

# Nurses' Knowledge and Attitudes Towards Pressure Ulcer Prevention: Literature Review

Gusti Ayu Putu Krisna Dewi<sup>1</sup>, Supratman Supratman<sup>2\*</sup>, Nurlaila Fitriani<sup>2</sup>, Vinami Yulian<sup>2</sup>

<sup>1</sup> Nurse Profession (Ners) Program, Faculty of Health Science, Universitas Muhammadiyah Surakarta

<sup>2</sup> School of Nursing, Faculty of Health Science, Universitas Muhammadiyah Surakarta

\*Corresponding author. Email: [sup241@ums.ac.id](mailto:sup241@ums.ac.id)

## ABSTRACT

**Introduction:** Pressure ulcer is one of important complication and frequently happens to inpatients. Moreover, pressure ulcer has a significant impact on patients' life quality. Nurses have a critical role in the prevention of pressure ulcer. Several treatments to prevent pressure ulcer e.g. wound dressing, combination of massage and repositioning, and health promotion. In order to do nursing procedure, the knowledge and attitudes of nurses towards the prevention of pressure ulcer are crucial. **Objectives:** The goal of this research was to investigate the relationship between nurses' knowledge and attitudes toward pressure ulcer prevention. **Methods:** This study was a literature review which completed out by searching references through several online databases, namely Google Scholar, ScienceDirect, and Pubmed by using keywords "Pengetahuan", "Sikap", and "Luka tekan" for the journal in Indonesian, and using keywords "Knowledge", "Attitude", and "Pressure ulcer" for the journal in English. **Results:** The results show that nurses' knowledge and positive attitudes toward pressure ulcer prevention remain low. **Conclusion:** Conducting training, attending various kinds of seminars, adding facilities of pressure relief, inserting pressure ulcer in the nursing curriculum, and compiling an instruction book of pressure ulcer prevention are recommended to be done in order to enhance nurses' knowledge and positive attitudes in preventing pressure ulcer.

**Keywords:** Pressure ulcer, Knowledge, Attitudes.

## 1. INTRODUCTION

Pressure ulcer is one of important complication and frequently happens to inpatients. The appearance of pressure ulcer in patients has implications on high cost of treatment, duration of hospitalized becomes long, increase of infection risk, and may leads to a serious consequence which can give impact on patients' health [1]. Pressure ulcer is a local injury in skin tissue and/or tissue below it; this condition can happen as the result of bony prominence, and prolonged pressured condition (including the pressure which is related to friction). Several factors contribute in the appearance of pressure ulcer, e.g. mobility impairment [2].

The impact of pressure ulcer on patients' life quality is significant. Pressure ulcer can influence the dimension of physical, psychologist, emotional,

spiritual, social, and financial life of a patient [3]. Pressure ulcer can be followed by heavy pain, and every year around 60.000 patients die as a direct result of a pressure ulcer [4]. Financially, pressure ulcer also can be a burden to the patient. In the United States of America (USA), pressure ulcer cost \$9,1 billion to \$ 11,6 billion per year. The cost of treating a patient's pressure ulcer might range from \$20.900 to \$151.700. Medicare estimates in 2007 that every pressure ulcer adds the cost of \$43.180 for hospitalization cost [4].

In Europe, overall prevalence rate of pressure ulcer was 13,7%, and close to 35% of pressure ulcer cases which categorized as 1st category; and sacrum is the common location [5]. Research conducted by Bereded et al. (2018) also found a high prevalence of pressure ulcer which was 53 patients are detected underwent

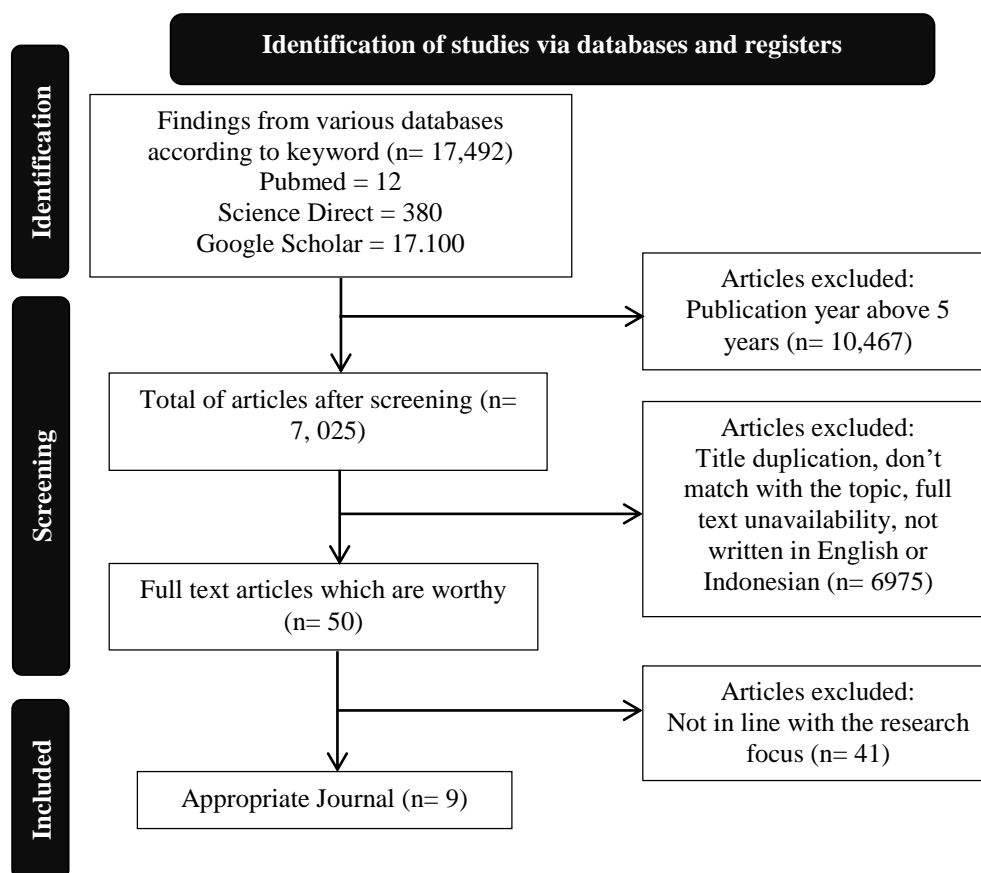
pressure ulcer, with the prevalence rate of 14,9%. In the research conducted in four hospitals in Indonesia, prevalence of pressure ulcer hit the number of 40%, which was the highest percentage among big countries of ASEAN [7]. In 2016, it was found that 91 out of 1132 respondent underwent pressure ulcer during hospitalization period [8].

Nurses play an essential role in preventing pressure ulcer in order to give nursing care to the patient. Nursing procedures which can be done, namely wound dressing pad application, massage and repositioning, and health promotion [9]. The prevention of pressure ulcer can be done as early as possible since the day of patients are identified that they have the risk of undergo the pressure ulcer. According to Malinga (2016), nurses' knowledge and attitudes towards the prevention of pressure ulcers are still poor. Thus, this study was conducted to give more in-depth information regarding the relationship between nurses' knowledge and attitudes in preventing pressure ulcer to be happened. The goal of this research was to find an answer to the research question which is how are the nurses' knowledge and attitudes in preventing the appearance of pressure ulcer.

Method employed in this study was literature review with comprehensive strategy by involving several references from various journals and articles. A literature review is a synoptic overview as well as a summary of what is known and unknown about the scientific work's topic. Despite this research didn't require intensive finding process such as systematic review, literature review requires smart and in-depth approach, thus it requires times, it is repeated, and it has to be continued during the research process [11]. The literature finding was done by the help of Google Scholar, ScienceDirect, dan Pubmed by using keywords "Pengetahuan", "Sikap", and "Luka tekan" for the journal in Indonesian, and using keywords "Knowledge", "Attitude", and "Pressure ulcer" for the journal in English. Inclusive criteria used in this study were articles which were published during the year of 2016-2021, considering the data will more update and accurate, written in Indonesian and English, focused on nurses' knowledge and attitudes towards prevention of pressure ulcer. The exclusion criteria in this study were research report in the form of thesis monograph and systematic review.

## 2. METHOD

Figure 1. Prism of literature selection flow



### 3. FINDING

9 data passed PRISMA diagram selection and they are divided into the researcher name and year of the article was published, the title of the article, the number of samples used, the method used, and the article results.

Table 1. Data Extraction Finding

No	Researcher and Year	Title	Total of Sample	Method	Finding
1.	Sengul & Karadag, 2020	Determination of nurses' level of knowledge on the prevention of pressure ulcers: The case of Turkey	900 nurses	<i>Descriptive cross-sectional</i>	Generally, nurses' knowledge level in preventing pressure ulcer is very low
2.	Habiballah, 2018	Attitudes of intensive care nurses towards pressure ulcer prevention	112 nurses	<i>Descriptive cross-sectional</i>	Nurses have a good attitude toward Preventing pressure ulcers.
3.	De Meyer et al., 2019	Knowledge of nurses and nursing assistants about pressure ulcer prevention: A survey in 16 Belgian hospitals using the PUKAT 2.0 tool	474 nurses and nurse assistants	<i>Multicenter cross-sectional</i>	Knowledge of pressure ulcer prevention among nurses and nursing assistants is still not optimal.
4.	Halász et al., 2021	Nurses' Knowledge and Attitudes towards Prevention of Pressure Ulcers.	225 nurses	<i>Cross-sectional exploration quantitative</i>	The lack of knowledge and attitudes among nurses about pressure ulcer prevention.
5.	Khojastehfar et al., 2020	Factors related to knowledge, attitude, and practice of nurses in intensive care unit in the area of pressure ulcer prevention: A multicenter study	328 nurses	Cross-sectional	The participating nurses' knowledge has not been in the expected level. Moreover, most of the nurses have an inappropriate and unsatisfying attitude and regarding pressure ulcer prevention.
6.	Etafa et al., 2018	Nurses' attitude and perceived barriers to pressure ulcer prevention	222 nurses	<i>Multicenter cross-sectional institutional-based with quantitative method</i>	Nurses in Addis Ababa have a poor attitude toward the prevention of pressure ulcers. In Ethiopia's Addis Ababa general hospital, there are various barriers to executing the pressure ulcer prevention regimen.
7.	Ebi et al., 2019	Nurses' knowledge to pressure ulcer prevention in public hospitals in Wollega: a cross-sectional study design	212 nurses	Multicenter descriptive cross-sectional with quantitative method	The majority of nurses lack of sufficient knowledge to avoid pressure ulcers.
8.	Yilmazer et al., 2019	Knowledge and Attitudes Towards Prevention of Pressure Ulcer: Intensive Care Units Sample in Turkey	81 nurses	<i>Cross-sectional</i>	Nurses' knowledge on how to prevent pressure ulcers at the intensive care unit is still insufficient. No more than a quarter nurses who show a positive approach toward the prevention of pressure ulcers.

9.	Saleh et al., 2019	Nurses' knowledge and practice of pressure ulcer prevention and treatment: An observational study	377 nurses	Cross-sectional	Nurses have inadequate knowledge on how to prevent pressure ulcers and also insufficient implementation of pressure ulcer care.
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## 4. DISCUSSION

### 4.1. Insufficient Knowledge of Nurses regarding Pressure Ulcer Prevention

Nurses' knowledge regarding minimizing pressure ulcers can be influenced by several factors, namely insufficient attention during studying nursing, not participate in the training, and rejoining the training [16]. Similarly, Sengul & Karadag (2020) stated that not following the development of pressure ulcer prevention, not participating in the training, and not using the protocol of nursing can lead to a lack of knowledge among nurses on how to prevent pressure ulcers.

From the data, the majority of nurses lack understanding about how to prevent pressure ulcers, namely: risk assessment, skin assessment and care, activity management, nutrition management, moisture management/incontinence, surface management support, training and registration show unsatisfying results [19]. On the other hand, nurses who read articles and follow the training show more significant result in pressure ulcer prevention [18].

In the unit with more than 50 beds shows poor pressure ulcer care [20]. The workload, the occupancy rate, resources availability, and the ratio between nurse-patient are the important indicators for planning an effective pressure ulcer care [20]. The small number of pressure relief and staff or heavy workload and also inadequate training are the obstacles which are the most frequently expressed by nurses in doing pressure ulcer prevention [18].

The low level of nurses' knowledge regarding pressure ulcer prevention can decrease patients' life quality and increase the risk of patient undergo pressure ulcer [12]. In order to prevent the unexpected cases, nurses' knowledge on how to avoid getting a pressure ulcer needs to be enhanced. There are several methods that can be done in order to enhance nurses' knowledge, namely providing access to resources for pressure ulcer prevention, in-service training, or regular training, inserting and prioritize pressure ulcer into nursing curriculum, and compiling a guideline book of pressure ulcer prevention [18]. Moreover, the study and training program have to be designed in line with the supporting protocols and guidelines [21]. Furthermore, giving motivation to nurses to follow various kinds of seminar, congress, program with certificate also can be done [12].

### 4.2. Inappropriate and Unsatisfying Nurses' Attitudes toward Pressure Ulcer Prevention

The more positive nurses' attitudes, the better pressure ulcer prevention will be done by the nurses [22]. Overall, according to all of the resources, it was found that nurses' attitudes toward pressure ulcer prevention are unsatisfying. Khojastehfar et al. (2020) in their research stated that 68,5% of nurses have inappropriate and unsatisfying attitudes in preventing pressure ulcer. Yilmazer et al. (2019) also stated similar opinion; no more than a quarter of nurses have a good attitude in preventing pressure ulcer. Nurses' attitude toward pressure ulcer prevention has a strong correlation with their knowledge of pressure ulcer. Someone's attitude tends to favor pressure ulcer prevention if the person knows the bad impact of pressure ulcer or the benefit of pressure ulcer prevention [23].

There are several work conditions which become the obstacle to nurses in implementing pressure ulcer prevention work program. Several work conditions which have been identified as the obstacle, namely: a severe workload, insufficient employees, insufficient resources, and poor training in the prevention of pressure ulcers [17]. Moreover, a small number of nurses can increase the workload, therefore compared to the other nursing procedures pressure ulcer prevention can be a procedure which is not prioritized by nurses. Furthermore, several methods of pressure ulcer prevention, e.g. reposition, it is difficult to be done without help [24]. In fact, nurses also rely on suggestion and support from the other professional medical workers regarding how to maintain the patients' skin integrity whom they manage [25].

## 5. CONCLUSION

Patient who undergoes treatment in hospital has high risk of pressure ulcer. The prevention of pressure ulcer should be done as early as possible, and the nurse plays a vital role in it. Nurses' knowledge and attitudes in preventing the pressure ulcer is still low.

To enhance nurses' knowledge and good attitudes toward pressure ulcer prevention conducting training, joining various kinds of seminar, adding facilities of pressure relief, inserting pressure ulcer in the nursing curriculum, and compiling a guideline book of pressure ulcer prevention can be done.

## AUTHORS' CONTRIBUTIONS

All authors conceived and designed the study. GAPKD analysed the data and wrote the manuscript. All author contributed to manuscript revisions. All of the authors have confirmed and agreed to be issued the final draft of the manuscript.

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## REFERENCES

- [1] E. Zarei, E. Madarshahian, A. Nikkhah, and S. Khodakarim, "Incidence of pressure ulcers in intensive care units and direct costs of treatment: Evidence from Iran," *J. Tissue Viability*, vol. 28, no. 2, pp. 70–74, 2019, doi: 10.1016/j.jtv.2019.02.001.
- [2] N. P. U. A. P. (NPUAP), *Prevention and treatment of pressure ulcers: Clinical practice guideline.*, vol. www.npuap. 2014.
- [3] G. Repić and S. Ivanović, "Pressure Ulcers and Their Impact on Quality of Life," *Acta medica Median.*, pp. 75–80, 2014, doi: 10.5633/amm.2014.0412.
- [4] D. Berlowitz *et al.*, "Preventing Pressure Ulcers in Hospitals," *Agency Healthc. Res. Qual.*, pp. 1–154, 2014.
- [5] Z. Moore, P. Avsar, L. Conaty, D. H. Moore, D. Patton, and T. O'Connor, "The prevalence of pressure ulcers in Europe, what does the European data tell us: A systematic review," *J. Wound Care*, vol. 28, no. 11, pp. 710–719, 2019, doi: 10.12968/jowc.2019.28.11.710.
- [6] D. T. Bereded, M. H. Salih, and A. E. Abebe, "Prevalence and risk factors of pressure ulcer in hospitalized adult patients; A single center study from Ethiopia," *BMC Res. Notes*, vol. 11, no. 1, pp. 1–6, 2018, doi: 10.1186/s13104-018-3948-7.
- [7] P. Primalia and D. Hudiyawati, "Pencegahan dan Perawatan Luka Tekan pada Pasien Stroke di Ruang ICU [Prevention and Treatment of Pressure Ulcers in Stroke Patients at ICU]," *Ber. Ilmu Keperawatan*, vol. 13, no. 2, pp. 110–116, 2020.
- [8] Y. Amir, C. Lohrmann, R. J. G. Halfens, and J. M. G. A. Schols, "Pressure ulcers in four Indonesian hospitals: prevalence, patient characteristics, ulcer characteristics, prevention and treatment," *Int. Wound J.*, vol. 14, no. 1, pp. 184–193, 2017, doi: 10.1111/iwj.12580.
- [9] W. Widodo, E. M. Rosa, and N. Kurniasari, "Pengaruh Tindakan Keperawatan Reduksi Luka Tekan Terhadap Penurunan Risiko Luka Tekan [The Effect of Pressure Ulcers Reduction Nursing Actions on Reducing Pressure Ulcers Risk]," *J. Ilm. Kesehat. Keperawatan*, vol. 13, no. 2, 2017, doi: 10.26753/jikk.v13i2.214.
- [10] S. Malinga, "Nurses Knowledge, Attitudes, And Practices Of Pressure Ulcer Prevention In The Pietermaritzburg Hospital Complex in 2016," vol. 66, no. December, pp. 37–39, 2016.
- [11] L. A. Maggio, J. L. Sewell, and A. R. Artino, "The Literature Review: A Foundation for High-Quality Medical Education Research," *J. Grad. Med. Educ.*, vol. 8, no. 3, pp. 297–303, 2016, doi: 10.4300/JGME-D-16-00175.1.
- [12] T. Sengul and A. Karadag, "Determination of nurses' level of knowledge on the prevention of pressure ulcers: The case of Turkey," *J. Tissue Viability*, vol. 29, no. 4, pp. 337–341, 2020, doi: 10.1016/j.jtv.2020.06.005.
- [13] L. Habiballah, "Attitudes of intensive care nurses towards pressure ulcer prevention," *Clin. Nurs. Stud.*, vol. 6, no. 3, p. 1, 2018, doi: 10.5430/cns.v6n3p1.
- [14] D. De Meyer, S. Verhaeghe, A. Van Hecke, and D. Beeckman, "Knowledge of nurses and nursing assistants about pressure ulcer prevention: A survey in 16 Belgian hospitals using the PUKAT 2.0 tool," *J. Tissue Viability*, vol. 28, no. 2, pp. 59–69, 2019, doi: 10.1016/j.jtv.2019.03.002.
- [15] B. G. Halász, A. Bérešová, L. Tkáčová, D. Magurová, and L. Lizáková, "Nurses' knowledge and attitudes towards prevention of pressure ulcers," *Int. J. Environ. Res. Public Health*, vol. 18, no. 4, pp. 1–9, 2021, doi: 10.3390/ijerph18041705.
- [16] S. Khojastehfar, T. Najafi Ghezljeh, and S. Haghani, "Factors related to knowledge, attitude, and practice of nurses in intensive care unit in the area of pressure ulcer prevention: A multicenter study," *J. Tissue Viability*, vol. 29, no. 2, pp. 76–81, 2020, doi: 10.1016/j.jtv.2020.02.002.
- [17] W. Etafa, Z. Argaw, E. Gemechu, and B. Melese, "Nurses' attitude and perceived barriers to pressure ulcer prevention," *BMC Nurs.*, vol. 17, no. 1, pp. 18–25, 2018, doi: 10.1186/s12912-018-0282-2.

- [18] W. E. Ebi, G. F. Hirko, and D. A. Mijena, "Nurses' knowledge to pressure ulcer prevention in public hospitals in Wollega: A cross-sectional study design," *BMC Nurs.*, vol. 18, no. 1, pp. 1–12, 2019, doi: 10.1186/s12912-019-0346-y.
- [19] T. Yilmazer, H. Tüzer, and A. Erciyas, "Knowledge and Attitudes Towards Prevention of Pressure Ulcer: Intensive Care Units Sample in Turkey," *Turkiye Klin. J. Nurs. Sci.*, vol. 11, no. 2, pp. 140–147, 2019, doi: 10.5336/nurses.2018-63157.
- [20] M. Y. N. Saleh, P. Papanikolaou, O. S. Nassar, A. Shahin, and D. Anthony, "Nurses' knowledge and practice of pressure ulcer prevention and treatment: An observational study," *J. Tissue Viability*, vol. 28, no. 4, pp. 210–217, 2019, doi: 10.1016/j.jtv.2019.10.005.
- [21] C. Kim, S. Kim, J. Yang, and M. Choi, "Nurses' perceived barriers and educational needs for early mobilisation of critical ill patients," *Aust. Crit. Care*, vol. 32, no. 6, pp. 451–457, 2019, doi: 10.1016/j.aucc.2018.11.065.
- [22] M. Agustini, D. Yarlitasari, and N. Nurhikmah, "Analysis Factors That Influence Associate Nurses Toward Decubitus Prevention On Bed Rest Patient In Intensive Care Unit At Ulin Banjarmasin Hospital," *Indones. J. Nurs. Pract.*, vol. 2, no. 2, pp. 96–105, 2018, doi: 10.18196/ijnp.2285.
- [23] R. Mirwanti, H. R. Agustina, and A. Nuraeni, "Hambatan Yang Dirasakan Oleh Perawat Dalam Melaksanakan Pencegahan Luka Tekan Di Ruang Perawatan Intensif [Obstacles Perceived by Nurses in Implementing Pressure Ulcers Prevention in the Intensive Care Room]," *Medisains*, vol. XV, no. 1, pp. 1–9, 2017.
- [24] A. Tubaishat, M. Aljezawi, and M. Al Qadire, "Nurses' attitudes and perceived barriers to pressure ulcer prevention in Jordan," *J. Wound Care*, vol. 22, no. 9, pp. 490–497, 2013, doi: 10.12968/jowc.2013.22.9.490.
- [25] R. Mirwanti, A. Nuraeni, and A. Prawesti, "Perceived Facilitators to Preventing Pressure Ulcer among Intensive Care Unit Nurses," *KnE Life Sci.*, vol. 2019, pp. 568–576, 2019, doi: 10.18502/cls.v4i13.5307.