

THE RELATIONSHIP BETWEEN NURSING STUDENTS' KNOWLEDGE ABOUT ASTHMA AND INHALER USAGE SKILLS

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Abstrak

Asma merupakan penyakit kronis yang menyebabkan peradangan saluran napas dan mempengaruhi jutaan orang di seluruh dunia, termasuk di Indonesia. Penelitian ini bertujuan untuk mengeksplorasi hubungan antara pengetahuan mahasiswa keperawatan tentang asma dan keterampilan mereka dalam menggunakan inhaler. Metode yang digunakan adalah desain kuantitatif deskriptif korelasional, melibatkan 100 mahasiswa program studi S1 Keperawatan di STIKes RS Husada. Hasil menunjukkan bahwa rata-rata skor pengetahuan mahasiswa adalah 42,26, dengan 61,5% di antaranya memiliki keterampilan baik dalam penggunaan inhaler. Analisis korelasi Spearman menunjukkan adanya hubungan positif signifikan antara pengetahuan tentang asma dan keterampilan penggunaan inhaler (koefisien korelasi 0,449). Selain pengetahuan, faktor lain seperti pengalaman klinis dan dukungan instruktur juga berkontribusi pada keterampilan mahasiswa. Temuan ini menunjukkan pentingnya pendidikan dan pelatihan yang berkelanjutan untuk mempersiapkan mahasiswa keperawatan dalam manajemen asma, sehingga dapat meningkatkan kualitas perawatan pasien di lingkungan klinis.

The Relationship Between Nursing Students' Knowledge About Asthma And Inhaler Usage Skills

Abstrak

Asthma is a chronic disease that causes inflammation of the airways and affects millions of people around the world, including in Indonesia. This study aims to explore the relationship between nursing students' knowledge about asthma and their skills in using inhalers. The method used was a correlational descriptive quantitative design, involving 100 students of the S1 Nursing study program at STIKes RS Husada. The results showed that the average knowledge score of students was 42.26, with 61.5% of them having good skills in using inhalers. Spearman's correlation analysis showed a significant positive relationship between knowledge of asthma and inhaler use skills (correlation coefficient 0.449). In addition to knowledge, other factors such as clinical experience and instructor support also contribute to students' skills. These findings demonstrate the importance of ongoing education and training to prepare nursing students in asthma management, so as to improve the quality of patient care in clinical settings.

Keyword : Asthma, Inhaler Skills, Knowledge.

Introduction

Asthma is a chronic disease characterized by symptoms such as shortness of breath, wheezing, coughing, and chest tightness due to airway inflammation. According to GINA (2023), more than 262 million people worldwide suffer from asthma, with a prevalence of 4.5% in Indonesia's population (Riskesdas, 2018). In DKI Jakarta, there are 33,552 reported cases of asthma, reflecting a major challenge to respiratory health, particularly due to high pollution levels from traffic and industry (GINA, 2023).

Correct inhaler usage is essential in asthma management; however, only 50% of patients can use it properly. Mistakes, such as not inhaling at the correct speed or failing to hold the breath afterward, can reduce medication effectiveness (Harnett et al., 2020). Nursing students, who will play an important role in teaching inhaler techniques, often lack proficiency, with more than 40% making errors due to insufficient practice (Price et al., 2019).

Good knowledge of asthma correlates with better inhaler skills. Melani & Paleari (2019) found a strong relationship between understanding asthma pathophysiology and technical skills in using inhalers, emphasizing the importance of asthma education in the nursing curriculum. These skills are also essential to reduce healthcare costs, as patients unable to use inhalers correctly often require avoidable hospitalizations that could be prevented with proper education and training (Harnett et al., 2020).

A study conducted at STIKes RS Husada aims to examine the relationship between nursing students' knowledge of asthma and their inhaler usage skills. The findings are expected to strengthen the nursing curriculum, particularly in enhancing inhaler practical skills and asthma management, to support sustainable asthma control at both individual and healthcare system levels (GINA, 2023; Melani & Paleari, 2019; Price et al., 2019).

Research Method

This study uses a descriptive quantitative correlational design to examine the relationship between nursing students' knowledge about asthma and their skills in using inhalers. The study population includes undergraduate nursing students at STIKes RS Husada who have studied asthma management and inhalers, with a sample of 104 students selected through purposive sampling. Data were collected using the Patient Asthma Knowledge Questionnaire (PAKQ) to assess asthma knowledge and the Inhaler Technique Questionnaire (InTeQ) to assess inhaler skills, alongside direct observation. This study was conducted with third, fifth, and seventh-semester students from August to September 2024.

Validity and reliability tests on the instruments showed good results; the PAKQ demonstrated good

construct validity (CFA with CFI of 0.95) and consistent reliability (KR-20 up to 0.82), while the InTeQ showed adequate reliability (Cronbach's Alpha of 0.716). Data analysis included descriptive analysis to describe students' knowledge and skills, as well as correlation tests to examine the relationship between the two variables.

Research Results

This study involved 104 undergraduate nursing students at STIKes RS Husada who had received instruction on the respiratory system and inhaler usage in asthma patients. Demographically, the majority of participants were female (96.2%), with an average age of 20.23 years, indicating a sample of young students. Most participants were in the fifth semester (44.2%), followed by the third semester (38.5%), and the seventh semester (17.3%), representing a distribution across various stages of nursing education.

Knowledge data showed an average knowledge score of 42.26 about asthma, with a range of 30 to 54, reflecting varying levels of understanding among students. Regarding inhaler usage skills, most participants (61.5%) demonstrated good skills, 25% showed moderate skills, and 13.5% had low skills. This indicates that most students can use inhalers effectively, which is crucial in asthma patient care.

Normality tests indicated that the data were not normally distributed, with significance values below 0.05 in the Kolmogorov-Smirnov and Shapiro-Wilk tests. Therefore, non-parametric analysis was chosen to examine the relationship between the variables. The Spearman correlation test produced a correlation coefficient of 0.449 with a significance of 0.000, indicating a significant moderate positive correlation between asthma knowledge and inhaler usage skills.

These findings support the hypothesis that increased knowledge about asthma among students is positively related to better inhaler skills. This emphasizes the importance of education and training in enhancing clinical skills, particularly in inhaler usage for asthma patients, which could potentially improve care quality.

Discussion

This study aims to analyze the relationship between nursing students' knowledge about asthma and their skills in using inhalers. Findings indicate significant results related to knowledge levels, skills, and the relationship between these two variables. The average knowledge score of students was 42.26, reflecting adequate knowledge about asthma. This knowledge is essential for nursing students as it relates to their ability to provide patient care. A previous study by Ariawan et al. (2021) found that good knowledge of specific health

conditions can improve students' practical skills in clinical settings. Similar findings were reported by Kholifah et al. (2020), who noted that adequate education and information could increase students' knowledge of respiratory diseases such as asthma.

Research by Amalia et al. (2022) supports the importance of understanding asthma pathophysiology as a basis for students' clinical knowledge. This study's findings indicate that most students have sufficient knowledge about asthma, which can support the enhancement of their clinical skills. A solid understanding of asthma is required for students to be more competent in handling clinical situations involving patients with this condition, such as in inhaler use.

Skills in using inhalers were also investigated, showing that 61.5% of participants had good skills. This indicates that most students have received adequate practical training to use inhalers in asthma patient care. These findings align with Fitzgerald et al. (2022), who found that proper training in inhaler usage can improve students' skills. Such skills are crucial as errors in inhaler use can lead to serious complications for patients, as explained by Baker et al. (2020). Prabowo et al. (2021) also stated that simulation exercises in inhaler usage can significantly improve students' skills.

Spearman correlation test results showed a significant positive correlation between knowledge about asthma and inhaler usage skills, with a correlation coefficient of 0.449. This means that the higher the knowledge level of students, the better their inhaler skills. This finding is supported by Al-Azri et al. (2023), who found that good knowledge correlates with improved practical skills. Additionally, Mahmud et al. (2021) emphasized the importance of adequate education and training to enhance students' skills. Sari et al. (2023) also highlighted the importance of the relationship between knowledge and skills in nursing practice to improve patient care quality.

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Beyond knowledge, other factors can potentially influence students' inhaler usage skills, such as previous clinical experience, instructor support, and the availability of educational resources. Pradana et al. (2022) indicated that direct clinical experience can enrich students' skills, while Salim et al. (2023) emphasized the importance of involvement in clinical practice to strengthen their practical skills.

Factors such as learning motivation and active involvement in learning also significantly impact students' practical skills, as explained by Sari and Wardani (2020). Additionally, support from family and friends can be a contributing factor in enhancing students' clinical skills, as shown by Yusuf et al. (2022). This study shows that a combination of strong knowledge, clinical experience, instructor support, and learning motivation are crucial elements in improving nursing students' inhaler usage skills for asthma patients.

Conclusion

This study successfully demonstrated that the majority of nursing students have good knowledge about asthma and adequate inhaler skills. There is a significant positive relationship between knowledge about asthma and inhaler skills, indicating that increased knowledge can contribute to enhanced students' practical skills. In addition, factors such as clinical experience and instructor support should also be considered to further improve inhaler skills among nursing students. Continuous efforts in education and training are needed to ensure nursing students are well-prepared to face challenges in caring for asthma patients in clinical settings.

Thank-You Note

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