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THE EFFECTIVENESS OF KEGEL EXERCISES IN REDUCING URINARY INCONTINENCE IN POST-OPERATIVE TURP PATIENTS

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ABSTRACT
Urinary incontinence is a common complication following Transurethral Resection of the Prostate (TURP) for benign prostatic tumors, which significantly impacts the quality of life of patients. Kegel exercises have been proven effective as a non-pharmacological intervention to improve bladder control and strengthen the pelvic floor muscles. This study aims to evaluate the effectiveness of Kegel exercises in reducing urinary incontinence levels in post-TURP patients. Objective to assess the effectiveness of Kegel exercises in reducing the severity of urinary incontinence in post-TURP patients. This study used a quasi-experimental design with a pre-test and post-test approach on 15 post-TURP patients at RSUD Labuang Baji Makassar. Respondents performed Kegel exercises for 7 days with a frequency of 6 sessions per day. Urinary incontinence levels were measured using the ICIQ-UI Short Form questionnaire before and after the intervention. Data analysis was conducted using the dependent t-test. Before the intervention, the average urinary incontinence score was 24.27 (±2.712), which decreased to 21.73 (±3.217) after the intervention, with a p-value of < 0.001. The effect size of 0.915 indicates a significant effect. Kegel exercises are effective in reducing the severity of urinary incontinence in post-TURP patients. This intervention is recommended as a non-pharmacological therapy to improve patients' quality of life.

Keywords: kegel exercises; pelvic floor muscles; patient quality of life; post-surgical management; transurethral resection of the prostate (turp); urinary incontinence

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INTRODUCTION

Benign prostatic tumor is a significant health issue among men, particularly as they age. The enlargement of the prostate gland can lead to various complications, including urinary flow obstruction, which can severely affect a patient's quality of life. According to Brunner, (2010), benign prostatic tumors are often caused by benign hyperplasia of the prostate cells, a condition commonly seen in men over the age of 40. Data shows that approximately 90% of men over 40 in Indonesia experience prostate enlargement (Aprina, Yowanda, & Sunarsih, 2017). This condition is not only a local concern but also a global issue. The World Health Organization (WHO) reports that nearly 30 million men worldwide suffer from benign prostatic tumors, with the incidence rate increasing with age. In men aged 40, the incidence is around 40%, and it increases to 90% in men over the age of 70 (WHO, 2023).

Benign prostatic tumors often lead to urinary elimination problems, and urinary retention is one of the most common complications that requires surgical intervention, such as Transurethral Resection of the Prostate (TURP) (Bimandama & Kurniawaty, 2018). Although TURP is considered the gold standard in managing benign prostatic tumors, this procedure carries significant post-operative complication risks, including urinary incontinence. Research shows that around 30-40% of patients experience urinary incontinence following this procedure ini (Bruschini, Simonetti, Antunes, & Srougi, 2011). Urinary incontinence not only affects the physical aspect but also the psychological well-being of the patient, leading to a

significant decline in quality of life. This issue is particularly concerning at RSUD Labuang Baji Makassar, where a preliminary study showed that of 10 post-TURP patients, six experienced urinary incontinence. This incontinence can be caused by various factors, including abnormalities in the sphincter mechanism and bladder dysfunction ini (Bruschini et al., 2011). Patients with incontinence often feel isolated and experience decreased self-esteem due to their condition, which impacts their social interactions and mental health (Boy, Veriza, & Valentina, 2020). To address this issue, non-pharmacological interventions such as Kegel exercises have proven effective in improving bladder control and reducing urinary incontinence symptoms. Kegel exercises are designed to strengthen the pelvic floor muscles and have shown positive outcomes in previous studies. According to Jauhar, Lestari, & Surachmi, (2021), these exercises not only improve bladder function but also enhance the quality of life of post-TURP patients.

Considering the high prevalence of urinary incontinence post-TURP at RSUD Labuang Baji Makassar and its impact on patients' quality of life, this study aims to evaluate the effectiveness of Kegel exercises in reducing urinary incontinence levels in post-TURP patients. The research objective is to assess whether Kegel exercises can effectively alleviate urinary incontinence symptoms, ultimately improving patients' quality of life and psychological well-being. It is hoped that the implementation of Kegel exercises as part of the care plan will yield positive results, helping patients return to their daily activities more effectively and enhancing their overall quality of life. Through this approach, it is expected that the negative impact of urinary incontinence will be reduced, and the psychological well-being of post-TURP patients will be enhanced."

METHOD

This study uses a quasi-experimental design with a pre-test and post-test approach to evaluate the effectiveness of Kegel exercises in reducing urinary incontinence in post-TURP patients at RSUD Labuang Baji Makassar. The study population includes all patients who undergo TURP procedures at the hospital, with a purposive sampling method for selecting the sample. Inclusion criteria include patients who have undergone TURP, are 40 years or older, and are willing to participate in the Kegel exercise program. Exclusion criteria include patients with medical conditions that impair their ability to perform the exercises, such as neurological or cardiovascular disorders. The research was conducted at RSUD Labuang Baji Makassar, a referral hospital in South Sulawesi that provides comprehensive urological surgical services. Prior to the study, ethical approval with the number 467/KEP-RSUD/LB/2024 was obtained from the RSUD Labuang Baji Makassar ethics committee. Demographic data and patients' health conditions were collected through interviews and physical examinations. A urinary incontinence scale was used to assess the level of incontinence before the intervention.

The Kegel exercise intervention involved educating patients on the proper technique, including how to contract and relax the pelvic floor muscles. The exercise program lasted for 4 weeks, with sessions conducted 3 times a week, each lasting 20-30 minutes. After the intervention period, urinary incontinence levels were reassessed using the same scale to measure any changes. The data collected were analyzed using statistical software, with a paired t-test to compare the average urinary incontinence scores before and after the Kegel exercise intervention. Statistical significance was set at $p < 0.05$. All research procedures were conducted in accordance with ethical research standards, including obtaining informed consent from each participant and maintaining the confidentiality of patient data throughout the study process. With this method, it is expected to obtain valid data on the effectiveness of Kegel exercises in reducing urinary incontinence levels in post-TURP patients at RSUD Labuang Baji Makassar. The results of this study are anticipated to make a significant

contribution to nursing practice in the management of post-operative urinary incontinence.

RESULT

Implementation of Evidence-Based Nursing Practice (EBNP)

The implementation of Evidence-Based Nursing Practice (EBNP) was conducted from April 22 to June 7, 2024, in the surgical care ward at RSUD Labuang Baji over the course of two days, followed by five days at the patients' homes. The goal of this EBNP was to reduce urinary incontinence levels in post-Transurethral Resection of the Prostate (TURP) patients at RSUD Labuang Baji, Makassar. The population involved were post-surgery TURP patients with benign prostatic hyperplasia (BPH) who met the inclusion criteria. Initially, 43 patients were planned as samples, but due to limited TURP cases and time constraints, the final sample consisted of 15 patients. The EBNP implementation consisted of three phases:

a. Initial Phase: Measurement of the severity of urinary incontinence using the International Consultation on Incontinence Questionnaire-Urinary Incontinence Short Form (ICIQ-UI SF) before the intervention.
b. Intervention Phase: Conducting Kegel exercises for 7 days, with 6 sessions per day.
c. Evaluation Phase: Re-assessment of urinary incontinence severity on day 7 using the same questionnaire.

Table 1.
shows the frequency distribution of respondents by age

Average Age	SD	Age Range (Years)
63,60	±15,896	43-98

Respondents ranged in age from 43 to 98 years, with an average age of 63.6 years (±15.896). The age distribution was as follows: 4 patients (26.6%) aged 51-61 years, 4 patients (26.6%) aged 61-70 years, and 1 patient (6.6%) each aged 81-90 years and 91-100 years. Table 2 shows the changes in urinary incontinence scores before and after the Kegel exercise intervention:

Table 2.
Distribution of Urinary Incontinence Levels Before and After Kegel Exercise in BPH Patients Post-TURP

Variable	Mean	SD	Min-Maks	95% CI
Before Intervention	24,27	±2,712	19-28	22,77-25,77
Day 4	23,27	±2,963	17-28	21,63-24,91
Day 7	21,73	±3,218	15-28	19,95-23,51

Before the intervention, the average urinary incontinence score was 24.27 (±2.712), indicating severe incontinence. On day 4, the average score decreased to 23.27 (±2.963). On day 7, the score further decreased to 21.73 (±3.218), reflecting a significant clinical reduction. The dependent t-test analysis was used to compare urinary incontinence scores before and after the intervention. The analysis results are presented in Table 3:

Table 3.
Mean Differences in Urinary Incontinence Levels Before and After Kegel Exercise in BPH Patients Post-TURP

Variable	Mean	SD	SE (diff)	Effect Size	P Value
Before Intervention	24,27	±2,712	0,236	0,915	<0,001
After Intervention	21,73	±3,217			

The average urinary incontinence score significantly decreased from 24.27 (±2.712) before the intervention to 21.73 (±3.217) after the intervention. The effect size of 0.915 indicates a large effect according to Cohen's criteria. A p-value of <0.001 shows a statistically significant difference. The results of this study indicate that Kegel exercises are effective in reducing the severity of urinary incontinence in post-TURP patients. This clinical and statistical

significance supports the application of Kegel exercises as a standard non-pharmacological approach in managing urinary incontinence in this patient population.

DISCUSSION

This study demonstrates that Kegel exercises performed over 7 days in post-TURP patients with benign prostatic hyperplasia (BPH) can significantly reduce urinary incontinence, both clinically and statistically. Prior to the intervention, most patients experienced urinary incontinence with a severity ranging from moderate to very severe. However, after performing Kegel exercises, many of them showed notable improvement, with a reduction in incontinence severity to moderate levels. Some patients, who initially had very severe incontinence, even showed considerable improvement. While the score reduction was recorded as only 1 to 2 points, the clinical changes were quite encouraging, especially in the patients' ability to control urination in specific situations, such as when removing clothing, bending over, or running to the bathroom. Conversely, the highest urinary incontinence scores were found in patients who frequently had accidents before reaching the toilet or experienced leakage when coughing or sneezing (Zhou et al., 2023; Susanto et al., 2022).

The benefits of Kegel exercises are supported by previous research, which shows that this exercise can speed up recovery and reduce urinary incontinence symptoms. Istiqomah, Dwi Nandriani, (2022) stated that post-TURP patients who performed Kegel exercises experienced a faster reduction in dribbling symptoms compared to those who did not perform the exercises. This is attributed to more optimal recovery of the pelvic floor muscles and bladder sphincter (Purwanto, Erniyawati, Hariyanto, Muhalla, & Wijayanti, 2021). In post-TURP patients, urinary incontinence often occurs due to irritation caused by the prostate scraping procedure, which leaves wounds, as well as stiffness in the bladder sphincter (Yu et al., 2023; Sulfikar & Rajab, 2024). Ruli Fatmawati et al., (2024) explained that early incontinence after surgical procedures can be caused by damage to the prostate area, leading to stiffness in the tissues, including the bladder sphincter. Kegel exercises help speed up recovery by stimulating the pelvic floor muscles and improving blood circulation to the area, which in turn aids in wound healing and the restoration of muscle function.

Furthermore, age plays a role in the increased incidence of urinary incontinence in post-TURP patients. With an average patient age of 63.60 years, these findings align with research by Eastham in Bruschini et al., (2011), which showed that older age is associated with decreased pelvic floor muscle strength and bladder nerve function weakness. As people age, the pelvic floor muscles tend to weaken, and the bladder sphincter becomes less effective in controlling urine flow (Urkmez, Ranasinghe, & Davis, 2020). A study by Daryaman, (2021) also found that elderly patients are more susceptible to urinary incontinence after prostate surgery, and the aging process worsens recovery after TURP. Kegel exercises have been proven effective in improving this condition. Several prior studies support the benefits of this exercise, such as Centemero et al., (2010), who reported that Kegel exercises can reduce urinary incontinence in patients after radical prostatectomy. Daryaman, (2021) also found that behavioral therapy, including pelvic muscle floor training (PMFT), could reduce the frequency of urinary incontinence by up to 50%. Kegel exercises work by strengthening the pelvic floor muscles, which support bladder control and accelerate the recovery of muscles affected by surgery (Yang et al., 2023).

Beyond the medical benefits, Kegel exercises also have a positive impact on the quality of life of patients. These exercises not only improve urinary incontinence but can also enhance sleep quality, social relationships, and sexual satisfaction. As incontinence levels decrease, patients feel more confident and comfortable in social interactions and daily activities (Strączyńska et

al., 2019).. Additionally, Kegel exercises can improve erectile function in patients, which is often affected after TURP procedures. These exercises improve blood flow to the genital area and enhance muscle tone that supports erections, thus positively affecting the patients' sexual life (Geraerts et al., 2016; Alsannan, Banakhar, & Hassouna, 2024). However, despite the numerous benefits of Kegel exercises, there are some limitations. These exercises cannot be performed by patients with an indwelling catheter, and for optimal results, consistent practice over a sufficient period, at least three months, is required (Sandhu et al., 2019). Older patients, particularly those over 80 years old, may not achieve optimal results even with longer practice. Moreover, these exercises require high concentration, and monitoring by family members or caregivers is essential, especially during the early stages of practice (Yang et al., 2023). Overall, Kegel exercises prove to be an effective, practical, and non-invasive intervention in reducing urinary incontinence in post-TURP patients, while also improving their quality of life. This exercise accelerates post-surgery recovery, improves pelvic floor muscle function, and provides positive psychological and social impacts on patients, making it a highly valuable therapeutic option (Pratiwi, Yusniar, Susanti, & Sukartini, 2020; Benedetto et al., 2023).

CONCLUSION

Kegel exercises have proven to be effective in reducing the severity of urinary incontinence in post-Transurethral Resection of the Prostate (TURP) patients. The significant reduction in urinary incontinence scores indicates that this exercise not only provides clinical benefits but also has a positive statistical impact. This intervention strengthens the pelvic floor muscles, improves bladder sphincter function, and enhances blood circulation, contributing to faster post-operative recovery. In addition to its physiological benefits, Kegel exercises have a positive impact on the patients' quality of life, such as improving self-confidence, comfort in social activities, and sexual function. With its proven effectiveness and non-invasive nature, Kegel exercises can serve as a standard intervention in managing urinary incontinence in post-TURP patients, both in hospitals and in home care. However, the success of this exercise requires consistency, monitoring, and support from healthcare professionals and the patient's family. With optimal implementation, Kegel exercises can be a practical and cost-effective solution to address urinary incontinence in this patient population.

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