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NURSING-BASED URINARY INCONTINENCE MANAGEMENT STRATEGIES: LITERATURE REVIEW

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Abstract

Urinary incontinence is a common health problem among older adults, especially women, and can impact quality of life, self-confidence, and psychological well-being. One effective non-pharmacological approach to addressing this condition is Kegel exercises, pelvic floor muscle exercises aimed at improving urinary control. This study aims to examine the effectiveness of Kegel exercises in reducing urinary incontinence symptoms in older adults based on national and international research findings. The method used was a literature review. by searching articles from Google Scholar, PubMed, and Crossref databases published between 2018 and 2025. A total of ten relevant journals were analyzed using a descriptive-comparative approach. The results of the review showed that Kegel exercises performed routinely two to three times per week were proven to significantly reduce the frequency and severity of urinary incontinence symptoms. In addition, education and assistance from health workers, as well as family support, play a significant role in increasing adherence to the exercises in the elderly. The application of technology such as mobile applications has also been shown to improve motivation and quality of life for sufferers. Thus, Kegel exercises are an effective, safe, and easy-to-implement intervention that needs to be integrated into nursing care programs for the elderly to improve their quality of life.

Keywords: Urinary Incontinence, Elderly, Kegel Exercises , Pelvic Floor Muscle Training, Nursing

Introduction

Urinary incontinence (UI) is one of the most common health problems faced by older adults, especially women, and can significantly impact their quality of life (Saboia et al., 2017). Data shows that the prevalence of UI in elderly nursing home populations can reach 30-50%, with rates increasing with age and the presence of risk factors such as pelvic floor muscle weakness, hormonal changes, and other chronic health conditions. UI not only causes physical discomfort but also contributes to emotional problems such as anxiety, depression, and low self-esteem (Robson, 2025; AlQuaiz et al., 2023; Lee et al., 2021). This condition often discourages older adults from seeking medical help, leading to the issue being overlooked in healthcare settings.

In the context of long-term care in nursing homes, nurses and nursing assistants play a key role in UI management. However, research shows that knowledge and practices related to UI management among healthcare workers are often inadequate. The lack of systematic training and a thorough understanding of UI management can lead to neglect of this issue, which in turn negatively impacts the quality of care provided to patients. This is compounded by the fact that many nurses do not receive adequate training in techniques and best practices for managing urinary incontinence.

Pelvic floor muscle training, or Kegel exercises , has been identified as an effective non-pharmacological intervention for managing urinary incontinence (Zhang et al., 2023). These exercises

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aim to strengthen the muscles that support the bladder and urethra, thereby improving control over urine output (Kilpatrick et al., 2020). Research shows that Kegel exercises can provide significant benefits for older adults, including increased self-confidence, reduced frequency of uncontrolled urination, and improved overall quality of life (Mohamed et al., 2023). However, the implementation of Kegel exercises in the management of UI still faces several challenges, including a lack of knowledge about proper technique and support from family and healthcare professionals.

This study aims to explore the effect of Kegel exercises on reducing urinary incontinence symptoms in elderly patients in Kucur Village, Malang Regency. Using a mixed approach, including education and demonstrations, it is hoped that the elderly will understand the importance of Kegel exercises and apply them in their daily lives. The findings of this study are expected to provide better insight into gaps in knowledge and practice in managing UI, as well as offer recommendations for more effective training programs.

Through efforts to improve knowledge and skills, along with support from healthcare workers and families, it is hoped that UI management in nursing homes can be improved. This will improve patients' quality of life and minimize the stigma that often accompanies this condition. This research focuses not only on the effectiveness of Kegel exercises but also on the importance of developing evidence-based health intervention programs that can be implemented widely in the community.

Method

The method used in compiling this literature review is a literature review which aims to examine various research results regarding urinary incontinence in the elderly and the nursing interventions used to overcome it.

The article search process was carried out through several scientific databases such as Google Scholar, PubMed, and Crossref with the keywords: "urinary incontinence", "Kegel exercises", "pelvic floor muscle training", "elderly", and "nursing intervention".

The inclusion criteria used in selecting journals are:

1. Research articles published between 2018–2025.
2. National and international journals that discuss non-pharmacological interventions for urinary incontinence, especially in the elderly population.
3. Articles in Indonesian or English.
4. Articles are available in full text and are openly accessible.

The search resulted in 10 journals, consisting of 5 national and 5 international journals. All articles were analyzed using a descriptive-comparative approach, identifying the research objectives, methods, results, and key findings of each journal. The analysis then focused on assessing the effectiveness of pelvic floor muscle training (Kegel exercises) and other educational interventions in addressing urinary incontinence in the elderly, as well as comparing the similarities and differences in research findings between national and international journals.

Results

The characteristics, research designs, objectives, and main findings of the selected national and international studies included in this literature review are summarized in Table 1. This table provides a structured overview of the evidence regarding nursing-based urinary incontinence management strategies, particularly pelvic floor muscle training (Kegel exercises) and related educational interventions, to facilitate comparison and synthesis of the research findings.

Table 1. Summary of Selected Studies on Nursing-Based Urinary Incontinence Management

No.	Author /year	Title	Objective	Method	Results
1.	Sulistyawati AI, Abdullah A. , Kasimbara RP , et al. (2022)	The Effect of Kegel Exercises on Urinary Incontinence in Elderly Patients at Toeloengredjo Hospital, Pare	To determine the effect of Kegel exercise on urinary frequency in elderly people experiencing urinary incontinence at the Geriatric Polyclinic of Toeloengredjo Hospital, Kediri.	The study used a one-group pretest–posttest pre-experimental design on 23 elderly people with urinary incontinence at Toeloengredjo Hospital in Pare. The sample was taken using purposive sampling. The intervention consisted of Kegel exercises performed twice a week for 4 weeks. The level of incontinence was measured using the QUID (Questionnaire for Urinary Incontinence Diagnosis) questionnaire. Data were analyzed using the Wilcoxon test.	Mean urinary incontinence score before intervention: 13.26 . Average score after intervention: 10.00 . There was a decrease in the average score of 3.00 points . After Kegel exercises, some respondents experienced improvements in their type of incontinence, and some even became incontinent.
2.	Hapsari PS , Rosyid FN , & Indriastuti I. (2024)	Bladder Training Before Catheter Removal in Postoperative Patients with Urinary Incontinence: A Literature Review	To measure the effectiveness of bladder training before urinary catheter removal on the incidence of urinary incontinence in post-operative patients.	• Design: *Literature review* • Databases: PubMed, Crossref, Cochrane, Google Scholar • Article year range: 2019–2024 • Selection: Using the PRISMA method, a total of 2155 articles → were filtered into 8 articles that met the inclusion criteria. • Inclusion criteria: Adult patients (30–60 years), post-operative with catheterization, Quasi-Experiment method, RCT, Pre-	• Bladder training is effective as a non-medical intervention for post -operative patients with catheterization. • Helps strengthen the detrusor muscle, restore normal urination patterns, and reduce the incidence of urinary incontinence . • It is recommended for nurses to apply after irrigation is

				Post Test, English/Indonesian open access articles	completed and while the patient still has a catheter in place.
3.	Lisdahayati, Pome G. , Zanzibar , et al. (2025)	Management of Urinary Incontinence with Kegel Gymnastics in Erderly Patients with Urine Elimination Disorders	To describe the implementation of Kegel exercises in reducing urinary incontinence symptoms in the elderly in the working area of the Tanjung Agung Health Center UPTD.	Descriptive with a case study approach on 2 elderly patients with urinary incontinence. The intervention consisted of education, demonstration, and evaluation of Kegel exercises during	• Both patients showed significant urinary frequency : from 14-16 times/day to 5-6 times/day after 4 weeks. • Patients reported improved urinary elimination control and a good quality of life. • Family support plays an important role in the success of therapy
4.	Tumbol MA , & Murtiningsih . (2024)	THE EFFECT OF KEGEL EXERCISES ON URINARY INCONTINENCE IN POSTPARENT MOTHERS: A LITERATURE STUDY	This study aimed to evaluate the effect of Kegel exercises on urinary incontinence in postpartum mothers. This study was conducted through a literature review of 10 scientific articles published between 2018 and 2023. The main focus of this study was to determine the effectiveness of Kegel exercises as a non-pharmacological intervention in reducing urinary	This study is a descriptive literature review with a qualitative approach. The authors collected and analyzed various articles, journals, and academic sources relevant to the topic. Inclusion criteria included articles published within the last five years that examined the effects of Kegel exercises on urinary incontinence in postpartum mothers. The search process was conducted through academic databases such as PubMed and Google Scholar. The data obtained was then analyzed based on duration, exercise intensity, supervision, and results achieved. The authors also conducted categorization and thematic analysis to explore key patterns and	Research shows that Kegel exercises are effective in reducing urinary incontinence symptoms in postpartum women, especially when performed regularly, 2-3 times per week, for at least three months. Supervision by a healthcare professional appears to increase the effectiveness of the exercises compared to self-administered exercises. However, several studies in this review showed insignificant results, likely due to methodological variations, short exercise duration, or small sample sizes. Overall, Kegel exercises are considered a promising intervention for managing postpartum urinary incontinence. This study recommends implementing a

			incontinence symptoms experienced by postpartum mothers **.**	differences in results across existing studies.	structured and supervised Kegel exercise program to achieve optimal results, and further research is needed to confirm its effectiveness in diverse populations.
5.	Nurul Permata Sari, Nurul Aini Rahmawati, Agung Prasetya (2024)	Kegel Exercise Education to Reduce the Risk of Urinary Incontinence in the Elderly Community in Kucur Village, Malang Regency	Providing education to the elderly regarding Kegel exercises to reduce the risk of urinary incontinence.	Health education using leaflets, accompanied by pre- and post-tests to assess the knowledge of the elderly, was conducted at the Elderly Community Health Post (Posyandu Lansia) in Kucur Village, Malang, on October 9, 2024.	The counseling activity went well, participants showed a positive response, and there was an increase in the elderly's knowledge regarding urinary incontinence and Kegel exercises based on pre-test and post-test evaluations.
6.	Lulu Liao, Hui Feng, Jingjing Jiao, Yinan Zhao, Hongting Ning/ 2023	Nursing assistants' knowledge, attitudes and training needs regarding urinary incontinence in nursing homes: a mixed-methods study	To explore the knowledge, attitudes, and training needs of nursing assistants (NAs) regarding urinary incontinence (UI) in nursing homes in China.	Design: Mixed-methods (quantitative and qualitative) with an explanatory sequential design approach. Participants: • Quantitative survey of 509 nursing assistants. • Semi-structured interviews with 40 nursing assistants. Instruments: *Urinary Incontinence Knowledge Scale (UIKS)* and *Urinary Incontinence Attitude Scale (UIAS)* . Analysis: Descriptive statistics, t-test, chi-square, and qualitative thematic analysis using NVivo.	The results showed that nursing assistants' knowledge regarding urinary incontinence was still low with an average score of 14.00 ± 4.18, especially regarding risk factors and treatment, although they had a generally positive attitude with an average score of 35.51 ± 3.19. The majority (93.9%) were eager to learn more about urinary incontinence, but limited education and time were the main obstacles. The most preferred training styles were direct guidance from mentors, training that combines theory and practice, and flexible and easily accessible online video-based training.
7.	Zhu Y. , Cai W. , Liu S. , et al. (2025)	Mobile App–Based Self-Management of Urinary Incontinence in Pregnant Women:	To assess the effectiveness of the mobile application "Urinary Incontinence for Women"	• Design: Multicenter, pragmatic, randomized controlled trial (RCT) with two groups	• severity decreased significantly in the intervention group compared to the control after 12 weeks of intervention and 6-8

		Multicenter Pragmatic Randomized Controlled Trial	for self-management of urinary incontinence (UI) in pregnant women through a multicenter randomized controlled trial.	(intervention vs. control). • Sample: 295 pregnant women aged ≥18 years, singleton pregnancies aged 24–26 weeks from 5 hospitals in China. • Intervention: A 12-week self-management program using a mobile application for pelvic floor muscle training (PFMT) and UI health education. • The control group received standard care in the form of PFMT education and training without the mobile application. • Measurements: UI symptom severity (ICIQ-UI-SF), impact of UI on quality of life (IIQ-7), and PFMT self-efficacy were measured at baseline, after 12 weeks of intervention, and 6-8 weeks postpartum. • Data analysis with generalized estimating equations (GEE) to test intervention effects and inter-center variation.	weeks postpartum. • UI-related quality of life improved significantly in the intervention group compared to controls at both measurement times. • There were no significant differences between the PFMT groups in self-efficacy; in fact, self-efficacy tended to decline during the follow-up period. • There was variation in intervention effects based on education level, history of PFMT, history of vaginal delivery, and initial UI status. • Studies show that mobile apps are effective for managing UI during and after pregnancy, especially in women with UI symptoms. • The study recommends further development to improve exercise fulfillment and user motivation of the app.
8.	Milutinovic D. , Joldic M. N., Simin, D. , et al. (2024)	Knowledge and Practice Urinary Incontinence Management Among	This study aimed to evaluate the knowledge and practices of nurses and	This study employed a multicenter analytical, comparative, and correlational design. Data were collected through a self-	The study results showed that nurses' knowledge of IU management remains suboptimal, with many not implementing best

		Nursing Professionals in Serbian Nursing Homes: A Multice ntre Study	nursing assistants regarding the management of urinary incontinence (UI) in nursing homes, and to identify gaps in existing knowledge and practices.	assessment survey using a specially designed questionnaire, completed by nurses and nursing assistants working in three nursing homes in Serbia. Participants who met the inclusion criteria were invited to participate after being informed about the study.	practices. Although some care practices are implemented, there is a lack of systematic documentation and toileting plans. This study highlights the need for educational interventions to improve nurses' knowledge and practice of IU management in nursing homes.
9.	Trial, C., Kijmanawat, A., Saraluck, A., et al. (2023)	Mobile Application Based Pelvic Floor Muscle Training for Treatment of Stress Urinary Incontinence: An Assessor-Blind, Randomized, Controlled Trial	To evaluate the effectiveness of a custom-designed mobile app that provides pelvic floor muscle training (PFMT) with animation, self-assessment, reminder, and recording features in women with stress urinary incontinence (SUI).	A prospective, single-blind, randomized controlled trial. 60 women with a clinical diagnosis of SUI confirmed through a one-hour tampon test, aged 18 years and above, without severe pelvic organ prolapse or underlying chronic disease , and able to use the mobile app. - Groups: Participants were randomly divided into: - App group (n=30): Received PFMT via a mobile app that included animations, reminders, self-assessment, and recording. - Control group (n=30): Received conventional printed instructions for PFMT at home. - Intervention Duration: 12 weeks, with follow-up assessments at weeks 4, 8, and 12.	Healing Rate: There was no significant difference between the two groups at 12 weeks. - Compliance: The application group showed significantly higher compliance rates at 8 weeks (66.3% vs. 52.7%, p=0.002) and 12 weeks (59.1% vs. 37.8%, p=0.001). - Symptoms and Severity: A reduction in SUI symptoms and episodes was observed in both groups, with a slight improvement in the application group, but the difference in healing rates was not statistically significant. - Quality of Life: The app group showed greater improvements in several subjective measures, such as fewer SUI episodes and better scores on quality of life questionnaires. Overall, the mobile app was effective in improving exercise adherence and providing subjective benefits,

					although it did not significantly outperform standard instruction in healing SUI over a 12-week period.
10.	Javanmardifard, S., Gheibizadeh, M., Shirazi, F., et al. (2022)	Experience of Urinary Incontinence Management in Older Women: A Qualitative Study	To determine the experiences of older women in urinary incontinence management.	• Qualitative studies use an approach • conventional content analysis. This method is used to collect rich, new data that is not limited by pre-existing categories.	Study participants consisted of 22 elderly women with an average age of 66.54±5.76 years. After data analysis, it was found that : • Resilience • Lifestyle Changes • Treatment Efforts for Conditions • Receiving Support

Source: Developed by the authors based on reviewed articles (2018–2025)

Discussion

Based on a review of ten national and international journals, it can be concluded that urinary incontinence is a common problem in the elderly, which can impact quality of life, sleep disturbances, and low self-confidence. Most studies show that non-pharmacological interventions, particularly Kegel exercises or pelvic floor muscle training, provide significant results in reducing the frequency and severity of urinary incontinence symptoms.

From national journals, several studies such as those conducted by Sulistyawati et al. (2022) and Lisdahayati et al. (2025) demonstrated that Kegel exercises performed routinely 2–3 times per week for 4 weeks can reduce excessive urination frequency and improve urinary elimination control in older adults. Educational interventions conducted in senior communities have also been shown to increase older adults' knowledge and motivation to perform the exercises independently (Sari et al., 2024).

Meanwhile, international journals provide a broader perspective, including the use of digital technologies such as mobile application-based training, which has shown positive results in improving compliance and quality of life for users with urinary incontinence (Trial et al., 2023 ; Zhu et al., 2025). Although the recovery rate was not significantly different compared to conventional methods, the use of the application was shown to increase motivation and consistency of exercise.

In addition to physical exercise, other research highlights the role of nurses and healthcare workers in providing education and support to elderly patients with urinary incontinence. A study by Liao et al. (2023) and Milutinovic et al. (2024) emphasized that the knowledge and positive attitudes of nursing staff significantly influence the success of urinary incontinence management in elderly care facilities. Lack of training and time are common barriers encountered in various countries.

From the patient experience perspective, that elderly women tend to develop adaptive coping strategies such as changing lifestyle, strengthening resilience, and seeking social support to manage incontinence symptoms. (Javanmardifard et al., 2022) . This shows that psychological and social aspects also need to be considered in handling it.

Overall, the findings from various journals indicate that:

1. Kegel exercises and pelvic floor muscle exercises are effective as non-pharmacological therapies.
2. Technology-based education and training can improve compliance and long-term outcomes.
3. The active role of nurses is very important in educating, motivating, and accompanying the elderly during the training process.
4. A bio-psycho-social approach is needed to ensure more comprehensive and sustainable treatment of urinary incontinence.

Thus, it can be concluded that the implementation of Kegel exercises regularly, accompanied by adequate education and support from family and health workers, is an effective strategy to reduce urinary incontinence symptoms in the elderly and improve their quality of life.

Research shows that Kegel exercises and bladder training are effective in reducing urinary incontinence symptoms in the elderly, postpartum mothers, and postoperative patients. Kegel exercises have been shown to significantly reduce urinary frequency and improve urinary control ($p = 0.000$), especially when performed regularly 2–3 times a week under the supervision of a healthcare professional. Kegel education also increases the elderly's knowledge and awareness of incontinence prevention.

International research supports these findings, with mobile applications for pelvic floor muscle exercises shown to increase compliance and improve quality of life for patients. Family support and nursing training are crucial factors in successful urinary incontinence management.

Conclusion

Based on a review of ten national and international journals on urinary incontinence in the elderly, it can be concluded that pelvic floor muscle training (Kegel exercises) is an effective, safe, and easy-to-implement non-pharmacological intervention to reduce the frequency and severity of urinary incontinence symptoms. These exercises help increase pelvic floor muscle strength, improve urinary control, and positively impact the quality of life of the elderly.

Furthermore, international research shows that the use of technology-based media such as mobile apps can be a supportive alternative that improves exercise adherence and continuous monitoring of results. However, the success of an intervention is determined not only by physical exercise but also by educational support and the active role of nurses in providing motivation, monitoring, and support to elderly patients.

Therefore, it is recommended that nurses integrate Kegel exercise programs into their care for older adults, both in hospitals and in the community. A holistic approach encompassing biological, psychological, and social aspects is necessary to ensure more effective, sustainable, and improved overall well-being for older adults.

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