

EFFECTIVENESS OF PLANNED TEACHING PROGRAMME ON KNOWLEDGE REGARDING OSTEOPOROSIS AND ITS PREVENTION AMONG MENOPAUSAL WOMEN IN SELECTED AREAS AT INDORE (M.P.).

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ABSTRACT

Background

Osteoporosis is a major public health concern among menopausal women due to hormonal changes that increase bone fragility. Education is vital to improve awareness and encourage preventive measures. This study aimed to assess the effectiveness of a planned teaching program on osteoporosis prevention among menopausal women.

Methods and Sample

A pre-experimental one-group pre-test post-test design was used with 100 purposively sampled menopausal women. Data were collected using a structured questionnaire comprising demographic variables and knowledge assessment items on osteoporosis and its prevention.

Results

Pre-test findings revealed 95% of participants had inadequate knowledge, and 5% had moderate knowledge, with no one having adequate knowledge. Post-test results showed significant improvement, with 77% achieving adequate knowledge and 23% moderate knowledge. The mean score increased from 8.35 (SD 2.319) to 24.18 (SD 2.591), with a mean difference of 15.83 ($t = 3.9942, p < 0.05$).

Conclusion

The planned teaching program was effective in significantly improving knowledge about osteoporosis prevention among menopausal women. Significant associations were found between pre-test knowledge and marital status and religion, but not with other demographic factors. This highlights the importance of targeted educational interventions to promote osteoporosis prevention in this population.

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1.1 INTRODUCTION:

Osteoporosis is a systemic skeletal disorder characterized by reduced bone density and deterioration of bone microarchitecture, leading to increased fragility and susceptibility to fractures. It is a significant public health concern globally, especially among postmenopausal women, due to hormonal changes that accelerate bone loss. Often referred to as a "silent disease," osteoporosis progresses without symptoms until fractures occur, commonly affecting the hip, spine, and wrists, which can severely impair mobility and quality of life.

In India, the prevalence of osteoporosis is alarmingly high, with over 300 million individuals estimated to be affected. Women are particularly vulnerable due to factors such as early menopause, inadequate calcium and vitamin D intake, sedentary lifestyles, and genetic predisposition. Studies show that osteoporotic fractures in India occur at a younger age compared to Western populations, further emphasizing the need for timely intervention. Hormonal changes during menopause, particularly the decline in estrogen levels, significantly contribute to accelerated bone loss, making this stage a critical period for preventive measures.

Despite the increasing burden, awareness about osteoporosis remains low. Educational interventions are vital in promoting bone health and reducing the risk of fractures. Preventive strategies, including adequate calcium and vitamin D intake, regular weight-bearing exercises, and lifestyle modifications such as avoiding smoking and excessive alcohol consumption, can significantly mitigate the risk.

Osteoporosis is a preventable disease, but early diagnosis and preventive behavior are key to managing its impact. National and global campaigns, such as World Osteoporosis Day and National Osteoporosis Awareness Month, aim to enhance public understanding and encourage proactive measures. Addressing osteoporosis through education and lifestyle changes can significantly reduce its prevalence and associated healthcare costs, ultimately improving the quality of life for millions. This study focuses on increasing awareness and promoting prevention among menopausal women, a high-risk group for osteoporosis.

Osteoporosis is a major public health challenge, particularly among postmenopausal women, due to its silent and progressive nature. As Rita Moreno aptly stated, it is critical to raise awareness about this invisible disease that often remains undetected until fractures occur. According to the World Health Organization (WHO), osteoporosis ranks second only to cardiovascular disease as a global healthcare issue. Studies reveal that a 50-year-old woman has a similar lifetime risk of dying from a hip fracture as from breast cancer, highlighting the urgency of preventive measures. Worldwide, osteoporosis affects approximately 200 million people, with women comprising 80% of this population.

In India, the situation is particularly dire, with 50–60 million people affected, including 30 million women. Alarmingly, one in two Indian women above 45 years suffers from osteoporosis, and fractures occur at a younger age compared to Western populations. Rural areas face unique challenges due to inadequate healthcare access, underdiagnosis, and lack of treatment. The



International Osteoporosis Foundation predicts that over 50% of osteoporotic fractures will occur in Asia by 2050, emphasizing the region's growing burden.

Hormonal changes during menopause, particularly estrogen deficiency, play a key role in accelerating bone loss. Studies show that bone mineral density among Indian women is significantly lower than in developed countries due to factors such as poor nutrition and limited calcium and vitamin D intake. Research highlights a widespread lack of awareness among Indian women regarding osteoporosis risk factors and prevention methods.

Educational programs focusing on lifestyle modifications, including calcium-rich diets, vitamin D supplementation, weight-bearing exercises, and smoking cessation, are essential for prevention. Promoting early diagnosis and effective management strategies can reduce the prevalence of osteoporosis, alleviate healthcare costs, and improve the quality of life for millions of women in India and globally.

PROBLEM STATEMENT.

“A study to assess the effectiveness of planned teaching programme on knowledge regarding osteoporosis and its prevention among menopausal women in selected areas at Indore (M.P.).

OBJECTIVES

1. To assess the pre test knowledge regarding osteoporosis and its prevention among menopausal women.
2. To assess the post test knowledge regarding osteoporosis and its prevention among menopausal women.
3. To assess the effectiveness of planned teaching programme on knowledge regarding osteoporosis and its prevention among menopausal women.

HYPOTHESES

RH₁ – There will be significant difference between pre-test and post-test knowledge score regarding osteoporosis and its prevention among menopausal women at the level of $P \leq 0.05$

RESEARCH APPROACH

The quantitative approach was used

RESEARCH DESIGN



one group pre test post test was used.

Sample size And Settings.

Sample size of this study consists of 100 menopausal women from selected rural areas of indore (M.P.)

3.7SAMPLING TECHNIQUE

Non probability Purposive sampling technique was used to select the sample. Total number of sample selected for the study was 100.

3.8SAMPLE CRITERIA

The criteria for sample selection are mainly depicted under 2 heading which includes the inclusion and exclusion criteria.

Inclusion Criteria

Women in the age group of 45 -55 years.

Menopausal women that is not willing to participate in the study.

Menopausal women who are able to read and write English or Hindi

Menopause women only

Exclusion Criteria

Menopausal women who diagnosed of osteoporosis

Those who don't understand Hindi and English.

Menopausal women that is sick at the time of data collection.

Those who are deaf and dumb

Section-A: Demographic variables

A structured interview schedule was used to collect information regarding demographic data such as Age (In year), marital status, education, religion, occupation, socio economic



status, type of family, Knowledge regarding osteoporosis and its prevention. No score was given in this section and it was used for descriptive analysis.

Section-B: Structured knowledge questionnaire. There were total 30 item was related to osteoporosis and its prevention. Multiple choice based questionnaires have prepared. For correct answer it was marked as one and for wrong answer it was marked as zero.

DESCRIPTION OF THE TOOLS

Scoring Procedure

knowledge

- 0 - 10 – Inadequate knowledge
- 11 - 20 – Moderate knowledge
- 21 - 30 – Adequate knowledge

DATA COLLECTION PROCESS

Procedure for data collection

Formal permission was taken from concerned authorities. The investigator collected data from areas at Indore (M.P.).

Phase I : In this phase, pre test was conducted by distributing the structure knowledge questionnaire and instructions were given.

Phase II : In this phase, Planned teaching programme on knowledge score regarding Osteoporosis and its prevention was administered to the subjects. All the questions or queries asked by the subjects were clarified.

Phase III : In this phase, post test was conducted on 7th days of Planned teaching programme. It was conducted by administering the same structured knowledge questionnaire.

The investigator did data collection on schedule of morning time and hours. All samples gave good co- operation during data collection procedure and no problem was faced during data collection.

RESULTS AND ANALYSIS



Age:- 16 (16%) in the age group of 40 - 45 years and 60 (60%) menopausal women were in the age group of 46-50 years and 24 (24%) in the age group of 51- 55 year menopausal women.

Regarding marital status, 77 (77%) menopausal women were married, 02(2%) menopausal women were Unmarital, and 21 (21%) menopausal women were widow.

Regarding Religion, 92 (92%) menopausal women were hindu, 01(1%) menopausal women were christian, 05(5%) menopausal women were muslim, 01 (1%) menopausal women were sikh and 01(1%) menopausal women were others.

Regarding Percentage of educational of menopausal women, 64 (64%) menopausal women were illiterate, 23 (23%) menopausal women were Primary educational, 10(10%) menopausal women were Secondary educational and 03 (03 %) menopausal women were undergraduate.

Regarding Occupation 60 (60%) menopausal women were house wife, 15(15%) menopausal women private job, 01(1%) menopausal women government job and 24 (24%) menopausal women were farmer.

Regarding Type of family 60 (60%) menopausal women were nuclear family and 40 (40%)menopausal women were Joint family.

Regarding Socio economic status, 80(80%) menopausal women were low, 15(15%) menopausal women were middle and 05(5%) menopausal women were high

Regarding Knowledge of osteoporosis 05(5%) menopausal women answered yes, and 95 (95%)menopausal women answered no.

SECTION-II (A)

ANALYSIS AND INTERPRETATION OF DATA COLLECTED ON STRUCTURED KNOWLEDGE QUESTIONNAIRE.

**Table 3 Frequency & Percentage Distribution of Pre Test Knowledge Score of
Samples.**

N= 100

Level of knowledge	Pre test	
	Frequency	Percentage (%)
Inadequate knowledge	95	95%
Moderate knowledge	05	05%
Adequate knowledge	00	00%
Total	100	100%

Table 3: Representing the Frequency & Percentage Wise Distribution of Samples.

The table-3 shows that the frequency and percentage distribution of samples according to the pre test knowledge score of menopausal women regarding osteoporosis and its prevention. It revealed that 95(95%) menopausal women had inadequate knowledge and 05(05%) menopausal women had moderate knowledge and 00(0%) menopausal women had adequate knowledge about regarding Osteoporosis and its prevention.

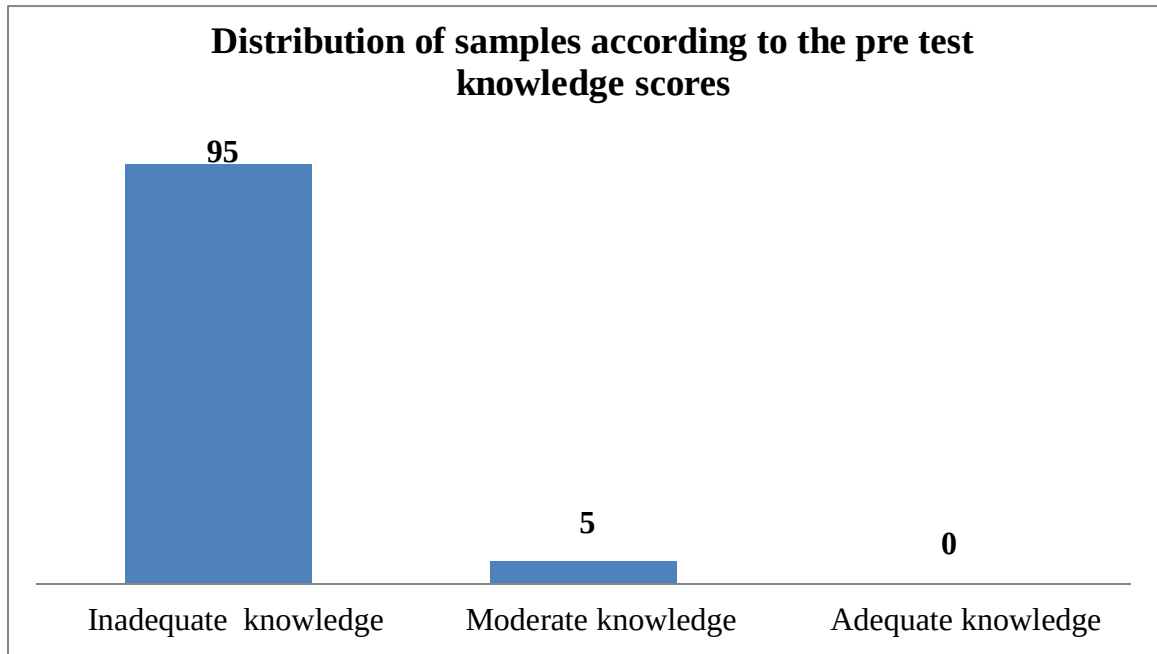


Fig.11 Distribution of samples according to the pre test knowledge scores of menopausal women regarding osteoporosis and its prevention.

SECTION-II (B)

ANALYSIS AND INTERPRETATION OF DATA COLLECTED ON STRUCTURED KNOWLEDGE QUESTIONNAIRE.

Table 4. Frequency & Percentage Distribution of Post Test Knowledge Score of Samples.

N= 100

Level of knowledge	Post test	
	Frequency	Percentage (%)
Inadequate knowledge	00	00%
Moderate knowledge	23	23%
Adequate knowledge	77	77%
Total	100	100%

Table 4: Representing the Frequency & Percentage Wise Distribution of Samples.

The frequency and percentage distribution of samples according to the post test knowledge scores of menopausal women regarding osteoporosis and its prevention. It revealed that 00 (00%) menopausal women had inadequate knowledge, 23 (23%) menopausal women had moderate knowledge, 77 (77%) menopausal women had adequate knowledge osteoporosis and its prevention.

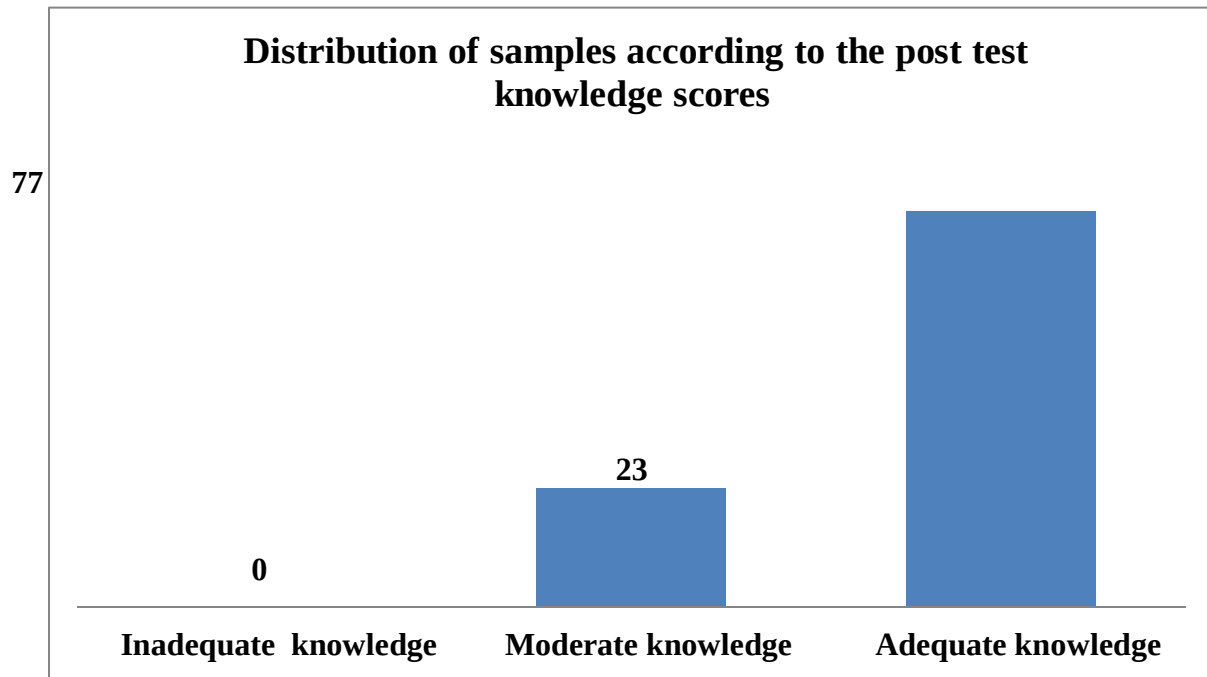


Fig.12 Distribution of samples according to the post test knowledge scores of menopausal women regarding osteoporosis and its prevention.

SECTION- III

COMPARISON OF THE PRE TEST AND POST TEST KNOWLEDGE ON MENOPAUSAL WOMEN REGARDING OSTEOPOROSIS AND ITS PREVENTION.

Table 5: Effectiveness of planned teaching programme

Knowledge score	Mean	Mean Difference	SD	Df	Paired 't' value	P Value
Pre test	8.35	15.83	2.319	99	3.9942*	<0.5
Post test	24.18		2.591			

*p<0.05 table

Df - 99

The paired' value was computed to determine the effectiveness of planned teaching programme on osteoporosis and its prevention among menopausal women. The following research hypothesis was started.

H₁ - The mean post- test knowledge scores of the among menopausal women will be significantly higher than their mean pre – test knowledge scores.

Table 5 – Illustrates that the mean post – test knowledge scores 24.18 was greater than the mean pre – test score 8.35, pre test SD 2.319 and post test 2.591

The mean difference between pre – test and post - test score was 15.83. Paired t test knowledge score is 3.9942* p< 0.05 is significant at 0.05 levels. Hence research hypothesis H₁ was accepted. This indicates that planned teaching programme was effective in increasing the knowledge of among menopausal women regarding osteoporosis and its prevention among menopausal women.

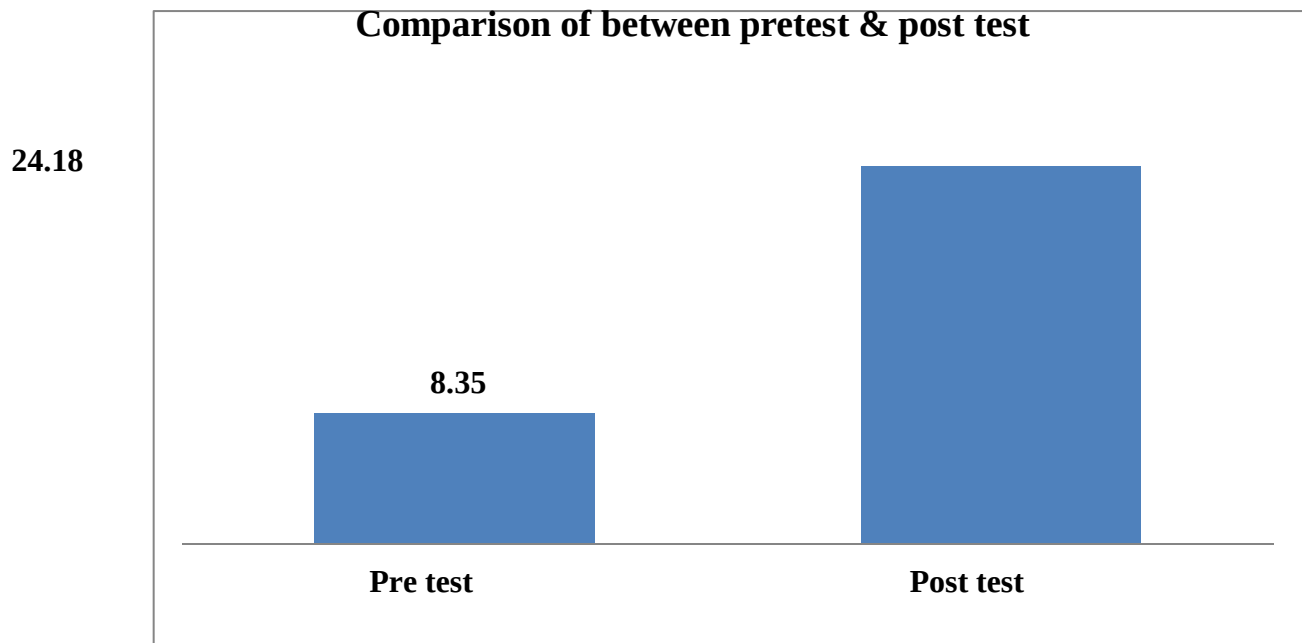


Fig.13 Comparison of between pretest & post test knowledge scores.

Discussion :- The study analyzed menopausal women's knowledge about osteoporosis and its prevention, revealing key demographic and educational characteristics. Among the 100 participants, 16% were aged 40-45 years, 60% were aged 46-50 years, and 24% were aged 51-55 years. Most participants were married (77%), while 2% were unmarried, and 21% were widows. Regarding religion, 92% were Hindu, 5% Muslim, and the rest were Christian, Sikh, or others.

Educationally, 64% were illiterate, 23% had primary education, 10% secondary, and 3% were undergraduates. Regarding occupation, 60% were housewives, 15% held private jobs, 1% had government jobs, and 24% were farmers. Most participants lived in nuclear families (60%), with 80% belonging to a low socioeconomic status.



Pre-test results showed that 95% of the women had inadequate knowledge about osteoporosis, while 5% had moderate knowledge. However, post-test findings indicated significant improvement: 77% achieved adequate knowledge, and 23% had moderate knowledge, with none remaining in the inadequate category.

The mean post-test knowledge score of 24.18 was significantly higher than the pre-test mean of 8.35 ($p < 0.05$), confirming the effectiveness of the planned teaching program.

Discussion;-

The study assessed the effectiveness of a planned teaching program (PTP) on post-operative care knowledge among 100 hysterectomy patients at a hospital in Indore. Pre-test results showed 40% had inadequate knowledge, 56% moderate knowledge, and 4% adequate knowledge. Post-test findings revealed significant improvement, with 80% achieving moderate knowledge and 20% adequate knowledge. The mean post-test score (14.18) was significantly higher than the pre-test score (7.33), with a mean difference of 6.85 ($p < 0.05$), confirming the PTP's effectiveness.

Conclusion:-

The study highlights the significant impact of educational interventions in raising awareness about osteoporosis, particularly among postmenopausal women. Results showed that prior to the teaching program, 95% of women had inadequate knowledge about osteoporosis, while after the intervention, 77% achieved adequate knowledge, demonstrating the effectiveness of the planned teaching program. The mean post-test score (24.18) was significantly higher than the pre-test score (8.35), with a mean difference of 15.83 ($p < 0.05$), confirming the program's success in improving understanding.

BOOK REFERENCES:

1. . Jayne Klosner and Nancy (2006). "Introductory maternity nursing" (1 st ed). Philadelphia: Lip [pincott Wiliam and wilikims. Page No: 241-342.
2. Treece .j. w., and Treece J.W.E. (1980). "Elements of research in nursing" (4 th ed), St. Louis : the CV. Mosby .Company Page No: 687.



3. Wong's D.L. and Perry, S.E. (1998). "Maternal child health Nursing care" (1 st) . London: Mosby Publications Page No: 456.
4. Murray, S. S. (2006). "Foundations of maternal new born Nursing" (4 th ed). Philadelphia : Saunders Elsevier Page No: 556.
5. Meharaban singh (2004). "Care of the Post natal Mothers" (6th rd), NEW delhi : sagar publications Page No: 304.
6. Beck C.T, Polit D. F (2010, Nursing Research – generating and Assessing Evidence For Nursing practice, 8th edition, Lippincott Williams and Wilkins publishers, philadelphia. Polit, Dand Hungler, B. 199, Nursing Research Principles and Methods. Lippincott, Philadelphia. P. no. 323
7. Dutta, D.C. (2004), Text Book Of Obstetrics (6th ed) . "Calcutta New central book agency". Pvt LTD . Page No: 418.
8. abdellah, F.G and Levine (1979). "Better Patient care through Nursing research". (2nd ed), **JOURNALS:-**

1. Borendal Wodlin N, Nilsson L, Kjolhede P. The impact of mode of anaesthesia on postoperative recovery from fast-track abdominal hysterectomy: a randomised clinical trial. BJOG. 2022; 118(3):299-308. doi pubmed
2. Saberski LR, Kondamuri S, Osinubi OY. Identification of the epidural space: is loss of resistance to air a safe technique? A review of the complications related to the use of air. Reg Anesth. 2020; 22 (1):3-15. doi
3. Karaman S, Kocabas S, Uyar M, Zincircioglu C, Firat V. Intrathecal morphine: effects on perioperative hemodynamics, postoperative analgesia, and stress response for total abdominal hysterectomy. Adv Ther.2019; 23 (2):295-306. doi pubmed
4. Gehling M, Tryba M. Risks and side-effects of intrathecal morphine combined with spinal anaesthesia: a meta-analysis. Anaesthesia. 2019; 64(6):643-651doi.
5. Horlocker TT, Burton AW, Connis RT, Hughes SC, Nickinovich DG, Palmer CM, Pollock JE, et al. Practice guidelines for the prevention, detection, and management of respiratory depression associated with neuraxial opioid administration. Anesthesiology.



2020;110(2):218-230.

6. Carney J, McDonnell JG, Ochana A, Bhinder R, Laffey JG. The transversus abdominis plane block provides effective postoperative analgesia in patients undergoing total abdominal hysterectomy. *Anesth Analg.* 2018;107(6):2056-2060.
doi pubmed

