



Review Article

Assessment of Nurses' Knowledge, Attitude and Practice Regarding Physical Restraint: A Scoping Review

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ABSTRACT

The use of physical restraints (PR) in healthcare settings, especially in psychiatric units, is a controversial topic. The attitude, knowledge, and practices of nurses towards PR can influence its application, which raises concerns about the balance between patient safety and individual rights. With mental disorders being a leading cause of disability globally, understanding the complexities surrounding PR use becomes paramount. A comprehensive literature review was conducted using multiple databases, including PubMed, Medline, CINAHL, PsycINFO, ProQuest, The Cochrane Library, the Saudi Digital Library, and Google Scholar. The search spanned literature published up to December 2022, focusing on studies that explored the relationship between nurses' knowledge, attitudes, and practices regarding PR in psychiatric settings. Inclusion and exclusion criteria were applied to filter out relevant studies. From 220 records initially retrieved, 12 articles were identified for the final review. The reviewed studies highlighted a moderate knowledge and attitude among nurses concerning PR. Many nurses were found to be uncertain about the reasons for PR application and its alternatives. Educational interventions were emphasized in several studies as beneficial in improving nurses' knowledge, attitudes, and practices. However, inconsistencies were observed regarding the impact of these interventions on nurses' attitudes. Experience, higher education, and continuous training sessions were found to be correlated with better knowledge and more favourable attitudes towards PR. This review emphasizes the critical need for consistent training and education for nurses regarding PR, given the profound implications for patient care and safety. While educational interventions show promise in enhancing knowledge and practice, their impact on attitudes remains contested. Future research should consider the gaps identified in this review, including the exploration of alternatives to PR, larger sample sizes and longitudinal studies to understand the long-term effects of interventions.

Keywords: Physical restraints, Psychiatric settings, Nurses' attitudes, Educational interventions, Patient safety

INTRODUCTION

Physical restraint (PR) is any procedure that obstructs patients' freedom of movement, physical activity or daily access to their bodies.^[1] It could be waist belts, hand mitts, vest restraints, side rails, Geri chairs or lap trays.

In mental healthcare, nurses use PR when a patient poses a risk or is exhibiting uncontrollable, disruptive behaviour.^[2] PR is a procedure nurses implement to restrict violent patient movement in several healthcare setups.^[3] It is often done by an adjacent manual method or a mechanical device that is attached to the patient's body. It is often associated with human rights violations and an ethical dilemma.^[4]

The primary indication of restraints is maintaining and preserving the patient's safety when aggressive. However, applying and using PR for psychiatric patients is a complex decision, and it depends on the situation at hand.^[2]

PR is contraindicated for psychiatric patients presenting with cyanosis, aspiration, oedema, fractures, pressure ulcers, breathing problems or paralysis. Therefore, educating nursing staff would improve their knowledge, skills and attitude regarding PR.^[5]

Psychological side effects can affect both patients and nurses. Some patients may feel safer when restrained, while others feel embarrassed, confined to one environment, anxious and socially isolated, agitated and aggressive and maybe depressed with suicidal thoughts.^[6] The nursing staff may feel guilty about restraining a violent patient as they are human. Patients' adherence to treatment directives influences the PR experience.^[6]

Research indicates that PR instructions are obtained through the physician's oral consent.^[4] According to hospital policies, nurses are responsible for the initiation

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of PR as per physician orders and the care of the restrained patients. The nurse's knowledge, experience and attitude implicate decision-making.^[2]

Hence, nursing staff can play a central role in managing the PR used in hospitals. Therefore, it is necessary to assess nursing staff to identify their knowledge, skills and attitudes regarding PR.^[7]

PURPOSE OF REVIEW

The purpose of this review is to explore and evaluate how nurses' knowledge and attitudes toward PR influence their practice in psychiatric settings. This review aims to understand the depth of nurses' awareness, perception and application of PR, particularly in psychiatric units where it is frequently used. The study seeks to identify existing knowledge gaps, variations in practices and the impact of educational interventions on nurses' approach to PR. By comprehensively examining existing literature, the study aims to shed light on the complexities surrounding the use of PR in psychiatric care, considering its ethical implications and effects on patient safety and rights.

Primary objectives of review

- To determine the depth of nurses' awareness, perception and application of PR, particularly in psychiatric units where it is frequently used.
- To identify existing knowledge gaps, variations in practices and the impact of educational interventions on nurses' approach to PR.

Secondary objectives of review

- To shed light on the complexities surrounding the use of PR in psychiatric care, considering its ethical implications and effects on patient safety and rights.

METHODOLOGY

Identifying the research question

PICOT is derived from elements of clinical research questions, such as population, intervention, comparison, outcome and time (not always included). The review is guided by the following PICOT question: 'How do psychiatric nurses' knowledge and attitude regarding physical restraint impact their practice?' and by conducting a search process in the databases [Table 1].

Search Strategies

A literature review was done to explore whether PR knowledge and attitude of nurses impact their practice using different databases, which included PubMed, Medline, CINAHL, PsycINFO, ProQuest, the Cochrane Library and the Saudi Digital Library database, with an additional search being done using Google Scholar [Table 2]. The search limits applied were the publication year up to December 2022.

English language and Boolean operators were used to look for linked studies.

The keywords used in the searches were 'psychiatric nurses', 'knowledge', 'attitude', 'practice' and 'physical restraints'. These searches produced 220 records from different databases and 168 articles remained on removal of duplicate articles. Those 168 articles were screened by title and their relation to this current study, identifying 48 potentially related articles. Finally, the result from both abstract and title screening resulted in 30 articles that met the aim of the study. The screened 30 articles were reviewed individually using inclusion and exclusion criteria and the final number of articles that remained in this study was 12 after reviewing if they met the study's goals [Figure 1] and in the light of inclusion and exclusion criteria.

Inclusion criteria

The inclusion criteria used in this literature review are as follows:

- The main purpose of the study must be concerned with nurses' knowledge, attitude and practice.
- The samples must include nurses working in psychiatric settings.
- The studies must include mechanical and PRs.
- Studies concerned with nurses' knowledge, attitude and practice.
- Study samples are nurses working in psychiatric settings as samples
- Studies utilising mechanical and PRs
- Articles published in the English language and available as full texts.
- Articles published from 2017 to 2022

Exclusion criteria

The following criteria were excluded from the study:

- Studies including chemical restraints.
- Editorials, case reports and letters.

Databases and other sources used

The databases used to search original research articles in this review are tabulated below:

Quality evaluation of the selected articles

The researcher extracted data to summarise and give insight into the aim of the study, the methodology and the study samples. The data extraction table identifies and supports key elements and the most important data from the selected articles for the literature review. It is important that study variables be part of the data extraction to answer the review question. The researcher meticulously gathered all the essential data for the current review, which included the review title, author's name, year of publication, country, study sample and objective findings. In addition, to ensure the rigour and reliability of the studies included, a systematic

The PRISMA flow diagram is given below:

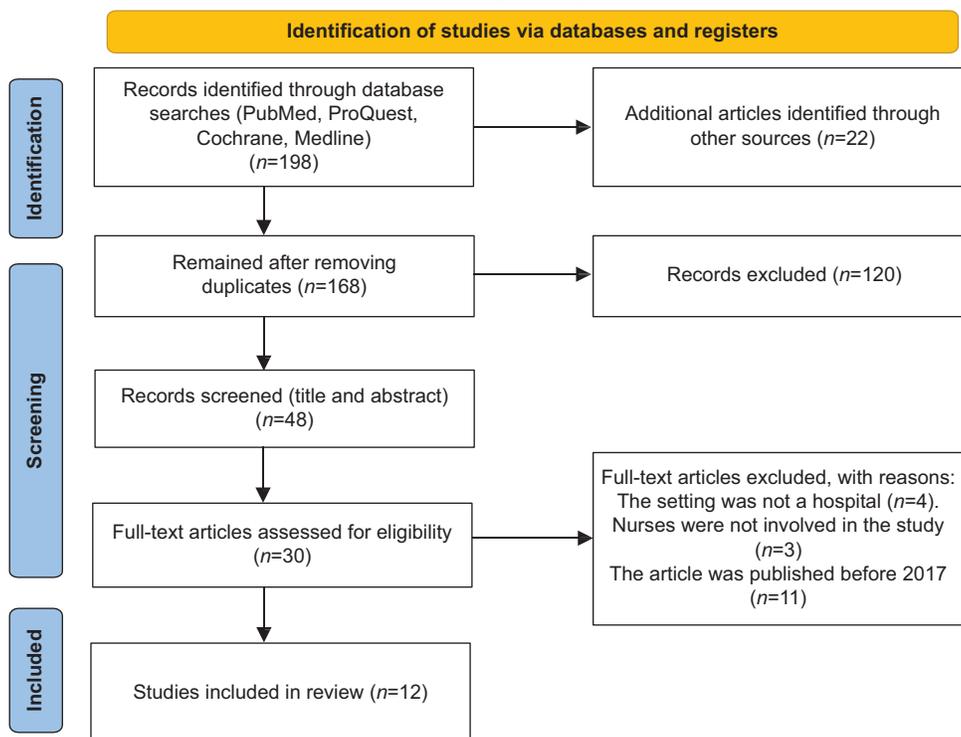


Figure 1: Flow diagram of the approach (Preferred Reporting Items for Systematic Reviews and Meta-Analyses Guidelines). *n*: Number.

quality assessment was conducted using a recognised rating method. For this purpose, the Hawker *et al.* (2002)^[8] rating scale was employed, which evaluates critical components of each study such as the abstract, introduction, methodology (including sampling, data analysis and ethical considerations), results and the implications of the findings. This comprehensive evaluation approach enabled a thorough appraisal of the quality and relevance of each study in the context of the review’s objectives. A total of 12 articles were used for data extraction, which included quantitative ($n = 10$) and qualitative ($n = 2$). The included studies were conducted in Saudi Arabia, Botswana, the USA, China, Ethiopia, Brazil, Hong Kong, Turkey, India and Malaysia.

SEARCH RESULTS

Description of selected studies

Twelve studies were selected in this review that focus on assessing nurses’ knowledge, attitude and practice. The researcher independently examined each study chosen in the review by comparing the aim and objective of each study, measures of analysis, study design, method of data collection and primary findings. Based on the design, the studies are divided into different categories: cross-sectional studies ($n = 7$), randomised controlled studies ($n = 1$), qualitative ($n = 2$) and pre-post survey ($n = 2$).

The total number of reviewed articles was 12; the results yielded from the reviewed literature were regarding PR, nurses’ knowledge, attitude and their impact on nurses’ practice.

DISCUSSION

Mental problems are among the leading causes of disability globally, accounting for one-third of disability cases.^[9] PR in hospitals is used to keep disturbed patients from hurting themselves and others. However, nursing staff may feel guilty about restraining a violent patient as they are human.^[4] Notably, patients with mental health problems pose significant risks to themselves and those around them, and unlike in other care environments, patient risk within inpatient mental healthcare settings affects the patient himself, other patients and nursing staff, thus widening the scope of risk.^[10] Patients’ adherence to treatment directives influences the PR experience.^[10]

Nurses’ knowledge, attitude and practice regarding PR

Eskandari *et al.* (2017)^[7] examined intentions, practice, knowledge and attitudes regarding PR. The nurses showed moderate knowledge and attitude, limited use of the alternative method and a strong intention of using PR. It was added that a supportive working culture that understands nurses’ decisions and the circumstances of applying PR should be created.

Table 1: PICOTS format to formulate the research question (Source: Authors).

PICOT	Content	PICOT Question
P (Population)	Nurses working in psychiatric hospital	How do nurses' knowledge and attitude regarding physical restraint impact their practice?
I (Intervention)	N/A	
C (Comparison)	N/A	
O (Outcome)	Knowledge, attitude and practice	
T (Time)	The literature review includes studies from 2017 to 2022.	
PICOT: Population, Intervention, Comparison, Outcome, and Time, N/A: Not applicable.		

Table 2: Searched Items, Boolean, database used and articles in the literature review (Source: Authors).

Searched Items	Boolean	Database	Articles for Review
'Psychiatric nurses', 'knowledge', 'attitude', 'practice' and 'physical restraints'	'AND' and 'OR'	CINAHL	1
		PubMed	2
		ProQuest	1
		MEDLINE	1
		The Cochrane Library	1
		Google Scholar	2
		Wiley Library	4
Total			12
CINAHL: Cumulated Index to Nursing and Allied Health Literature, MEDLINE: Medical Literature Analysis and Retrieval System Online.			

Similarly, another study examined psychiatric nurses' attitudes, practices and knowledge regarding PR. The study showed nurses' moderate attitudes, knowledge and practice of PR, because most of them did not know the reason for using it and alternative approaches.^[4]

Hasan and Abulattif (2018)^[4] further showed that nursing staff plays a central role in the management of PR used in hospitals because they usually initiate the decision-making process in consultation with physicians regarding the need to remove PR. Therefore, training nursing staff to develop and improve their knowledge, skills and attitude regarding PR has become necessary. It could be improved through participation in training sessions, and it was demonstrated that educational intervention improved nurses' attitudes, practice and knowledge of the use of PR.^[2,4]

Studies revealed that PR is considered unpleasant, stressful, difficult, risky and challenging and it is associated with conflicts and dilemmas and can represent a protection strategy for staff and patients. Furthermore, PR effectiveness is highly dependent on nurses' knowledge, which could be improved through training sessions.^[2,5,9,11]

The nurses' knowledge, practices and attitudes regarding PR were determined using a questionnaire, which revealed that nurses had a good attitude with an average knowledge level. The study concluded that seniority, education level and higher age gave rise to higher restraint knowledge, and highly educated nurses tried to avoid restraint through the use of alternative approaches.^[1]

Correspondingly, Gandhi *et al.* (2018)^[12] stated that nurses had good knowledge, a favourable attitude and better practices regarding using PR. It was further added that experienced nurses had shown good practice and a more favourable attitude than less experienced nurses regarding PR. However, these findings cannot be generalised due to the small data size from a single setting, so it could be further explored on larger data sets with many other settings at different locations.^[12] It was suggested that recruiting more experienced nurses and holding frequent training sessions are very important for improving the quality of care for patients through proper PR use.^[1]

A survey by Lee *et al.* (2021)^[13] reported that nurses with master's degrees had more desirable attitudes and significantly higher knowledge levels than those with diplomas or bachelor's degrees. The study further showed nurses' satisfactory attitudes toward using PR, and the authors recommended future training sessions to enhance nurses' sensitive thinking and the following of ethics. Furthermore, a previous study described that nurses had less knowledge about PR before the training program, which was improved in the post-training sessions.^[9]

According to the study on the restraint chair carried out by Visaggio *et al.* (2018),^[14] which aimed to describe psychiatric nurses' experience of using the restraint chair in comparison to the traditional four-point restraints, the restraint chair appears to be a safer and more effective alternative to traditional four-point restraint. The main themes noted were as follows: humane, easier to use, less traumatic, comforting and enhanced therapeutic relationships. These themes highlight that the chair can be easily used by a small number of staff, can be moved easily to the patient's location and reduces the risk of injury compared to the four-point restraint. As a general recommendation, nursing staff should develop and improve their knowledge, attitude and practice regarding PR, which could be achieved through training sessions, higher education and experience.

The impact of educational interventions on nurses' knowledge, attitudes and practices

Educational interventions on nurses' knowledge, attitudes and practice regarding PR were conducted by Kavak *et al.* (2019) and Rentala *et al.* (2021),^[5,9] while Eskandari *et al.* (2018)^[2] added intention toward PR. These studies used several teaching methods, including group discussion, video demonstration, lectures, educational sessions and

demonstration of PR types. Further, the myths/facts about the use of PR were also focused on, in the educational intervention. These studies showed the importance of training programs in improving nurses' knowledge, attitudes and practice to minimise the use of PR methods.

Eskandari *et al.* (2018)^[2] showed a significant improvement in the mean knowledge of nurses regarding the use of PR, which was supported by the findings of Kavak *et al.* (2019)^[5] and more recently supported by Rentala *et al.* (2021).^[9] Rentala *et al.* have also shown that those training programs improved nurses' attitudes toward PR, and this supported a previously published study in 2019 on the educational intervention improvement of attitudes toward using PR.^[5]

In contrast, there was no significant difference concerning the nurses' attitudes toward PR in the two groups after the study.^[2] Moreover, psychiatric nurses have improved their knowledge after psychoeducation regarding PR and eliminated harmful practices and attitudes toward patients.^[2,5,9]

Collectively, these studies have shown similar findings about using training programs that comprehensively improve nurses' knowledge of PR.^[2,5,9] However, the opinions about the effect of those training sessions on nurses' attitudes toward PR were different. Two studies have supported the hypothesis about improving attitudes toward PR through training sessions.^[5,9] However, one study has shown no improvement in nurses' attitudes toward PR.^[2] Thus, the nurses who took educational training programs had better knowledge of PR, but the stance regarding the improvement in the attitude of the nurses is controversial.

A careful analysis of the available research on the topic of nurses' knowledge, attitudes and practices regarding PR use in healthcare settings reveals several notable gaps in the literature. Initially, a significant inconsistency is apparent in the tools used to measure knowledge, attitudes and practices across different studies. This variability hinders the ability to directly compare results and draw generalisable conclusions. Moreover, the focus of the current literature predominantly centres around PR use, with a lesser emphasis placed on understanding and exploring alternatives to PR. An area needs further investigation to promote less harmful strategies. Furthermore, several studies suffer from relatively small sample sizes, limiting the scope of their findings and the ability to generalise them to larger populations.

While a few studies have employed qualitative methods to explore the experiences and perceptions of nurses, the need for more extensive qualitative research remains. Such studies could provide a richer insight into nurses' experiences, shedding light on the complexities of their decision-making processes and the influencing factors.

The influence of demographic factors such as age, gender, years of experience and level of education on attitudes and practices toward PR use has been explored. However, other potentially influential factors, including cultural background

or socioeconomic elements, have not been thoroughly investigated.

Regarding training and education, some studies have emphasised its impact on PR use. However, comprehensive research that investigates the specific components of training programs that yield the most effective outcomes is lacking. This could be invaluable in shaping future training programs that aim to change PR practices.

Finally, the literature is deficient in longitudinal studies that monitor changes in nurses' attitudes and practices over time and how these shifts impact the prevalence and outcomes of PR use. These studies could provide valuable insights into the long-term effects of different interventions and inform future policies and guidelines.

In conclusion, addressing these identified gaps in future research could provide a more comprehensive understanding of the issues surrounding PR use in various healthcare settings, prompting the development of more effective interventions and policies.

Limitations

This review was limited to full-text, English, published studies accessible through the searched databases. The reviewed literature had a number of limitations. First, most of the reviewed studies did not reveal the long-term impacts of the PR educational interventions program on nurses' knowledge and attitudes, as they did not include a follow-up assessment. Further, the level of evidence varied across the included studies due to their differing research designs. Most of the data was collected from nurses using self-reported questionnaires prone to bias.

CONCLUSION

In this review, the search strategy used to retrieve pertinent studies to this research was explained in detail by the researcher. The findings of this review informed the researcher on the development of the methods to conduct the current research. This review concludes that nurses should develop and improve their knowledge, skills and attitudes regarding PR through continuous training sessions. In addition to the aforementioned conclusions, this review also underscores several critical implications for clinical practice, policy-making and future research. First, it highlights the need for healthcare institutions to integrate comprehensive and ongoing training programs focused on PR into their standard practices. Such programs should not only aim to improve nurses' knowledge and skills but also positively influence their attitudes towards the use of PR. Second, the findings suggest the necessity for policymakers to develop clear guidelines and protocols that address the use of PR in psychiatric settings, ensuring that they are grounded in the latest evidence-based practices. These policies should emphasise ethical considerations and patient safety while providing nurses with the necessary framework to make informed decisions regarding PR. Finally, the review identifies a gap in current research, particularly in the

exploration of alternative methods to PR and the long-term effects of educational interventions on nurses' practices. Future research should aim to fill these gaps, contributing to a more holistic and patient-centred approach to care in psychiatric settings. Overall, the implications of this review advocate for a multidisciplinary approach to improve the use of PR, ensuring that it is applied judiciously, ethically, and as a last resort, in line with the best practice guidelines.

Ethical approval

The Institutional Review Board approval is not required.

Declaration of patient consent

Patient's consent was not required as there are no patients in this study.

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Conflicts of interest

There are no conflicts of interest.

Use of artificial intelligence (AI)-assisted technology for manuscript preparation

The authors confirm that there was no use of artificial intelligence (AI)-assisted technology for assisting in the writing or editing of the manuscript and no images were manipulated using AI.

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