

Effect of Maya's Abdominal Massage on Low Back Pain and Quality of Life among Women with Uterine Prolapse.

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Abstract

Background: Pelvic organ prolapse represents a considerable concern in the realm of public health, exerting an influence on the overall quality of life by imposing restrictions on physical, social, and sexual activities, in addition to inducing psychological distress. **Aim:** was to examine the effect of Maya's abdominal massage on low back pain and quality of life among women with uterine prolapse. **Research design:** A quasi-experimental design was adopted. **Setting:** This research was carried out at the New Obstetrics and Gynecology Hospital in Mansoura, Dakahlia Governorate, Egypt. **Subjects:** A purposive sample of 100 women was selected in accordance with determined criteria. **Tools:** Three tools were used, a structured interview questionnaire, visual analogue scale, and prolapse quality of life scale. **Results:** There were highly statistically significant differences in the level of low back pain intensity and improvement prolapse quality of life of women between the study and control groups ($p < 0.001$) at 8 weeks and 12 weeks follow-up post-intervention. **Conclusion:** The findings concluded that Maya's abdominal massage administered over three months, significantly improved low back pain and the quality of life in women experiencing stage I or II uterine prolapse. **Recommendation:** It is suggested to raise awareness of women regarding benefits of Maya's abdominal massage for women with uterine prolapse.

Keywords: Maya's Abdominal Massage, Low Back Pain, Quality of Life, Women with Uterine Prolapse.

Introduction

Uterine prolapse (UP) constitutes a specific manifestation of pelvic organ prolapse (POP) and stands as a reproductive health condition that commonly affects women across various age groups, also referred to as descensus or procidentia. It is characterized by the descent of the uterus from its normal position to locations either inside or outside the vaginal introitus. Uterine prolapse arises when the pelvic floor muscles and supporting ligaments undergo stretching and weakening, thereby failing to provide adequate support for the uterus (Chen & Thompson, 2022). Globally approximately 50% of women encounter pelvic organ prolapse (POP), with only 10–20% of them opting for medical assistance (Weintraub et al., 2020).

Several factors contribute to the weakening of pelvic muscles, such as the loss of muscle tone due to menopause, estrogen deficiency, pregnancy, vaginal childbirth (especially after multiple or large babies over 4.5 kg), obesity, chronic cough, and constipation or straining, repeated heavy lifting, smoking, a family history

of weak connective tissue, and previous pelvic surgeries (Ferri, 2022; Chen & Thompson, 2022; Badacho et al., 2022).

The severity of UP varies, depending on the extent of weakness exhibited by the supporting muscles of the uterus. The stages of uterine prolapse are classified as follows: stage I involves the descent of the uterus into the upper part of the vagina; Stage II entails the uterus falling into the lower part of the vagina; Stage III is characterized by the uterus protruding from the vagina, and stage IV signifies the complete protrusion of the uterus outside the vagina. Stages I & II can be relieved by non-pharmacological interventions but stages III & IV require surgical intervention (Merck Manual Professional Version, 2022; National Health Service, 2022).

In its milder forms, uterine prolapse may not manifest obvious symptoms. Nonetheless, as the uterus progressively deviates from its anatomical position, it exerts pressure on adjacent pelvic organs like the bowel or bladder, leading to symptoms including sensations of heaviness, fullness, or pressure within the pelvic region,

pelvic pain, low back pain, vaginal bleeding or increased discharge, dyspareunia, the sensation of sitting on a ball or experiencing uterine tissue descending through the vaginal opening, vaginal tissue weakening, constipation, urinary incontinence, frequent urination, urinary urgency, and cystitis. These symptoms tend to worsen during prolonged standing or walking periods, as well as during coughing and sneezing, due to increased pressure on the pelvic muscles (Rogers & Fashokun, 2022).

Low back pain (LBP) is characterized by localized discomfort in the lumbar region, presenting with or without manifestations extending to the extremities distal to the affected area. Low back pain represents the most common symptom among females with uterine prolapse. It arises due to the internal pressure exerted by uterine tissue against the pelvic muscles, leading to muscular soreness and a sensation akin to a protrusion (Rogers & Fashokun, 2022; Cleveland clinic, 2022).

Although POP does not pose a threat to life, it is linked to considerable morbidity. Women suffering from POP experience significant distress and a decline in quality of life, leading to physical, psychological, social, domestic, occupational and sexual constraints. This detrimentally impacts their capacity to work and generate income. Uterine prolapse can impede regular activities and cause discomfort, prompting healthcare providers to intervene once symptoms start interfering with daily routines (Sánchez-Sánchez et al., 2020; Ali et al., 2022; Alshenqeti et al., 2022).

Nurses can fulfill a distinct role in the management of pelvic organ prolapse (POP), particularly uterine prolapse (UP), by engaging in continuous assessment, examination, and support of women experiencing prolapse. They can also empower these women by education to effectively manage and cope with their conditions. Moreover, nurses can develop strategies to approach women with prolapse, provide education on non-pharmacological interventions such as pelvic floor muscle training (e.g Kegel's exercises) to support the uterus and massage (e.g Maya's abdominal massage) (National Institute of Diabetes and Digestive and Kidney Diseases, 2021; Cleveland Clinic,

2022; Rogers & Fashokun, 2022; Arvigo, 2023).

The Arvigo Technique of Maya's Abdominal Massage was conceived in Belize by Dr. Rosita Arvigo. Maya's abdominal massage also referred to as Womb massage, is recognized as a conservative treatment involving gentle external massage techniques. This is a unique therapeutic approach that specifically targets the central importance of the abdomen in maintaining the overall health and wellness of the body (Arvigo, 2023).

The mechanism of Maya's abdominal massage aims to enhance the circulation of blood, lymph, nerve impulses, and chi (vital energy) to the abdominal organs. Through the promotion of circulation, these methods facilitate the transportation of increased levels of oxygen and essential nutrients to the organs, thereby supporting their optimal operation and regeneration. The augmentation of blood flow also assists in the elimination of harmful substances and metabolic byproducts, thereby fostering a healthier abdominal environment (Arvigo, 2024).

Maya's abdominal massage focuses on the correct alignment of the abdominal and pelvic organs. The treatment theory suggests that various digestive, reproductive, and urinary complications may stem from the dislocation of organs, a phenomenon referred to as prolapse or ptosis. This displacement has the potential to impede the regular circulation of blood and lymphatic fluid, resulting in a range of problems. By utilizing specific massage techniques, practitioners endeavor to delicately maneuver organs back to their original placement (Arvigo, 2024).

Maya's abdominal massage offers various advantages, such as strengthening pelvic floor muscles and ligaments, reducing pelvic, abdominal, and lower back pain, promoting regular menstrual cycles, alleviating pain during intercourse, decreasing stress and anxiety, improving digestion, alleviating constipation, minimizing occurrences of uterine, bladder, and yeast infections, as well as urinary incontinence. This intervention aids in restoring the uterus to its original position, alleviating symptoms, and enhancing the quality of life (PopSugar, 2021; Yanez, 2022).

Significance of the study, the high prevalence of uterine prolapse has not received adequate attention in the field of reproductive health. Determining the exact number of affected women is challenging due to the wide variation in symptoms and the reluctance of some women to discuss the condition with their healthcare providers. In the United States, around 200,000 POP surgeries are conducted annually, with an annual incidence rate of 1.5–1.8/1,000, and the highest incidence occurring in women aged 60 to 69 years. The identification of POP reaching as high as 50% of women after vaginal delivery (Raju & Linder, 2021).

The worldwide prevalence of uterine prolapse is estimated to range from 2% to 20%. The incidence of uterine prolapse within the United States is reported to be 11.4%, with Egypt reporting a prevalence of 56.3%. The prevalence of uterine prolapse, when assessed based on symptomatic presentation, is between 3% and 6%, and may reach as high as 50% when evaluated through vaginal examinations (Giannini et al., 2018; Thompson et al., 2018; Mishra & Shrestha, 2020; Badacho et al., 2022).

There was little research that discussed the management strategies for alleviating low back pain and improving the quality of life for women with first and second degrees of uterine prolapse by Maya's abdominal massage. Consequently, the present research was undertaken to examine the effect of Maya's abdominal massage on low back pain and quality of life among women with uterine prolapse.

The findings of the current research will provide obstetrics and gynecological nurses with evidence-based strategies to decrease low back pain and enhance the quality of life for women experiencing first and second-degree uterine prolapse.

Aim of the study:

Was to examine the effect of Maya's abdominal massage on low back pain and quality of life among women with uterine prolapse.

Hypotheses:

To reach this study's aim, the following hypotheses were formulated

- Women with stages I & II of uterine prolapse who practice Maya's abdominal massage will report decreased low back pain intensity than those who don't practice it.
- Women with stages I & II of uterine prolapse who practice Maya's abdominal massage will exhibit higher quality of life scores than those who don't practice it.

Operational definition:

Quality of Life in this study will include general health perception, the impact of prolapse, functional limitations, psychological constraints, personal restrictions, social limitations, sleep/energy, emotions and the level of intensity of symptoms. It will be measured by the Prolapse Quality of Life Scale (P-QOL).

Materials and method

Materials

Research design:

A quasi-experimental design, specifically the pretest-posttest non-equivalent control group design, was adopted in the present study to explore the effect of Maya's abdominal massage on low back pain and quality of life. This quasi-experimental design shares similarities with experimental research but is not true experimental research. The non-equivalent group's design, a variant of the between-subjects design, excludes the random allocation of participants to various conditions. In a pretest-posttest design, the evaluation of low back pain and quality of life as two dependent variables was conducted once before the administration of Maya's abdominal massage and three times after administration at the 4th week, the 8th week, and the 12th week.

Settings:

This research was carried out at the Gynecological Outpatient Clinic of the New Obstetrics and Gynecology Hospital in Mansoura, which is associated with Mansoura University Hospital, Dakahlia governorate, Egypt. The New Obstetrics and Gynecology Hospital provides free health services to Dakahlia governorate population and its surrounding governorates. The rationale behind selecting this specific setting lies in its identity as the primary university hospital within Dakahlia Governorate, where obstetrics and gynecology services are provided alongside a

significant influx of women who have been diagnosed with uterine prolapse. This particular characteristic of the setting offers the researcher an opportunity to ensure an adequate sample size for this study.

Subjects:

A purposive sample of 100 women with the stages I & II of uterine prolapse was selected by **determined criteria such as** women of reproductive age, specifically those aged 18 to 44 years, can read and write, diagnosed with stage I, or II of uterine prolapse, and suffered from low back pain. **Otherwise, women were excluded from this study with the following criteria as** pregnant women, suffered from any medical and other gynecological risk factors and /or conditions, diagnosed with stage III, or IV of uterine prolapse, receiving any pain relief medication for low back pain, performed any previous vaginal, perineal or anal surgery and abdominal surgery recently such as hiatal hernia or cesarean section and use an intrauterine device (IUD).

Taking into account a significance level of 5% and a study power of 80%, the determination of sample size can be calculated using the subsequent formula:

$$n = \frac{(Z\alpha/2 + Z\beta)^2 \times 2(SD)^2}{d^2}$$

Where, SD = standard deviation obtained from the previous study; $Z\alpha/2$, for 5% this is 1.96; $Z\beta$, for 80% this is 0.84 and d, for the expected difference. Therefore,

$$n = \frac{(1.96 + 0.84)^2 \times 2(15.2)^2}{(8.51)^2} = 50.0$$

This equation is used for non-randomization and explores the number in each group.

- Group I (the study group) consisted of 50 women with stages I & II of uterine prolapse who were directed to engage in Maya's abdominal massage.
- Group II (the control group) consisted of 50 women with stages I & II of uterine prolapse who followed routine hospital care.

Tools:

Three tools were gathered for the collection of data

Tool: A structured interview questionnaire:

This tool was designed and utilized by the researcher following a thorough examination of recent and pertinent literature to gather the ensuing data; it consisted of three parts:

The first part is bio-socio-demographic data including age, marital status, occupation, educational level, residence, and body mass index. **The second part** is obstetric history including gravidity, parity, mode of previous deliveries, and complications accompanying previous pregnancies, deliveries, and postpartum, and sexual history including regularity in sexual intercourse. **The third part**, Assessment of uterine prolapse history consists of age at diagnosis of uterine prolapse, family history of uterine prolapse, risk factors of uterine prolapse, duration of uterine prolapse complaint, symptoms associated with uterine prolapse such as heaviness on pelvic area, increase vaginal discharge, dyspareunia, constipation, urinary incontinence, and discomfort walking. In addition to the characteristics of low back pain as the onset of pain, type, frequency, it's associated physical and psychological symptoms, aggravating factors, and relieving factors.

Tool (II): The Visual Analogue Scale (VAS):

First introduced in 1921 by Hayes and Patterson, this tool is among the pain assessment measures that were adapted by the researcher. Comprising a self-administered apparatus featuring a horizontal line for the subjective evaluation of low back pain, it involves a 10-point numerical scale. This scale is indicative of pain intensity, where zero indicates the absence of pain and ten denotes the utmost level of pain. Within the continuum of these two extremes, descriptors such as mild, moderate, and severe are allocated to every 3 cm increment. Women were instructed to place a mark on the line at the position corresponding to the intensity of their pain for the evaluation of pain severity (Karcioglu Topacoglu, 2018; Alghadir, 2018; Delgado et al., 2018).

The total score spanned from 0 to 10, categorized as follows: no pain (0), mild pain (1-3), moderate pain (4-6), severe pain (7-9), and unbearable pain (10).

Tool (III): Prolapse Quality of Life Scale (P-QOL):

It was developed by Lenz et al, (2009). The tool was adapted and utilized by the researcher. The P-QOL survey was comprised of 9 main categories with 20 questions, encompassing various aspects such as general health perception (one question such as how would you describe your health at present), the impact of prolapse

(one question as how much do you think your prolapse affects your life), the functional limitations (two questions as to what extent does your prolapse affect your household tasks and does your prolapse affect your job or your normal daily activities outside the home).

Psychical constraints (two questions as does your prolapse affect your physical activities and does your prolapse affect your ability to travel), social limitations (three questions as does your prolapse limit your social life, does your prolapse limit your ability to see/visit friends, and does your prolapse affect your family life), personal restrictions (two questions as does your prolapse affect your relationship with your partner and does your prolapse affect your sex life).

Emotions (three questions as does your prolapse make you feel depressed, does your prolapse make you feel anxious or nervous and does your prolapse make you feel bad about yourself), sleep/ energy (two questions as does your prolapse affect your sleep and do you feel worn-out/tired) and the level of intensity of symptoms (four questions as urinary leakage associated with a strong desire to pass urine, discomfort in the vagina which is worse when standing and relieved by lying down, constipation and lower backache worsens with vaginal discomfort).

Quality of Life Scale Scoring System:

Each item is evaluated utilizing a Likert 3-point scale (non/not at all, little/ slightly, moderate, A lot) ranging from (0) non/not at all, (1) little/ slightly, (2) moderate, and (3) A lot. The final score fluctuates between 0 and 60. The diversity of various subscales is established by the quantity of items included in the scale. In each category, the mean score is assessed by dividing the number of items answered by the total number of items presented.

- High quality of life: <60% of the total score for quality of life.
- Moderate quality of life: 60-75% of the total scores for quality of life.
- Low quality of life: >75% of the total score for quality of life.

Validity and reliability of the tools:

A jury of three experts in the Obstetrics & Gynecologic nursing field evaluated the tools for content validity, leading to necessary adjustments.

Tools (II) and (III) underwent a reliability assessment using Cronbach's Alpha test, with satisfactory results of 0.901 and 0.897 respectively.

Ethical consideration:

Official permission was obtained from the Committee of Ethics Scientific Research at the Faculty of Nursing, Mansoura University, to validate the tools and the study. In addition, women granted their written informed consent after a comprehensive elucidation of the research's objectives and significance. The researcher underscored the voluntary nature of participation, allowing women to withdraw without the need for justification. Women were guaranteed the confidentiality of their personal information, their right to privacy, and the protection of data integrity.

Pilot study:

A pilot study involving 10% of the study sample (10 women) was conducted separately from the principal study sample to assess the tools' utility and comprehensibility, as well as to estimate data collection time requirements. Following that, essential modifications were implemented.

METHOD

The study was accomplished following a series of defined phases:

Preparatory phase:

- The researcher participated in a four-day (24-hour) training workshop on Maya's abdominal massage at the Arab African Union, the Supreme Body for Complementary Medicine, which is affiliated with the Ministry of Culture and Investment in the Cairo governorate, where they obtained an accredited certification.
- Tool (I) was designed by the researcher following a comprehensive analysis of contemporary and relevant literature. The other tools (II) and (III) were adapted and translated into Arabic for data collection purpose.
- Approval from the vice dean of graduate studies and research at the Faculty of Nursing, Mansoura University, was presented to the relevant authorities in the study setting to seek their authorization for the collection of data, following a detailed explanation of the study's objectives.

Assessment phase:

- At the commencement of the study, the researchers encountered the women during their wait at the outpatient gynecological clinic. They introduced themselves and provided a detailed explanation regarding the title and objectives of the research. Subsequently, each woman was individually interviewed by the researchers to complete tool (I). The length of time required to conduct the interview ranged from 20 to 30 minutes typically, based on women's comprehension level and their promptness in answering the questions.
- The researchers evaluated low back pain and quality of life for both groups before practicing Maya's abdominal massage in the study group and before the routine care in the control group using tools (II) & (III). The completion time of this evaluation took an average of 30 minutes according to the responsiveness of each woman.
- The sample was categorized into two distinct groups, the control group and the study group. This study commenced with the control group before the study group.

Implementation phase:

- The data collection process spanned over 9 months, beginning in September 2023 and concluding in May 2024.
- For the control group followed the routine hospital procedures aimed at weight reduction and prevention of constipation, chronic cough, as well as lifting of heavy objects and engaging in heavy work.
- For the study group, the researchers met every woman individually in examination room of the outpatient gynecological clinic which is a clean, well-ventilated environment, devoid of any distractions, and provided detailed explanations and demonstrations on how to perform Maya's abdominal massage through a combination of PowerPoint presentations, videos, and live demonstrations while the woman observed and these instructional materials were sent via her WhatsApp.
- Instructions were given to the women to void their bladder, wear loose clothing, recline on their back with a pillow supporting their head and knees, slightly bend their knees, take deep breaths for relaxation, join their hands together with thumbs tucked under each other, and align all eight fingers closely while maintaining a relaxed body posture.

The steps of Maya's abdominal massage: (PopSugar, 2021; Yanez, 2022)

- Using the index fingers, one should identify the pubic bone and gently rest the fingers against it. The eyes should then be closed, and one should carefully explore the area until locating a slight recess, which will serve as the initial point. Placing the index fingers on this recess, proceed to apply pressure and sink deeply into the supple tissues of the pelvis, just above the pubic bone, ensuring a thorough massage. The motion should be directed upwards towards the umbilicus, repeated approximately 9-10 times.
- Using the pinky fingers (little finger), position one on the pubic bone and the other on the hip bone, locating the midpoint that should feel soft and non-intrusive. Maintaining this hand placement, gently stroke towards the center and slightly upwards, creating a curved motion resembling the letter "J," and replicate this procedure on the opposite side as well.
- Perform circular motions over the inguinal area, moving upwards in the direction of the belly button with minimal pressure applied, ensuring a light touch. Approximately four fingers above the belly button, continue with light circular motions.
- Beneath the sternum, position the fingertips facing downward, and firmly press towards the belly button, repeating this action 9-10 times. Keeping the fingers aligned with the belly button, press beneath the ribs, angling slightly towards the belly button, and replicate this process on the other side.
- After the completion of the explanation, each woman was requested to re-demonstrate the procedure until the researchers ascertained that she was proficient in independently demonstrating the technique.
- Women were advised to consume ample amounts of water to enhance bodily hydration, facilitate the healing process, and practice Maya's abdominal massage twice daily for 10 minutes day and night for three months, except five days before and during menstruation. During this time, the massage can be gently continued on the lower abdomen and at a similar pace on the upper abdomen.
- Furthermore, the woman was directed to refrain from experiencing constipation, avoid lifting

heavy objects, steer clear of chronic cough, and uphold a weight that is considered normal and optimal.

- Subsequently, the researchers maintained contact with the women via phone or WhatsApp to address any problem that arose during the follow-up period.

Evaluation phase:

- The researchers reevaluated low back pain and quality of life for each group three times: first follow-up at the 4th week, second follow-up at the 8th week, and third follow-up at the 12th week utilizing tools (II) and (III).
- Effect of Maya's abdominal massage on low back pain and quality of life was established by comparing the scores for low back pain and quality of life scales between the two groups before and after the intervention.

Statistical analysis:

All statistical computations were carried out utilizing SPSS version 25 for Windows. Continuous data, which demonstrated normal distribution, were exhibited as mean \pm standard deviation (SD). Categorical data were depicted as Frequency and percentages. The Chi-square test was utilized for the analysis of categorical variables. The internal consistency of the questionnaires utilized in the research was evaluated through reliability testing. Statistical significance was determined at a p-value below 0.05.

Results:

Table (1) reveals that no statistically significant differences were found between the two groups' bio-socio-demographic characteristics ($p > 0.05$). The mean age of women in the study and control groups was $(39.0 \pm 4.3$ and 40.2 ± 3.4 respectively). Also, this table demonstrates that (54% & 50% respectively) of women in the study and control groups were housewives and obese. Regarding the educational level of women, it is obvious that (60% & 44% correspondingly) of them in the study and control groups had secondary education. In addition, (84% & 80% respectively) of women in the study and control groups were married and from rural areas.

Table (2) illustrates that there were no statistically significant differences in the obstetric history of women between the two groups ($p > 0.05$). It is obvious from this table that (60%) of both groups got pregnant four times or more

and (90% and 80% respectively) of women in the study and control groups gave birth three times or more. Also, this table shows only (6% and 10% correspondingly) of them in the study and control groups had previous multiple pregnancies. Regarding the mode of previous deliveries, it is clear that (76% & 70% respectively) of women in the study and control groups had vaginal delivery. Furthermore, this table reveals that (68% & 80% respectively) of women in the study and control groups had previous pregnancy complications, and (86% & 78% respectively) of them in the study and control groups had previous delivery complications and the most common type of delivery complications was the prolonged labor for (35% and 36% respectively) for women in the study and control groups. Also, this table show that (40% & 50% correspondingly) of in the study and control groups had previous postpartum complications and the most common complication was postpartum hemorrhage for (90% and 80% respectively) for women in the study and control groups.

Table (3) demonstrates that there were no statistically significant differences in the sexual and uterine prolapse history of women between the two groups ($P > 0.05$). (71.4% and 82.5% respectively) of women in the study and control groups had irregular sexual intercourse. In addition, (58% & 74% respectively) of them in the study and control groups were at the age of 39 – 44 years at the diagnosis of uterine prolapse. Furthermore, (50% & 64% respectively) in the study and control groups had a family history of uterine prolapse. Moreover, this table reveals that the risk factors of uterine prolapse of women in the study and control groups were heavy lifting (90% & 92% respectively), obesity (54% & 50% respectively), and chronic constipation (52% & 40% respectively). Also, this table illustrates that (76% & 74% respectively) of women in the study and control groups had uterine prolapse from 1-2 years. Additionally, it is obvious that women in the study and control groups had pelvic heaviness (92% & 88% respectively), stress urinary incontinence (70% & 80% respectively), dyspareunia (60% & 70% respectively), and discomfort when walking for (50% & 60% respectively).

Figure (1) shows the distribution of the stages of uterine prolapse in control and study groups. It was found that 62% and 66% of the study and control groups respectively had stage II of uterine

prolapse, while 38% and 34% of the study and control groups respectively had stage I of uterine prolapse. There no statistically significant differences between the control and study groups regarding the stages of uterine prolapse.

Table (4) clarifies that no statistically significant differences were found between the two groups' low back pain (LBP) history ($p > 0.05$). It is obvious from this table that women in the study and control groups (92% and 88% respectively) started to complain of LBP with a diagnosis of uterine prolapse, (88% and 90% respectively) had a heaviness pain, and (68% and 80% respectively) had intermittent pain. In addition, this table shows that (79.3% and 85.7% respectively) of them in the study and control groups had dizziness associated with the pain. While concerning the psychological symptoms associated with pain, women in the study and control groups (84% and 80% respectively) had worry, (80% and 70% respectively) had mood changes, and (62% and 70% respectively) had constant fear. Moreover, the women in the study and control groups (84% and 90% respectively) and (68% and 80% respectively) reported prolonged standing and heavy lifting as aggravating factors of pain. Regarding the relieving factors of pain, the women in the study and control groups (46% and

58% correspondingly) reported resting and lying down, and (54% and 40% respectively) reported taking analgesics.

Table (5) manifests the low back pain intensity of women in the study and control groups as measured by visual analogue scale (pre-intervention, and at 4 weeks, 8 weeks, and 12 weeks follow-ups post-intervention). It is obvious from this table that there were no statistically significant differences in the low back pain (LBP) intensity of women between the two groups ($p > 0.05$) pre-intervention, and at 4 weeks follow-up post-intervention while there were highly statistically significant differences in LBP intensity of women between the two groups ($p < 0.001$) at 8 weeks, and 12 weeks follow -ups post-intervention.

Table (6) displays quality of life of women in the study and control groups (pre-intervention, at 4 weeks, 8 weeks, and 12 weeks follow-ups post-intervention). It is obvious from this table that there were no statistically significant differences in quality of life of women between the two groups ($p > 0.05$) pre-intervention, and at 4 weeks follow - up post-intervention while there were highly statistically significant differences in quality of life of women between the two groups ($p < 0.001$) at 8 weeks, and 12 weeks follow - ups post-intervention.

Table 1. Distribution of Women in Control and Study Groups According to Their Bio-socio-demographic Characteristics N=100

Bio-socio-demographic Characteristics	Control group (n=50)		Study group (n=50)		Chi - Square	
	Freq.	%	Freq.	%	X ²	P
Age (Years)						
25 –	3	6.0	7	14.0		
32 –	10	20.0	12	24.0		
39 – 44	37	74.0	31	62.0	2.311	0.315
Mean ±SD	40.2 ±3.4		39.0 ±4.3			
Occupation						
Housewife	25	50.0	27	54.0		
Worker	15	30.0	16	32.0		
Employee	10	20.0	7	14.0	0.639	0.727
Educational Level						
Preparatory	18	36.0	16	32.0		
Secondary	22	44.0	30	60.0		
University or higher	10	20.0	4	8.0	3.920	0.141
Marital status						
Married	47	94.0	49	98.0		
Divorced	2	4.0	1	2.0		
Widowed	1	2.0	0	0.0	1.375	0.502
Residence						
Urban	10	20.0	8	16.0		
Rural	40	80.0	42	84.0	0.271	0.603
BMI (kg/m²)						
Normal weight (18-24.9 kg/m ²)	5	10.0	4	8.0		
Overweight (25-29 kg/m ²)	20	40.0	19	38.0		
Obese (29.9-35 kg/m ²)	25	50.0	27	54.0	0.214	0.898

Table 2. Distribution of Women in Control and Study Groups According to Their Obstetric History N=100

Obstetric History	Control group (n=50)		Study group (n=50)		Chi – Square	
	Freq.	%	Freq.	%	X ²	P
Gravidity						
Twice	5	10.0	4	8.0		
Three times	15	30.0	16	32.0		
Four times or more	30	60.0	30	60.0	0.143	0.931
Occurrence of previous pregnancies complications						
No	10	20.0	16	32.0		
Yes	40	80.0	34	68.0	1.871	0.171
Type of previous pregnancies complications	(n=40)		(n=34)			
Bleeding during pregnancy	14	35.0	9	26.5		
Hypertension	8	20.0	8	23.5		
Gestational diabetes mellitus	8	20.0	9	26.5		
Preeclampsia	5	12.5	8	23.5		
Anemia	5	12.5	0	0.0	6.394	0.172
Parity						
Twice	10	20.0	5	10.0		
Three or more	40	80.0	45	90.0	1.961	0.161
Mode of previous deliveries						
Vaginal delivery	35	70.0	38	76.0		
Cesarean section	15	30.0	12	24.0	0.457	0.499
Occurrence of previous deliveries complications						
No	11	22.0	7	14.0		
Yes	39	78.0	43	86.0	1.084	0.298
Type of previous deliveries complications	(n=39)		(n=43)			
Prolonged labor	14	35.9	15	34.9		
Preterm labor	4	10.3	6	13.9		
Bleeding during labor	10	25.6	12	27.9		
Perineal tear	11	28.2	10	23.3	0.470	0.925
Occurrence of previous postpartum complications						
No	25	50.0	30	60.0		
Yes	25	50.0	20	40.0	1.010	0.315
Type of previous postpartum complications	(n=25)		(n=20)			
Postpartum hemorrhage	20	80.0	18	90.0		
Breast complications	5	20.0	2	10.0	0.846	0.358

Table 3. Distribution of Women in Control and Study Groups According to Their Sexual and Uterine Prolapse History N-100

Sexual and Uterine Prolapse History	Control group (n=50)		Study group (n=50)		Chi – Square	
	Freq.	%	Freq.	%	X ²	P
Regularity in sexual intercourse	(n=47)		(n=49)		1.169	0.279
No	38	80.9	35	71.4		
Yes	9	19.1	14	28.6		
Age at diagnosis of uterine prolapse					2.875	0.238
25 –	4	8.0	7	14.0		
32 –	9	18.0	14	28.0		
39 – 44	37	74.0	29	58.0		
Risk factors of uterine prolapse in this study**						
Obesity	25	50.0	27	54.0	0.160	0.689
Chronic constipation	20	40.0	26	52.0	1.449	0.229
Chronic cough	10	20.0	5	10.0	1.961	0.161
Heavy lifting	46	92.0	45	90.0	0.122	0.727
previous multiple pregnancy	5	10.0	3	6.0	0.543	0.461
Family history	32	64.0	25	50.0	1.999	0.157
Duration of uterine prolapse complain (year)					1.154	0.562
< 1	11	22.0	8	16.0		
1 – 2	37	74.0	38	76.0		
> 2	2	4.0	4	8.0		
Symptoms associated with uterine prolapse**						
Pelvic heaviness	44	88.0	46	92.0	0.444	0.505
Increased vaginal discharge.	20	40.0	13	26.0	2.216	0.137
Dyspareunia	35	70.0	30	60.0	1.099	0.295
Constipation	25	50.0	18	36.0	1.999	0.157
Urinary incontinence	40	80.0	35	70.0	1.333	0.248
Discomfort when walking	30	60.0	25	50.0	1.010	0.315

** Numbers are not mutually exclusive

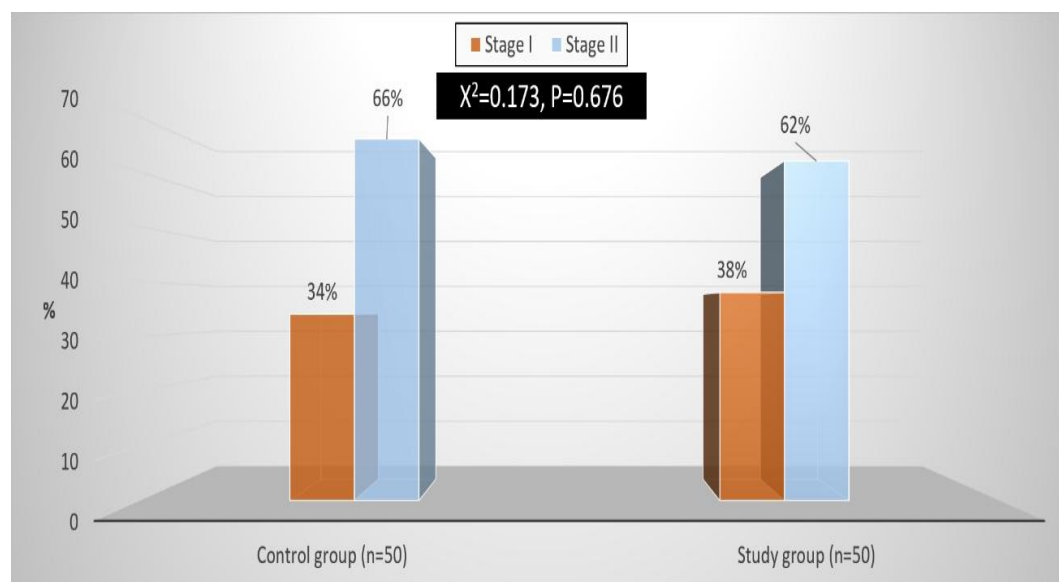


Figure (1): Distribution of the Stages of Uterine Prolapse in Control and Study Groups N=100

Table 4. Distribution of Women in Control and Study Groups According to Their Low Back Pain History N=100

Low Back Pain History	Control group (n=50)		Study group (n=50)		Chi – Square	
	Freq.	%	Freq.	%	X ²	P
Onset of pain						
With a diagnosis of uterine prolapse	44	88.0	46	92.0		
After a period from diagnosis of uterine prolapse	6	12.0	4	8.0	0.444	0.505
Type of Pain						
Throbbing	5	10.0	6	12.0		
Heaviness	45	90.0	44	88.0	0.102	0.749
Frequency of pain						
Constant	10	20.0	16	32.0		
Intermittent	40	80.0	34	68.0	1.871	0.171
Physical symptoms associated with pain**						
None	15	30.0	21	42.0	1.563	0.211
Dizziness	30	85.7	23	79.3	0.457	0.499
Weakness and malaise	15	42.9	11	37.9	0.160	0.690
Psychological symptoms associated with pain**						
None	7	14.0	5	10.0	0.379	0.538
Mood changes	35	70.0	40	80.0	1.333	0.248
Worry	40	80.0	42	84.0	0.271	0.603
Constant fear	35	70.0	31	62.0	0.713	0.398
Aggravating factors of pain**						
Heavy lifting	40	80.0	34	68.0	1.871	0.171
Constipation	15	30.0	10	20.0	1.333	0.248
Prolonged standing	45	90.0	42	84.0	0.796	0.372
Sitting in bad positions	5	10.0	8	16.0	0.796	0.372
Relieving factors of pain**						
None	5	10.0	3	6.0	0.543	0.461
Take rest and lying down.	29	58.0	23	46.0	1.442	0.230
Back massage	6	12.0	8	16.0	0.332	0.564
Take analgesic	20	40.0	27	54.0	1.967	0.161
Applying warm water bottle or heating pad on low back area	10	20.0	12	24.0	0.233	0.629
Take a warm bath	5	10.0	8	16.0	0.796	0.372

** Numbers are not mutually exclusive

Table 5. Distribution of Women in Control and Study Groups According to Low Back Pain Intensity as Measured by Visual Analogue Scale N=100

Low Back Pain Intensity VAS	Control group (n=50)		Study group (n=50)		Chi – Square	
	Freq.	%	Freq.	%	X ²	P
Pre – intervention						
Moderate pain	10	20.0	7	14.0		
Severe pain	40	80.0	43	86.0	0.638	0.424
4 weeks follow – up						
Moderate pain	15	30.0	18	36.0		
Severe pain	35	70.0	32	64.0	0.407	0.523
8 weeks follow – up						
No pain	0	0.0	0	0.0		
Mild pain	0	0.0	15	30.0		
Moderate pain	20	40.0	35	70.0		
Severe pain	30	60.0	0	0.0	49.091	<0.001**
12 weeks follow – up						
No pain	0	0.0	12	24.0		
Mild pain	0	0.0	38	76.0		
Moderate pain	35	70.0	0	0.0		
Severe pain	15	30.0	0	0.0	100.000	<0.001**

(**) P is highly statistically significant if ≤ 0.001

Table 6. Distribution of Quality of life among women in Control and Study Groups N=100

	Control group (n=50)		Study group (n=50)		Chi – Square	
	Freq.	%	Freq.	%	X ²	P
Pre – intervention						
High quality of life	5	10.0	4	8.0	4.194	0.123
Moderate quality of life	15	30.0	7	14.0		
Poor quality of life	30	60.0	39	78.0		
4 weeks follow – up						
High quality of life	5	10.0	8	16.0	0.796	0.671
Moderate quality of life	15	30.0	14	28.0		
Poor quality of life	30	60.0	28	56.0		
8 weeks follow – up						
High quality of life	10	20.0	42	84.0	44.835	<0.001**
Moderate quality of life	20	40.0	8	16.0		
Poor quality of life	20	40.0	0	0.0		
12 weeks follow – up						
High quality of life	15	30.0	50	100.0	53.846	<0.001**
Moderate quality of life	30	60.0	0	0.0		
Poor quality of life	5	10.0	0	0.0		

(**) *P is highly statistically significant if ≤ 0.001*

Discussion

Uterine prolapse can significantly influence an individual's physical, psychological, and social well-being. A range of interventions may be employed to decrease the risk of uterine prolapse or to prevent a mild prolapse from worsening. Among these interventions is Maya's abdominal massage. In the absence of adequate support and effective communication with healthcare professionals, women may perceive themselves as enduring this condition in isolation (Jayanthi et al., 2022). Therefore, the primary objective of this research was to examine the effect of Maya's abdominal massage on low back pain and quality of life among women with uterine prolapse.

The study's major findings were supported the study's hypotheses that: Hypothesis 1: Women with stages I & II of uterine prolapse who practice Maya's abdominal massage will report decreased low back pain intensity than those who don't practice it. Hypothesis 2: Women with stages I & II of uterine prolapse who practice Maya's abdominal massage will exhibit higher quality of life scores than those who don't practice it.

Our study found that the majority of women with uterine prolapse had a history of heavy lifting activities. This is a logical finding because the results of the current study illustrate that the majority of women live in

rural areas. This observation aligns with three studies conducted by Samimi et al. (2021), Parvathavarthini K., Vanusha A. (2019), and Farag et al. (2019) who reported that, more than half of studied sample had a history of heavy lifting activities and they identified that the prevalence of women with uterine prolapse lived in rural areas. The reason for this occurrence can be attributed to women lived in rural areas had limited access to medical facilities and the physically demanding nature of activities such as farming and heavy lifting, which leave women with insufficient rest time.

The findings of the present investigation have elucidated that the majority of the women experienced pelvic heaviness, stress urinary incontinence, two-thirds of them had dyspareunia, and half of them had discomfort while walking. These findings were consistent with a randomized controlled trial conducted by Glazener et al. (2017). The researchers reported that, a majority of the women described their primary symptom of uterine prolapse as dyspareunia, pelvic heaviness and discomfort while walking. This could be explained by uterine prolapse causing the weakening of the tissues and the muscles responsible for supporting the pelvic organs that lead to the appearance these symptoms (Rogers & Fashokun, 2022).

In accordance with the ongoing investigation, it was demonstrated that there were highly statistically significant differences in the low back pain (LBP) intensity of the studied women between the two groups ($p < 0.001$) at 8 weeks and 12 weeks post-intervention. This finding was consistent with the findings of This result was consistent with **Soliman et al. (2023)** who found that, about one-third of women had moderate low back pain and there were statistically significant differences before after three months of practicing Mayan massage technique.

This result is similar to the study of **Farag et al. (2019)** who reported that, the majority of the women had mild low back pain with highly statistically significant differences in the low back pain before, after and three months of the intervention ($p = 0.001$). Also, this study matches with **Ali et al. (2015)**, who identified that, less than half of the women being studied experienced moderate low back pain prior to the intervention. Following the massage intervention by Maya, the percentage of those experiencing mild low back pain increased to more than half of them after eight weeks. Subsequently, by the twelfth week, all the subjects had no occurrences of low back pain, highlighting significantly statistical differences of uterine prolapse symptoms both before and after the intervention at 8 and 12 weeks. This observed outcome can be attributed to Maya's abdominal massage technique aiding in the realignment of internal genital organs by softening deep muscle spasms, releasing tension in trunk and diaphragm muscles, and improving blood circulation in the abdominal region and vital organs (**Arvigo, 2024**).

The findings of the current study demonstrated highly significant differences in prolapse-related quality of life among the women in the two groups ($p < 0.001$) at 8 weeks and 12 weeks post-intervention follow-ups. These results correspond with a study conducted by **Soliman et al. (2023)**, which indicated that symptoms associated with uterine prolapse adversely impact women's quality of life. Notably, after three months of engaging in Mayan abdominal massage, women experienced a significant enhancement in their quality of life, evidenced by statistically significant improvements in general health and social functioning among the women ($P < 0.05$). Furthermore, there were also highly statistically significant advancements in

additional domains subsequent to the intervention, including the effects of prolapse, role limitations, physical limitations, emotional distress, and energy/sleep ($P = 0.001$). This may be attributed to the effect of Maya's abdominal massage on the positioning and health of pelvic and abdominal organs, thereby enhancing their functioning through alleviation of congestion. This practice is also known to improve various aspects such as physical, psychological, sexual, and social functions, thereby contributing to an overall enhancement in the quality of life (**Arvigo, 2023; Yanez, 2022**).

Conclusion

The findings concluded that Maya's abdominal massage administered over three months, significantly improved low back pain and the quality of life in women experiencing stage I or II uterine prolapse.

Recommendations

In light of the findings of the current study, we recommended the following:

- Apply Maya's abdominal massage as a non-pharmacological strategy for the management of symptoms related to uterine prolapse and for the enhancement of quality of life.
- Raise awareness of women regarding the benefits of Maya's abdominal massage for women with uterine prolapse.
- Integrate Maya's abdominal massage into the policies of Maternity healthcare facilities, thus enhancing clinical care practices.
- Incorporate Maya's abdominal massage with other supportive interventions to alleviate uterine prolapse symptoms and enhance the quality of life among women.
- Integrate Maya's abdominal massage into the obstetrics and gynecology curricula across various educational settings to relieve symptoms of uterine prolapse and improve the quality of life.
- Provide a program for high-risk women about the prevention of uterine prolapse

Further researches:

- Evaluate women's satisfaction with Maya's abdominal massage as a successful low-cost,

low-technology intervention in reliving I and II degree prolapse.

- Repeat the current investigation in a multicenter setting with a larger sample size to generalize the results.
- Assess women's knowledge and practice regarding uterine prolapse symptoms and their management.
- Assess women's knowledge and practice to warding risk factors of uterine prolapse.

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