.14% injury rate; significant correlation with BMI	Introductory Form, Braden Scale, NRS-2002, ETT Observation Form
Turkish Validity-Reliability of Attitude Scale	2022	Methodological	183 nurses	2-factor structure; Cronbach's alpha > 0.75	Nurse Information Form, MDRPI Attitude Scale
Use of Hydrocolloid Dressing for NG Tube Injuries	2023	Randomised controlled	102 patients	0% injury in the hydrocolloid group; 97.1% in the control group	Intro Form, Injury Assessment Form, and Observation Forms
Development of the MDRPI Risk Assessment Scale (MDRPI-RAS)	2023	Methodological	200 patients	8 items, 2 factors; valid and reliable	Intro Form, Braden Scale, MDRPI-RAS
Care Bundle in Paediatric ICU	2023	Two-phase: Validation and quasi-experimental	183 nurses, paediatric patients	Braden QD-T validated; fewer injuries in the intervention group	Data forms, Braden QD-Turkish, Care bundle records
Analytical Rubric for MDRPIs	2024	Methodological	95 patients, 5 nurses	9 criterion rubric; generalizability coefficient (G) = 0.83	Analytical Rubric, Expert Review Form, and Observation Form
MDRPIs in the Prone Position	2024	Descriptive	220 patients	100% injury rate; most common: chest pad, head support	Consent Form, Data Form, and Braden Scale
Nurses' knowledge and attitude levels	2024	Descriptive	154 nurses	70% had positive attitudes; moderate knowledge level	Knowledge Form, Knowledge & Practice Tool (HBUBA), MDRPI Attitude Scale (MDPIAS)
Knowledge and Self-Efficacy	2024	Descriptive	262 nurses	Knowledge score: 11.28; self-efficacy: 64.46	Knowledge Form, HBUBA, Pressure Injury Management Self-Efficacy Scale (PIMSES)
Mediating Role of Attitude	2024	Descriptive	302 nurses	Attitude significantly mediated self-efficacy	Knowledge Form, Knowledge Assessment Test, Attitude Scale for Pressure Injury Prevention, PIMSES
Effect of Learning Motivation on Attitude	2025	Descriptive	182 nurses	High motivation; good knowledge and attitude levels	Intro Form, MDRPI Knowledge Scale (MDRPI-KS), AS-PIP, Learning Motivation Scale
Comparison of the Three NG Tube Fixation Methods	2025	Randomised controlled	84 patients	Elastic tape: 64.3% injury rate; silk and transparent tape safer	Information & Follow-up Form, Braden Scale, GCS, Wound Monitoring Form
Impact of "Hi Nurse" Mobile App	2025	Quasi-experimental	13 nurses, 164 patients	Knowledge ↑; injury incidence dropped from 42.7% → 8.53%	Knowledge Form, MDRPI Knowledge Questionnaire, Incidence Form, Braden, GCS, Mobile App

MDRPI: Medical Device-Related Pressure Injury, ICU: Intensive Care Unit, ETT: Endotracheal Tube, BMI: Body Mass Index, NRS-2002: Nutritional Risk Screening 2002, RAS: Risk Assessment Scale, Braden Scale: Braden Pressure Ulcer Risk Assessment Scale, Braden QD-T: Braden QD Scale – Turkish Version, HBUBA: Nursing Knowledge and Practice Tool, PIMSES: Pressure Injury Management Self-Efficacy Scale, KAT: Knowledge Assessment Test, AS-PIP: Attitude Scale for Pressure Injury Prevention, MDRPI-KS: MDRPI Knowledge Scale, GCS: Glasgow Coma Scale, NG: Nasogastri

Ozdemir (2022): In 250 intubated patients, the rate of oral mucosal pressure injuries was found to be 41.6%, with 71.2% occurring on the lower lip, typically developing around day 9. The identified risk factors included low BMI, post-cardiopulmonary resuscitation (CPR), sepsis, acute renal failure, parenteral nutrition, and steroid therapy.

Cambaz (2022): Among 146 intubated patients, 80.14% developed MDRPI due to endotracheal tubes (ETTs), most commonly on the 3rd and 4th days. The average time to injury development was 4.42±1.72 days. A significant relationship was found between low BMI and injury development.

Yesilyurt (2023): In the prevention of nasogastric tube (NGT)–related pressure injuries, no injuries developed in the group where hydrocolloid dressings were applied. The injury rates in the control and skin care groups were 97.1% and 94.1%, respectively. Not using the hydrocolloid dressing increased the risk by 20.3 times.

Çıldır (2024): Among 220 patients operated in the prone position, MDRPIs were detected in 100% of cases, with a total of 1,262 injuries recorded. Of these, 99.9% were stage 1. The most common contributing devices were the chest pads and head supports. Risk factors included the duration of surgery and anaesthesia and low Braden scores.

Kaya (2025): The study compared three different NGT fixation materials. The injury rates were 64.3% in the elastic tape group, 35.7% in the silk tape group, and 44% in the transparent tape group. Elastic tape posed the highest risk off pressure injuries.

Educational interventions and their effects on nurses' knowledge levels

Ergün (2021): After training provided to neonatal nurses, the mean knowledge score increased from 82.44 to 94.57 in the first week and 94.67 by the first month. The educational programme significantly improved the nurses' knowledge levels.

Atmaca (2025): Following training delivered via the "Hi Nurse" mobile application, nurses' knowledge significantly increased (pre-test: 24.00±3.49; post-test: 27.15±2.19). Moreover, the incidence of MDRPI dropped from 42.7% to 8.53%.

Relationships among knowledge, attitudes, self-efficacy, and learning motivation

Dağlı (2024): In a study with 262 nurses, the mean knowledge score was 11.28±3.29, and the self-efficacy score was 64.46±22.52. Age and institution type significantly affected knowledge level, whereas age alone impacted self-efficacy.

Yılmaz (2024): Nurses' knowledge positively influenced their attitudes, and attitudes, in turn, positively affected self-efficacy. Attitude played a mediating role in 70.4% of the relationship between knowledge and self-efficacy.

Lafcı (2025): Nurses' average scores were above the general mean for knowledge (17.40±3.72), attitude (42.39±4.94), and learning motivation (61.77±8.61). Having postgraduate education and high learning motivation positively affected attitudes.

Kırcan Dağ (2024): The mean knowledge score was 12.7±3.0, and 70.1% of nurses demonstrated a positive attitude. Gender, years of service, care experience, and previous training significantly influenced knowledge levels.

Scale and instrument development: validity and reliability studies

Zorlu (2022): The Attitude Scale for Medical Device–Related Pressure Injuries (AS-MDRPI) was adapted into Turkish, with two subdimensions identified: prevention and care. Cronbach's alpha coefficients were 0.754 (prevention) and 0.813 (care).

Kahraman (2023): The MDRPI Risk Assessment Scale was developed with a two-factor, 8-item structure. The Cronbach's alpha coefficient was 0.73, and the explained variance was 47.06%.

Elmaoğlu (2023): The Braden QD-T scale was adapted into Turkish, with a Cronbach's alpha of 0.878. The newly developed TAK-BYÖP/NES educational package was found to be effective in preventing MDRPI.

Deniz (2024): In the analytical rubric developed for children, the G coefficient was 0.83, sensitivity was 0.80, and specificity was 0.98, indicating high validity and reliability.

DISCUSSION

It has been observed that most reviewed theses (75%) were conducted at the master's level, and all of them (100%) employed quantitative research methods. The preference for quantitative methods is methodologically consistent with the nature of the subject matter, which focuses on measurable clinical outcomes such as medical device–related pressure injuries (MDRPIs). This choice also indicates an emphasis on generating objective, data-driven findings. The growing use of diverse research designs reflects the field's effort to explore different dimensions of the topic. However, the absence of clear sample size calculations and limited methodological detail in some theses aligns with methodological quality issues previously noted in the nursing research literature (17).

MDRPIs are a significant clinical concern, particularly in intensive care units (ICUs) and operating rooms. The literature consistently reports that these injuries are frequently caused by devices such as tracheostomy ties, endotracheal tubes (ETTs), and nasogastric tubes (NGTs). One study focusing on ICUs reported an MDRPI incidence rate of 39.7%, with the most commonly affected regions being the nose, mouth, and cheeks (18). In a prospective study, 80.1% of patients who received ETTs developed pressure injuries associated with the tube, typically occurring between the third and fourth days of intubation (19). Other common causes of MDRPIs include CPAP/BiPAP masks, non-invasive ventilation devices, urinary

catheters, and intravascular catheters. Indeed, one study reported that 55% of MDRPIs were associated with ETTs and their fixation methods, 9.3% with high-flow oxygen cannulas, 6.7% with radial artery catheters, and 5% with oxygen masks (20). In the operating room, approximately 31.6% of MDRPIs originated from vital monitor electrodes, 27.9% from auxiliary equipment, and 19.1% from other therapeutic devices (21). In addition to the types and usage areas of medical devices, patient-related factors play a crucial role in the development of MDRPIs.

Patient-related risk factors for MDRPIs include age, comorbidities, severity of illness, and nutritional status. A meta-analysis revealed that advanced age (OR ≈ 1.06), diabetes (OR ≈ 3.20), and oedema (OR ≈ 3.62) significantly increased the risk of MDRPIs. Moreover, low Braden scores, as well as high SOFA and APACHE II scores, were associated with increased risk. Additional significant risk factors included prolonged device use, vasopressor therapy, history of surgical interventions, and prone positioning of patients. Conversely, high levels of haemoglobin and albumin were found to have protective effects (18,22). However, some studies have reported that variables such as age, BMI, malignancy, and the Braden score did not significantly influence the severity of MDRPIs (23).

Understanding risk factors is important, but empowering nurses through targeted education is equally critical for effective prevention. The reviewed theses demonstrated that educational interventions are effective in improving nurses' knowledge regarding MDRPIs. Recent studies have shown that nurses' knowledge on MDRPI prevention is often insufficient, and there is a need for additional training (24). Specialised training programmes are necessary to prevent MDRPIs. Studies involving ICU nurses and patients have revealed that the use of protocols and checklists to prevent MDRPIs has a positive impact on nursing performance (25). In one study, video-based protocol training was found to be more effective in increasing MDRPI prevention knowledge compared with conventional booklet-based training (26). However, few studies have evaluated the long-term sustainability or practical implementation of such training programmes in clinical settings, which remains an area requiring further exploration.

While training improves knowledge, sustained behavioural change also depends on factors such as self-efficacy, attitudes, and motivation. In nursing theses related to MDRPIs, particular emphasis was placed on attitudes, self-efficacy, and learning motivation. The literature generally indicates that nurses' self-efficacy and attitudes towards MDRPI prevention are above average (24,27). Although data on learning motivation is limited, it appears to be high (28). In a study among ICU nurses, 90.2% of participants expressed a desire to receive MDRPI training (29).

In recent years, various scales and tools have been developed and validated—both in the original form and through Turkish adaptation studies—to assess MDRPIs. Zorlu and Bahar (2025) developed the Turkish version of the Attitude Scale for MDRPIs (AS-MDRPI), reporting strong content validity (CVI = 0.95) and factor structure, confirming its reliability and validity (30). Baran and Özden (2024) adapted the MDRPI Knowledge Scale into Turkish (31). Erbay Dalli and Girgin (2023) created a 16-item multiple-choice test to assess nurses' knowledge of MDRPIs (4). Kahraman (2023) developed the MDRPI Risk Assessment Scale (MDRPI-RAS), consisting of 8 items and two factors, with a Cronbach's alpha of ≈0.73 and 47% explained variance (32). Çiğdem et al. (2025) successfully adapted the Braden QD scale into Turkish for paediatric use, demonstrating sufficient structural validity. The Braden QD-T was found to be a reliable tool for identifying the risk of MDRPIs in paediatric patients (33). Collectively, these studies indicate that the scales and instruments developed for the assessment of MDRPIs are scientifically valid and reliable, contributing meaningfully to the field of nursing and clinical risk assessment.

These findings highlight the growing academic interest in MDRPIs in Türkiye and emphasise the need for standardised, sustainable, and multidisciplinary strategies for both clinical practice and nursing education.

Limitations

The scope of this research is limited to graduate theses in nursing that are registered in the Council of Higher Education National Thesis Centre, are open access, and whose full texts were available. Theses that were not publicly accessible or lacked full-text availability were excluded from the study. Due to the keyword-based search strategy focused on thesis titles, it is possible that some studies related to MDRPIs may have been overlooked if the relevant keywords were absent from the titles.

CONCLUSION

This review presents an overview of graduate theses conducted in the field of nursing in Türkiye concerning MDRPIs. The findings reveal that academic interest in this area has significantly increased in recent years, with most research conducted at the master's level and using quantitative methods. The theses cover a wide range of topics, from the prevalence and risk factors of MDRPIs to the effectiveness of educational interventions for nurses, the relationships

between knowledge, attitudes, and self-efficacy, and scale development studies.

The results indicate that nurses' levels of knowledge and attitudes play a crucial role in the prevention of MDRPIs and, that educational and technology-supported interventions (e.g., mobile applications) have a positive impact on clinical outcomes. Furthermore, the increasing number of scale development and Turkish adaptation studies is considered an important step towards standardisation in the field. However, a substantial portion of these remains descriptive and cross-sectional in nature, with relatively few experimental or intervention-based studies. This highlights the need for stronger methodological approaches to support evidence-based practices in the prevention and management of MDRPIs.

In conclusion, given the critical role of nurses in clinical practice, it is essential to increase both academic and practice-oriented research on MDRPIs, promote the use of standardised assessment tools, and expand comprehensive educational programmes. By providing a snapshot of the current literature, this review aims to contribute to the development of more effective strategies in nursing education and practice related to MDRPIs.

Peer Review: Externally peer-reviewed.
Author Contributions: Conception/Design of Study- MYvG, AA; Data Acquisition- A.A.; Data Analysis/Interpretation- A.A.; Drafting Manuscript- A.A.; Critical Revision of Manuscript- M.Y.v.G; Final Approval and Accountability- M.Y.v.G., A.A.
Conflict of Interest: Authors declared no conflict of interest.
Grant Support: Authors declared no financial support.

Author Details

Alper Akyüz
[1] Manisa Celal Bayar University Hafsa Sultan Hospital, Manisa, Türkiye
0000-0001-5194-5782 alper-akyuz@hotmail.com

Meryem Yavuz van Giersbergen
[2] Ege University Faculty of Nursing, İzmir, Türkiye
0000-0002-8661-0066

REFERENCES

1 Kottner J, Cuddigan J, Carville K, Balzer K, Berlowitz D, Law S et al. Prevention and treatment of pressure ulcers/injuries: The protocol for the second update of the international Clinical Practice Guideline 2019. J Tissue Viability, 2019;28(2):51–8. doi: 10.1016/j.jtv.2019.01.001.

2 Pittman J, Gillespie C. Medical device-related pressure injuries. Crit Care Nurs Clin North Am 2020;32(4):533–42. doi: 10.1016/j.cnc.2020.08.004.

3 Zhang N, Li Y, Li X, Li F, Jin Z, Li T et al. Incidence of medical device-related pressure injuries: a meta-analysis. Eur J Med Res 2024;29(1):425. doi.org/10.1186/s40001-024-01986-2

4 Erbay Dallı Ö, Ceylan İ, Kelebek Girgin N. Incidence, characteristics and risk factors of medical device-related pressure injuries: An observational cohort study. Intensive Crit Care Nurs 2022;69:103180. doi: 10.1016/j.iccn.2021.103180.

5 Dang W, Liu Y, Zhou Q, Duan Y, Gan H, Wang L et al. Risk factors of medical device-related pressure injury in intensive care units. J Clin Nurs 2022;31(9–10):1174–83. doi: 10.1111/jocn.15974.

6 Lyu Y, Huang YL, Li ZY, Lin F. Interventions and strategies to prevent medical device-related pressure injury in adult patients: A systematic review. J Clin Nurs 2023;32(19–20):6863–78. doi: 10.1111/jocn.16790.

7 Yarkıner Z, Bahar A, Sönmez M, Kapan E, Şahin S, Köstekçi E et al. Incidence of medical device-related pressure injuries and identification of risk factors in the neonatal unit. J Tissue Viability 2024;33(4):916–22. doi: 10.1016/j.jtv.2024.09.005.

8 Tezcan B, Ecevit Alpar Ş, Gülseven Karabacak B. Medical device-related pressure injuries in intensive care patients: A prospective and descriptive study. J Tissue Viability 2024;33(2):275–83. doi: 10.1016/j.jtv.2024.03.003.

9 Pamuk Cebeci S, Çobanoğlu A, Oğuzhan H. Medical device-related pressure injury development in intensive care patients and affecting factors: point prevalence study SBÜ Hemşirelik Derg 2024;6(1):57–64. doi.org/10.48071/sbuhemsirelik.1374543

10 Başbakkal Z, Yilmaz HB, Gümüş M, Belli M, Erçelik ZE. Medical device-related pressure injuries in paediatric patients: An incidence study in a children's hospital. J Clin Nurs 2024;33(7):2633–9. doi: 10.1111/jocn.16973.

11 Chen G, Li X, Li X, Liu S, Xie J. Mucosal membrane pressure injury in intensive care units: A scoping review. Intensive Crit Care Nurs 2024;80:103560. doi: 10.1016/j.iccn.2023.103560

12 Temiz Z, Aydın Sayılan A, Sayılan S, Azum E. Incidence, severity and characteristics of medical device-related pressure injuries in adult intensive care patients: A single-centre, cross-sectional study. J Tissue Viability 2024;33(2):220–4. doi: 10.1016/j.jtv.2024.02.007.

13 Sönmez M, Güven Özdemir N, Harkın Gemicioğlu Ş, Aydın A. Intensive care nurses' knowledge regarding medical device-related pressure injuries and factors affecting these: A descriptive and cross-sectional study. J Tissue Viability 2025;34(2):100880. doi: 10.1016/j.jtv.2025.100880.

14 Lee H, Choi S. Protocols and their effects for medical device-related pressure injury prevention among critically ill patients: A systematic review. BMC Nurs 2024;23(1):403. doi: 10.1186/s12912-024-02080-y

15 Lyu Y, Huang YL, Li ZY, Lin F. Interventions and strategies to prevent medical device-related pressure injury in adult patients: A systematic review. J Clin Nurs 2023;32(19–20):6863–78. doi: 10.1111/jocn.16790

16 Aydın Kahraman H, İpek Çoban G. risk of developing medical device–related pressure ınjuries and nursing approach. Gümüşhane Univ Sağlık Bilim Derg 2024;13(1):486–93.

17 Sürme Y, Akbuğa Gökçe. Investigation of nursing theses related to wound care in Turkey: a systematic review Erciyes Med J 2021;43(3):221–7. doi:10.14744/etd.2020.93195

18 Dirgar E, Gider NY, Tosun B. Determination of incidence and risk factors of medical device-related pressure injury in the ICU: A descriptive study. Adv Skin Wound Care 2024;37(3):1–6. doi: 10.1097/ASW.0000000000000113.

19 Cambaz C, Ozdemir Koken Z, Sayin MM. Incidence, characteristics and risk factors of endotracheal tube-related pressure injuries in intensive care units. Nurs Crit Care 2024;29(6):1610–8. doi: 10.1111/nicc.13164.

20 Fulbrook P, Butterworth J. Incidence and characteristics of device-related pressure injuries in intensive care: a four-year analysis. Intensive Crit Care Nurs 2025;87:103955. doi: 10.1016/j.iccn.2025.103955.

21 Ma LY, Chen HL, Gu HY, Hua L, Gao XM. Analysis of the clinical features and risk factors of device-related pressure injuries in the operating room. Int Wound J 2023;20(3):706–15. doi: 10.1111/iwj.13912

22 Gou L, Zhang Z, A Y. Risk factors for medical device-related pressure injury in ICU patients: A systematic review and meta-analysis. PLoS One 2023;18(6):e0287326. doi: 10.1371/journal.pone.0287326.

23 Jung YK, Hahn HM, Park DH. Factors influencing the severity of medical device-related pressure injuries: Pressure injury staging comparison. Int Wound J 2023;20(7):2735–41. doi: 10.1111/iwj.14147

24 Fang W, Zhang Q, Chen Y, Qin W. Knowledge, attitude, and practice of clinical nurses towards medical device-related pressure injury prevention: A systematic review. J Tissue Viability 2025;34(1):100838. doi: 10.1016/j.jtv.2024.12.002.

25 Seong YM, Lee H, Seo JM. Development and testing of an algorithm to prevent medical device-related pressure injuries. Inquiry 2021;58:469580211050219. doi: 10.1177/00469580211050219

26 Yoo M, Lee H, Han J. The development and evaluation of a protocol-based video education program on medical device-related pressure injury prevention for nurses in a comprehensive nursing care unit. Int Wound J 2025;22(6):e70692. doi: 10.1111/iwj.70692

27 Yılmaz E. Yoğun bakım hemşirelerinin tıbbi cihaz ile ilişkili basınç yaralanmalarına yönelik bilgi düzeyi ve öz yeterlikleri arasındaki ilişkide basınç yaralanmalarını önlemeye yönelik tutumun aracılık rolü [master's thesis]. Afyonkarahisar: Afyonkarahisar Sağlık Bilimleri Üniversitesi, Lisansüstü Eğitim Enstitüsü; 2024. 111 p.

28 Liu J, Nan M, Yu C, Yao D. Prevention of medical device-related pressure injury in the operating room: Nurses' knowledge and training imperatives. Int J Nurs Health Care Res 2024;7:1579. doi: https://doi.org/10.29011/2688-9501.10157910 10.29011/2688-9501.10157910

29 Kurtgöz A, Kızıltepe SK, Keskin H, Sönmez M, Aşatır İ. Intensive care nurses' knowledge and practices regarding medical device-related pressure injuries: A descriptive cross-sectional stduy. Int Wound J 2024;21(10):e70088. doi: 10.1111/iwj.70088

30 Zorlu E, Bahar A. Reliability and validity of the Turkish version of the attitude questionnaire regarding medical device-related pressure injuires (AQMDRPI). Avrasya Sağlık Bilimleri Dergisi 2025;8(1):44–55.

31 Baran Z, Özden D. The Turkish validity and reliability study of the medical device related pressure injury information scale. İzmir Katip Çelebi Univ Sağlık Bilim Fak Derg 2024;9(1):73–80.

32 Aydın Kahraman H. Tıbbi Cihaza Bağlı Basınç Yarası Risk Değerlendirme Ölçeğinin Geliştirilmesi (Tez No. 813625) doctoral dissertation. Erzurum: Atatürk Üniversitesi; 2023. 150 p.

33 Çiğdem Z, Elmaoğlu E, Usgu S, Güler S. Adaptation and validation of a Turkish language version of Braden QD scale for predicting risk of medical device-related pressure injuries in paediatric patients. J Wound Ostomy Continence Nurs 2025;52(2):147–52. doi: 10.1097/WON.0000000000001160