

Effect of Video Assisted Teaching Program on Premenopausal Women Knowledge and Practice regarding Pelvic Floor Muscle Exercises

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Abstract

Background: Urinary incontinence, loss of bladder control, is a common problem that may have a profound impact on quality of life. Women in their premenopausal period may find pelvic muscles are simply weaker than they were before. Pelvic floor muscle exercise education is a well acceptable therapy for urinary incontinence. **The aim was to** evaluate the effect of a video-assisted teaching program on premenopausal women's knowledge and practice regarding pelvic floor muscle exercises. **Subjects and method: Design:** A quasi-experimental research design was utilized to achieve the aim of this study. **Setting:** The study was conducted in the Obstetric Outpatient Clinic at Beni-Suef University Hospital. **Subjects:** A convenient sample included 60 premenopausal women were included in the current study within six months. **Three tools were used:** Tool I A structured interview questionnaire, Tool II premenopausal women's knowledge regarding pelvic floor muscle exercises (pre/post), and Tool III premenopausal women's self-reported practice regarding pelvic floor muscle exercises (pre/post). **Results:** The majority of premenopausal women reported that the main source of information regarding their knowledge was doctors. There was a positive significant correlation ($P=0.005$) between premenopausal women's knowledge and practice scores pre and post-video-assisted teaching program. There were highly significant improvements in premenopausal women's knowledge and self-reported practice regarding pelvic floor muscle exercises post-video-assisted teaching program ($P=0.005$). There was no association between the knowledge scores and the selected demographic variables (age, educational status, and place of residence) and clinical variables (parity, type of delivery, and urinary incontinence). **Conclusion:** The present study concluded there was an improvement in the knowledge and practice levels after the administration of a video-assisted teaching program on pelvic floor muscle exercises among premenopausal women. **Recommendations:** Educational program about pelvic floor muscle exercises should be taught for premenopausal women to avoid urinary incontinence.

Keywords: Knowledge, Pelvic floor muscle exercises, Practice, Premenopausal women.

Introduction:

Urinary incontinence, loss of bladder control, is a common problem that may have a profound impact on quality of life. The severity of urinary incontinence ranges from occasionally leaking urine when coughing or sneezing to having an urge to urinate that is so sudden strong. Women in their premenopausal period may find pelvic muscles are simply weaker than they were before. These muscles may not have enough strength to hold the sphincters close and may cause unwanted leakage of urine (**Urinary Incontinence News and Research, 2016**).

Pelvic floor exercises often also called Kegel exercises after their originator, Dr. Arnold Kegel is widely promoted as the starting point for building pelvic floor strength. Research has shown that with regular exercise, women can reduce or completely overcome the symptoms of weak pelvic floor muscle (**Moser et al., 2018**).

A regime of pelvic floor exercises, introduced earlier in life, will also prevent many of the problems associated with weak pelvic floor muscles from emerging later. Estimates of the prevalence of urinary incontinence in women vary between 10% – 40% in most studies. Data from what is

probably the largest cross-sectional study of urinary incontinence in women suggest a gradual increase in prevalence with age to an early peak (Saeuberli. et al., 2018).

The problem of urinary incontinence, at the same time, affects the quality of life in private, social, and professional terms. This is expressed, among others, by a change in the patient's own and loved ones' lifestyle, limited sexual contacts, increased spending on pharmaceuticals and specialists to treat urinary incontinence, and resignation from social life and even work (Sharma et al., 2017).

A change in lifestyle and a decrease in social contacts were confirmed by 91.7% of female residents. On the other hand, 65% feel ashamed, 16.7% of women are worried about the lack of control over unexpected urine leakage, and 66.7% of respondents are worried about wet clothes. There is a high risk that these factors may have a negative impact on the mental health of patients (Arwinder et al., 2021).

In the prevention of incontinence, the most important role is medical personnel, whose task is to make patients aware of the most beneficial possibilities of primary prevention and the resources of modern medicine in urinary incontinence treatment (Zygmunt. et al., 2017). It is believed that incontinence is a very embarrassing and uncomfortable issue. Many women do not receive adequate treatment, as it turns out, not because of shame, but because of the lack of information from medical staff on the possibilities of receiving treatment, which will certainly improve the quality of life in the private, professional, and social spheres (Trupti et al., 2018).

Women in the prenatal and postnatal period should take particular care of physical activity, with particular emphasis on Kegel muscle training, which increases muscle tension and improves their functionality. Implementation of early preventive measures in young women may reduce the risk of this disease. That is why it is so important to mobilize women to change their lifestyle to a healthier one; to reduce body weight (especially the percentage of body fat ratio), to limit the use of stimulants, to prevent

constipation, and to use systematic physical activity (Park et al., 2019).

The theoretical basis for pelvic floor muscle exercise to treat and prevent stress urinary incontinence is based on the muscular changes that may occur after specific strength training. This change is supposed to be neural adaptation during the first six to eight weeks and muscle hypertrophy after a further period of strength training (Renuka, 2015). Herderschee et al., (2018) studied various approaches and elements of urine incontinence treatment and employed for basic pelvic floor muscle exercises, as it considerably reduces the intensity of involuntary urinary leaks, in long-term research of 24 out of 1583 women.

A strong and well-functioning pelvic floor can build structural support for the bladder and the urethra. In addition, a well-timed, fast and strong contraction may prevent urethral descent and close the urethra during an abrupt intra-abdominal pressure rise. Pelvic floor muscle training has been demonstrated to be effective in the prevention and treatment of stress urinary incontinence in the immediate postpartum period. Another study concluded that between the 8th and 16th week after delivery, a specially designed postpartum pelvic floor muscle training course was effective in increasing pelvic floor muscle strength and reducing urinary incontinence (Park et al., 2019).

Women would benefit from video-based training because it would help them expand and refine their existing skills and knowledge, resulting in better care. As new approaches to providing ongoing education, online learning, and video-assisted teaching modules have emerged (Safwat & Khorais, 2018).

Various teaching strategies, including lecture, demonstration, discussion, self-education, and video-assisted teaching strategies, are utilized to improve women's knowledge and practice. Electronically collecting, recording, storing, transmitting, and rebuilding a sequence of images representing scenes in motion is referred to as video. It also aids in the removal of linguistic barriers because images communicate without the use of words (Balasubramanian et al., 2018).

The video teaching method encourages women to learn since it employs sight, sound, and action to simplify complex themes and concerns. It can also give information in ways that verbal descriptions or speech alone cannot, and it can serve as a link between educational institutions. Nurses who have trouble reading, on the other hand, will profit from the film (Devi et al., 2019). In addition, video-assisted instruction is one of the most important emerging technologies for nurses, especially those who have conducted difficult treatments. The broadcaster's voice can be heard, which is a benefit of video-based education (Hassan, 2018).

Nurses have an important role in offering counseling and support to women to raise their responsibility for self-care and to address misconceptions. In addition, community and maternity nurses play a vital role in improving the quality of care by providing information, guidance, and support to pregnant women. At the same time, the nurse plays an important role in health education, assessment, counseling, and referrals (Hassan, 2018).

Significance of the study:

Urinary incontinence is involuntary urination (leakage of urine). About 200 million people suffer from this condition, and 60% of cases are concealed and untreated because of shame. It is estimated that an increasing number of young women and women of menopausal age will suffer from urinary incontinence. This disease occurs during the perinatal, premenopausal period, as a result of brain damage or an unhealthy lifestyle. However, the prospects of education yield better results when greater emphasis is laid on aspects of prevention. An estimated 50-70% of women with urinary incontinence fail to seek medical evaluation and treatment because of social stigma. Only 5% of individuals who are incontinent and 2% of nursing home residents who are incontinent receive appropriate medical evaluation and treatment (Venkatesan, 2019).

The use of video teaching methods in education can provide a simple and novel way to engage mothers in the care of their children today. Video teaching is an effective technique

of education that combines theory and practice (Devi et al., 2019).

Operational definitions:

Video assisted teaching program: refers to the planned teaching material of lecture combined with video with duration of 45 minutes on illness which including general concept, meaning, definition, causes, risk factors, myths and misconception, types, abnormal behavior, diagnosis, management and prevention.

Premenopausal women: refers to the time during which your body makes the natural transition to menopause, marking the end of the reproductive years. Premenopause is also called the menopausal transition. Women start premenopause at different ages. Signs of progression toward menopause included menstrual irregularity, sometime in your 40s. But some women notice changes as early as their mid-30s.

Pelvic floor muscle exercises: It is strengthen the muscles around your bladder, bottom, and vagina. Strengthening pelvic floor muscles can help urinary incontinence, treat pelvic organ prolapse, and make sex better too.

The study aim:

To evaluate the effect of video-assisted teaching program on premenopausal women knowledge and practice regarding pelvic floor muscle exercises through:

- Assessing the level of knowledge regarding pelvic floor muscle exercises among premenopausal women
- Assessing the level of practice regarding pelvic floor muscle exercises among premenopausal women
- Designing and implementing video-assisted structured teaching program on knowledge and practice regarding pelvic floor muscle exercises based on premenopausal women' actual needs
- Evaluating the effectiveness of video-assisted teaching programs on knowledge and practice regarding pelvic floor muscle exercises among premenopausal women

- Determining the correlation between knowledge and practice pre and post-video-assisted teaching program.

Research hypothesis:

- H1: Premenopausal women who will receive a video-assisted structured teaching program will have more satisfactory knowledge & adequate practices regarding pelvic floor muscle exercises after the program than before the program.
- H2: There was correlation between premenopausal women knowledge & practices regarding pelvic floor muscle exercises

The following four designs were used to discuss the current study's subjects and methods:

- I. Technical Design
- II. Operational Design
- III. Administrative Design
- IV. Statistical Design

Technical Design:

It includes items about research design, setting, subject, and data collection tools.

Research design:

A quasi-experimental research design was utilized to achieve the aim of this study. Patients self-select or are randomly assigned to one of many groups in a quasi-experimental study to examine the real effectiveness and safety of non-randomized factors (Maciejewski, 2020).

Setting:

The study was conducted in the Obstetric Outpatient Clinic at Beni-Suef University Hospital. The Obstetric Outpatient Clinics are on the ground floor of the outpatients settings. There was also a waiting space for women and a lecture room with enough seats, where the researchers interviewed the premenopausal women who had been recruited for this study. From Saturday through Wednesday, from 9 a.m. to 1 p.m., the obstetric outpatient clinics provide diagnostic and therapeutic services for expectant premenopausal women. These settings were chosen because they had a higher

women's prevalence rate; they serve the largest region of the population in Beni-Suef city, including rural and urban.

Subjects:

A convenient sample included 60 premenopausal women were included in the current study within six months and available at the time of data collection. Women their age less than 40 years, they are at risk or have urinary incontinence.

Data collection tool:

Tool (I): A structured interview questionnaire: It was developed by the researchers after reviewing the related literature and research studies (Venkatesan, 2019 and Trupti et al. 2018), it consisted of two parts:

Part one: It included four items related to demographic variables and obstetric history of the studied premenopausal women such as age, educational level, occupation, and residence

Part two: It included four items related to the obstetric history of the studied premenopausal women such as parity, type of delivery, abdominal pelvic surgery, history of urinary incontinence, and their source of information.

Tool (II): Premenopausal women' knowledge regarding pelvic floor muscle exercises (pre/post) (Venkatesan, 2019; Trupti et al. 2018; Urinary Incontinence News and Research, 2016): It was developed by the researchers to assess premenopausal women' knowledge regarding pelvic floor muscle exercises. It included (10) questions in the form of multiple-choice related to the introduction about pelvic floor muscle exercises, meaning of pelvic floor muscle exercises, and benefits and importance of pelvic floor muscle exercises.

The scoring system for premenopausal women's knowledge: The women's knowledge was verified with a model key response after they completed the interviewing questions. Therefore, correct answers were scored one point, and incorrect or do not know answers were scored zero. The total score varied from 0 to 10. Women with a total knowledge score of 60 percent or more

were regarded to have a satisfactory level of knowledge, while those with a score of less than 60 percent were judged to have an unsatisfactory level of knowledge.

Tool (III): Premenopausal women's self-reported practice regarding pelvic floor muscle exercises (pre/post):

It was developed by (Burns et al., 1990) to assess premenopausal women's self-reported practice regarding pelvic floor muscle exercises. It included techniques about pelvic floor muscle exercises, how many times to perform pelvic floor muscle exercises, and when to perform pelvic floor muscle exercises.

Scoring system:

Each item was given a score of two points for each step that was done correctly, one point for each step done incorrectly, and zero points for steps that were not done. If the answer was less than (50%) that was considered inadequate practice level and (50%) or above was considered adequate practice level.

Validity of the tools:

The tool's content validity was determined by a jury of five specialists' academics, two in the field of obstetrics and gynecology nursing, two experts in obstetrics and gynecology medicine, and one expert of community health nursing who reviewed the tools. They were also asked to assess the items in terms of completeness and clarity. No modifications were added to the tools.

Reliability of the tools:

The researchers used reliability to assess the tool's internal consistency. Cronbach's alpha test revealed that the structured interview questionnaire (the tool I) had a reliability of 0.95, tool II had a reliability of 0.87, and tool III had a reliability of 0.77.

Procedures of data collection:

Preparatory phase:

Books, journals, the internet, periodicals, and magazines were employed, as well as a review of the literature, diverse studies, and theoretical knowledge of the research subject. This also helped with the creation of the testing

tools and the creation of the video for the premenopausal women's teaching program.

To evaluate the effect of video-assisted teaching program on premenopausal women knowledge and practice regarding pelvic floor muscle exercises in prevention of urinary incontinence through:

Ethical considerations:

The premenopausal women gave their written approval in exchange for their assistance. Before beginning the trial, the premenopausal women were informed of the study's goal. They promised to keep the information private and only use it for research purposes. The researchers notified the participants that participation in the study is completely voluntary and that they can withdraw at any time.

A pilot study:

A pilot study of 10% of the sample (6 premenopausal women) was done to examine the clarity and feasibility of the research method; no changes were made. Premenopausal women who took part in the pilot were not included in the study.

Fieldwork:

- Data was collected over six months, commencing in August 2020 and ending in January 2021. Researchers collected data at the previously described setting twice a week, from 9 a.m. to 1 p.m.
- The Implementation of the study was carried out in three phases (assessment phase, implementation phase, and evaluation phase).

I- Assessment phase:

The researchers explained to premenopausal women the aim and expected outcomes of the study before collecting data, then asked them to complete the tools. The average time required for the completion of tools was around 35-45 minutes. The tools used for collecting data were used as pre and post-program (tool II, and tool III). Pre-testing tools were used to assess the premenopausal women's knowledge and practice level pelvic

floor muscle exercises in the prevention of urinary incontinence. The data collection tools were distributed to the studied women; pre-test to assess their knowledge and practice level before implementing video-assisted teaching program.

II- Implementation Phase:

Each group consisted of 8-9 premenopausal women throughout three sessions (1st session include pretest and applying booklet, 2nd session for videos assisted section and 3rd for applying posttest). The theoretical and practical sessions included a demonstration and re-demonstration for each aspect of the program using available tools such as assisted structured teaching videos and the researchers' laptops. Sessions were performed in Arabic with some visual aids to ensure that all study subjects were understood. Data were collected by the researchers, a pretest was conducted before video-assisted teaching, followed by administration of video-assisted teaching, and then posttest was assessed.

Evaluating the videos:

The videos were evaluated by five experts in the field of obstetric and gynecological nursing and community health nursing. The research experts in the field ensured clarity and appropriateness by reviewing the video and contents of pelvic floor muscle exercises.

The general objectives of the video-assisted structured teaching guideline were to improve Premenopausal women's knowledge and practice level regarding pelvic floor muscle exercises.

Specific objectives: At the end of the video-assisted structured teaching guidelines the studied primigravida mothers were able to:

- Introduction about pelvic floor muscle exercises (identify general knowledge about---
- Meaning of (DEFINE) pelvic floor muscle exercises
- (DESCRIBE) Benefits and importance of pelvic floor muscle exercises
- The technique of (APPLY)pelvic floor muscle exercises

- (IDENTIFY) How many times to perform pelvic floor muscle exercises
- (IDENTIFY) When performing pelvic floor muscle exercises.

The duration of video sessions for each theoretical and practical session ranged from 40-50 minutes for two days per week. The theoretical video sessions were started from 11:00 AM to 12.00 PM. The theoretical video sessions focused on knowledge about the introduction of pelvic floor muscle exercises, the meaning of pelvic floor muscle exercises, and the benefits and importance of pelvic floor muscle exercises. The practical video sessions were started from 12:00 PM to 1.00 PM. The practical video sessions focused on seeing the actual technique about pelvic floor muscle exercises, how many times to perform pelvic floor muscle exercises, and when to perform pelvic floor muscle exercises. The videos were introduced to the premenopausal women using a laptop and data show.

The researchers asked women to

- **Contract** – Squeeze their pelvic floor muscles.
- **Hold** – Keep contracting the muscles for 8 to 10 seconds. In the beginning, may not be able to hold the contraction for this time, but over time will build up strength.
- **Relax** – Relax pelvic floor fully. This step is as important as contracting the muscles.
- Over time, try to hold the muscle contraction harder and for a longer time before relaxing. As with other forms of exercise, muscles will become stronger with practice and will need to keep up routine to notice long-term effects. It can help to work with a pelvic floor physiotherapist; these are trained professionals who can teach you how to do these exercises effectively.
- Do these exercises in any position (standing, sitting, or lying down) and work them into daily routine in a way that is convenient for women.
- A typical regimen involves doing this exercise (to contract pelvic floor muscles, hold, then relax) 8 to 12 times per session,

for three sessions every day, if possible. This routine should continue for at least 15 to 20 weeks. It takes time to strengthen pelvic floor muscles, especially if they have been weakened or injured, so try to be patient and keep working on it.

III. Evaluation phase:

Premenopausal women were re-interviewed to assess their knowledge and practice level regarding pelvic floor muscle exercises in the prevention of urinary incontinence. The same tools used in the pretest with two assessments were utilized to measure Premenopausal women's knowledge and practice level regarding pelvic floor muscle exercises in the prevention of urinary incontinence after two months.

III. Administrative Design:

The Dean of the Faculty of Nursing at Beni-Suef University, as well as the directors of the Beni-Suef University Hospital's Obstetric Outpatient Clinic, gave their official approval to perform this study via a letter. The purpose of the study was described, and permission to collect research data from the hospital was obtained.

Statistical analysis:

SPSS was used to examine the data (version 19). The demographic characteristics and information sources of the individuals were investigated, and the results were expressed as frequencies and percentages. To examine the homogeneity of demographic characteristics, the Chi-square and Two-Sample Kolmogorov-Smirnov tests were utilized. The U test and analysis of covariance were used to compare the knowledge and practice subscales (ANCOVA). The ANCOVA was done with the assumptions in mind, with the influence of pre-test scores as a covariate variable corrected and the adjusted means compared. The threshold for significance was set at $P < 0.05$.

Results:

Table (1): Represented that 83% of premenopausal women their age ranged between 30 < 40 years, less than two thirds (60%) of them had secondary education, meanwhile, and also, it is pointed out that 73% of premenopausal women were housewives.

Figure (1): Demonstrated that 67% of premenopausal women were from urban areas and 33% of them were from rural areas.

Table 2 Portrayed the obstetric history of the studied premenopausal women, it was observed from this table that 78% premenopausal women were multiparous and 22% were primigravida. Regarding the type of delivery, (62%) of the premenopausal women was delivered vaginally. Regarding having abdominal pelvic surgery, it was noticed that (81%) of the premenopausal women were not had abdominal pelvic surgery and 37% had a history of urinary incontinence.

Figure (2): Showed that 88% of the studied premenopausal women did not know anything about the pelvic floor muscle exercises

Figure (3) revealed that the main source of information among the studied premenopausal women regarding pelvic floor muscle exercises in the prevention of urinary incontinence was doctors (60%).

Table (3): Represented that, the knowledge mean score of premenopausal women about pelvic floor muscle exercises was decreased pre-video-assisted teaching program implementation. While there was an increase and improvement in the mean score of knowledge with statistical significance differences after two months of video-assisted teaching program implementation.

Tables (4) showed that 97% of the premenopausal women had a satisfactory knowledge level about pelvic floor muscle exercises after the intervention compared to 27% before the intervention. Premenopausal women's knowledge level improved significantly after the video-assisted teaching program with a significant difference pre and post two months of video-assisted teaching program ($P < 0.001$).

It was noticed from **tables (5)** that, a high percentage of premenopausal women have little practice with pelvic floor muscle exercises before the implementation of the video-assisted teaching program. After the video-assisted teaching program, highly statistically significant improvements were observed in premenopausal women's practices about pelvic

floor muscle exercises in all tested areas ($P < 0.001$).

Figure (4) showed the total practice scores of premenopausal women pre and post receiving pelvic floor muscle exercises program. Pre the video-assisted teaching program, it was revealed that 93% of the premenopausal women evaluated had an inadequate practice of pelvic floor muscle exercises, which declined to 11% post the intervention. However, only 7% of the premenopausal women in the study had adequate practice pre the program, but after two months, 89% of premenopausal women increased their practices score with a statistically significant difference.

It cleared from **figure 5** that (89%) of studied premenopausal women were satisfied with video-assisted teaching programs as a preventive method of pelvic floor muscle exercises.

Table (6): Revealed that there were positive significant correlations between the age, educational level, occupation, residence of the studied premenopausal women, and their knowledge throughout the phases of the video-assisted teaching program at $p < 0.01$.

Table (7) illustrated the correlation between the total score of premenopausal women's knowledge and practice pre and post-video-assisted teaching program. A significant positive correlation was found between the score of knowledge and the score of practice with statically significant differences ($p < 0.05$).

Table (8): Displayed that the majority of the premenopausal women reported that practices of video-assisted teaching program regarding pelvic floor muscle exercises had a positive effect on the reducing and prevention of urinary incontinence.

Table (1): Distribution of studied premenopausal women regarding their demographic characteristics (n=60)

Items	No.	%
Age in years		
18 < 30	10	17
30 < 40	50	83
Educational level		
-Primary education	8	13
-Secondary education	36	60
-University education	16	27
Occupation		
- Working	16	27
- Housewives	44	73

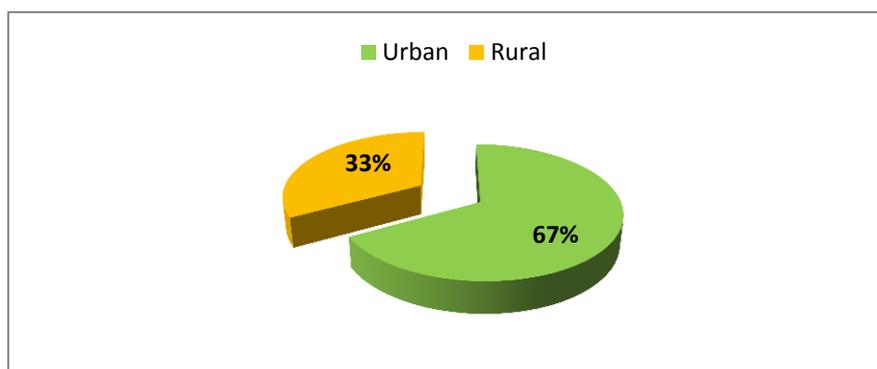


Figure (1): Distribution of studied premenopausal women regarding their residence (n=60)

Table (2): Distribution of premenopausal women regarding their obstetric history (n=60)

Clinical Variables	Frequency	Percentage
1. Parity		
a) Primipara	17	28
b) Multipara	43	72
2. Type of delivery		
Vaginal delivery	37	62
Caesarian Section	23	38
3. Abdominal pelvic surgery		
a) Yes	11	19
b) No	49	81
4. History of urinary incontinence		
a) Yes	22	37
b) No	38	63

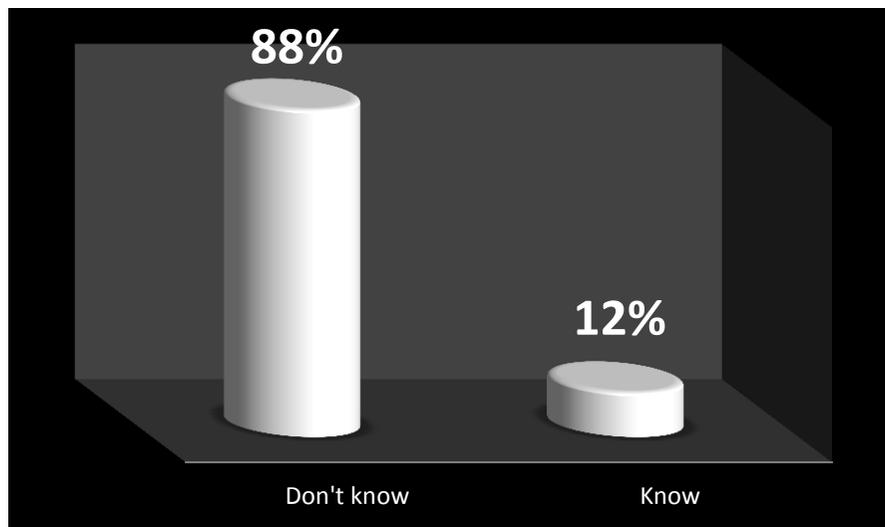


Figure (2): Distribution of studied premenopausal women regarding their knowledge about pelvic floor muscle exercises before (n=60)

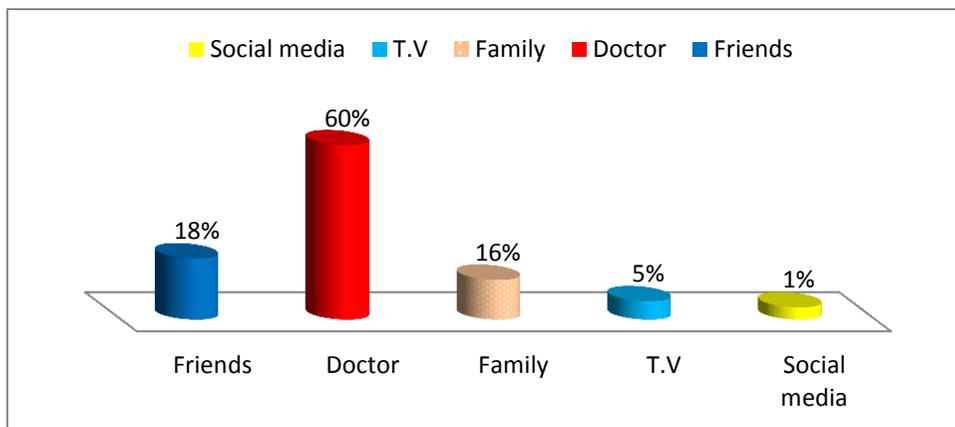


Figure (3): Percentage distribution of studied premenopausal women regarding their source of information about pelvic floor muscle exercises (n=60)

Table (3): Comparison between the mean score of studied premenopausal women regarding their knowledge about pelvic floor muscle exercises (n=60)

Variable	Score	Pre- video-assisted teaching program	Two months post-video-assisted teaching program	Paired t-test	P-value
		Mean \pm SD	Mean \pm SD		
Introduction about pelvic floor muscle exercises	2	.72 \pm .22	1.67 \pm .34	16.3	<0.001
Meaning of pelvic floor muscle exercises	2	.46 \pm .56	1.49 \pm .27	10.04	<0.001
Benefits and importance of pelvic floor muscle exercises	2	.83 \pm .32	1.67 \pm .42	13.5	<0.001
How many times to perform pelvic floor muscle exercise	2	.64 \pm .22	1.23 \pm .41	23.1	<0.001
When performing pelvic floor muscle exercises.	2	.53 \pm .46	1.49 \pm .42	17.3	<0.001

*highly significance at 0.001 levels

Table (4): The total knowledge level of the studied premenopausal women regarding pelvic floor muscle exercises pre and post-video-assisted teaching program (n=60)

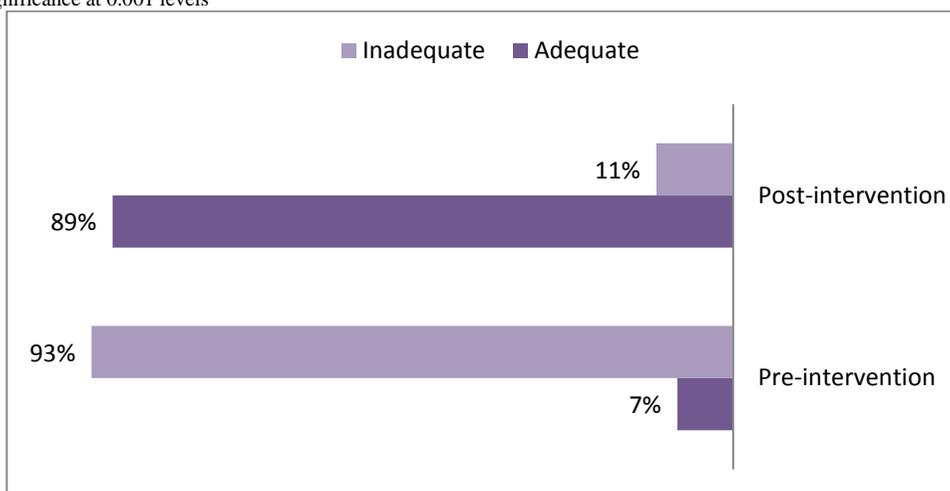
Total knowledge	Pre video-assisted teaching program		Post-video-assisted teaching program		T	P-value
	No	%	No	%		
Satisfactory	16	27	58	97	7.043	<0.001*
Unsatisfactory	44	73	2	3		

*highly significance at 0.001 levels

Table (5): Distribution of premenopausal women' practices regarding pelvic floor muscle exercises pre and post-video-assisted teaching program (n=60)

Practices items	No =(60)				p-value
	Pre -video-assisted teaching program		Post- video-assisted teaching program		
	No	%	No	%	
The technique of pelvic floor muscle exercises	10	16 %	53	89 %	<0.001*
How many times to perform pelvic floor muscle exercise	11	19 %	58	97 %	<0.001*
When performing pelvic floor muscle exercises.	8	14 %	57	95 %	<0.001*

*Significance at 0.001 levels

**Figure (4):** The total practices level of the studied premenopausal women regarding pelvic floor muscle exercises in prevention of urinary incontinence pre and post-video-assisted teaching program (n=60)

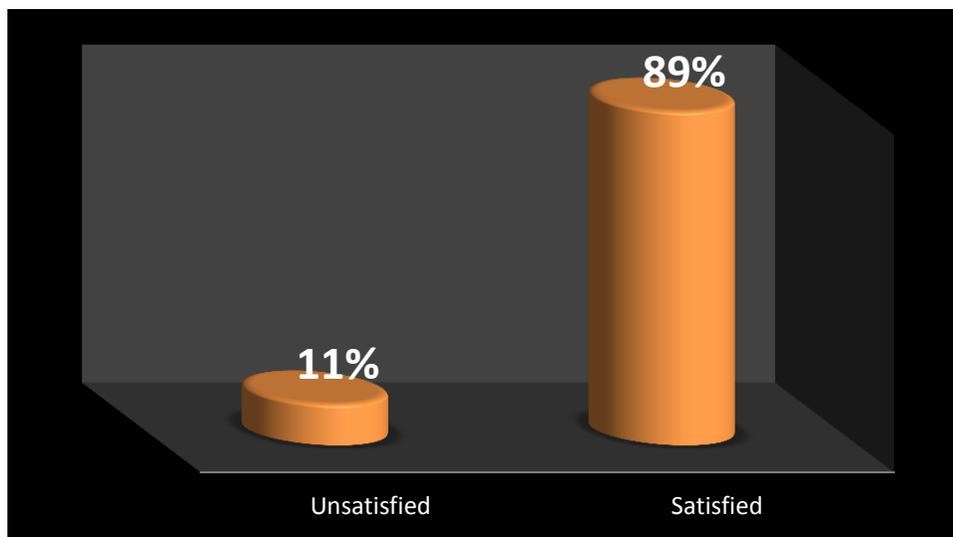


Figure (5): Frequency distribution of studied premenopausal women regarding satisfaction about pelvic floor muscle exercises post-video-assisted teaching program (n=60)

Table (6): Correlations between studied premenopausal women's knowledge regarding pelvic floor muscle exercises and their demographic characteristics (n=60).

Knowledge scores	Pre- video-assisted teaching program	One month post- video-assisted teaching program
Age	.662	12.62*
Education	.716	14.16*
Occupation	.538	9.38*
Residence	.687	8.87*

(*) Statistically significant at $p < 0.05$

Table (7): Correlation Co-efficient between the knowledge score and practice scores pre and post- video-assisted teaching program

Correlation	Practices score	
	R	P
Knowledge score		
Pre video-assisted teaching program	0.174	0.379
Post video-assisted teaching program	0.363	0.048*

Correlation is significant at the 0.05level*.

Table (8): Distribution of the studied premenopausal women regarding the effect of video-assisted teaching program content about pelvic floor muscle exercises post-implementation

Effect of video-assisted teaching program content about pelvic floor muscle exercises	No	%
Pelvic floor muscle exercises were easy applicable:		
• Yes	53	89.0
• No	7	11.0
The video-assisted teaching program was effective:		
• Yes	60	100.0
• No	0	0.0

Discussion:

Exercise to build muscle strength has been advocated as a potential risk reduction approach for urinary incontinence, which has been linked to pelvic floor muscle weakness (**Garcia et al., 2015**). Several studies have shown that increasing moderate physical activity reduces the risk of urinary incontinence; however, in recent years, numerous studies have revealed that urinary incontinence is commonly found in females, implying that sports involving strenuous physical activity increase the prevalence of urinary incontinence (**Cardoso et al., 2018**). According to **Da Roza et al., (2015)**, the prolonged mechanical stress that females were subjected to most likely resulted in muscular weakening and decreased reactivity. Hence, the researchers aimed to evaluate the effect of video-assisted teaching program on premenopausal women's knowledge and practice regarding pelvic floor muscle exercises in the prevention of urinary incontinence.

Results of the present study indicated that the majority of the studied premenopausal women were from urban areas. These findings agree with **Dhakal et al., (2021)**, who conducted a study in Nepal about "Statistical trends in literacy rate" and found that over three-quarters of females were in the urban areas.

Results of the present study indicated that the majority of the studied premenopausal women did not know anything about pelvic floor muscle exercises. These findings matched with **Christina et al., (2021)**, who conducted a study entitled " Effectiveness of a structured education program on premenopausal women's awareness of pelvic floor muscle exercises in preventing urinary incontinence" and observed that the same result among the women regarding pelvic floor muscle exercises. This may be related to that women not received any educational program regarding pelvic floor muscle exercises.

Similarly, **Caagbay, et al., (2017)** studied "Can a leaflet with brief instructions Teach women how to correctly contract their pelvic floor muscles" and found that even fewer seem to recognize what pelvic floor muscle exercises are.

Results of the present study revealed that the main source of information among the majority of the studied premenopausal women regarding pelvic floor muscle exercises in the prevention of urinary incontinence was doctors. From the researchers' point of view, this indicates that health personnel plays a major role, as well as the places of substandard health services.

On the other hand, the results are not matched with **Shrestha et al., (2014)** who did a study about "Knowledge on uterine prolapse among married women of reproductive age in Nepal" and found that the majority of samples are access to information through radio, television, and newspapers.

Results of the present study revealed that there was increasing and improvement in the mean score of knowledge of premenopausal women with statistical significance differences after one month of video-assisted teaching program implementation. From the researchers' point of view, this demonstrates that the video-assisted teaching program was very effective and had a positive effect on improving premenopausal women's knowledge and the need to understand the purpose of the video-assisted teaching program regarding improving the knowledge about pelvic floor muscle exercises..

These results are in the same line with **Piernicka et al., (2015)** who studied "Teaching the technique of pelvic floor muscle exercises among sport university females students" and reported that Pelvic floor muscle training has a significant influence on urinary incontinence prevention in women and most of them pointed to the need to improve access to knowledge about both the muscles training method.

Results of the current study highlighted that after the video-assisted teaching program, highly statistically significant improvements were observed in premenopausal women's practices about pelvic floor muscle exercises in all tested areas ($P < 0.001$), and the majority of them had higher practice score than before the program with a statistically significant difference. From the researchers' point of view, this reflected the positive effect of using video-assisted structured teaching programs in

improving knowledge among the studied women.

These results are parallel with the study published by **Debbarma, (2021)** who studied "Impact of Pelvic Floor Muscle Exercises on Stress Urinary Incontinence in Menopausal Women in Selected Bhubaneswar, Odisha Areas" and found that there was a statistically significant difference between pretest and posttest scores in the experimental group, whereas the difference between pretest and posttest scores in the control group was comparatively less than the difference between pretest and posttest scores in the experimental group.

Additionally, results of the current study highlighted that majority of studied premenopausal women were satisfied with video-assisted teaching program as a preventive method of pelvic floor muscle exercises. From the researchers' point of view, this reflected the positive effect of implementing video-assisted structured teaching programs in improving knowledge among the studied premenopausal women.

Results of the current study revealed that there were positive significant correlations between the demographic data of the studied premenopausal women and their knowledge throughout the phases of the video-assisted teaching program at $p < 0.01$. This result is in the same line with **Shijagurumayum et al., (2020)** they studied "Pelvic floor muscle training program in pregnant Nepalese women- a feasibility study" and are found that women's knowledge is associated with their residence for the women because women are living in urban areas may have access more resources to increase their information than in rural areas.

Results of the current study highlighted that a significant positive correlation was found between the score of knowledge and the score of practice with statically significant differences. From the researchers' point of view, this association is explained by that improvement in knowledge is reflected in the improvement in practice level. Also, mean when the studied women had sufficient knowledge they can practice well and this reflected the success of the video-assisted teaching program and their positive effect.

Results of the current study indicated that the majority of premenopausal women reported that practices of video-assisted teaching program regarding pelvic floor muscle exercises had a positive effect on the prevention of urinary incontinence. From the researchers' point of view, this reflected the success of the video-assisted teaching program and its positive effect. Also, indicated that the hypothesis of the study was achieved.

These findings are similar to the results conducted by **Debbarma, (2021)** and concluded that a video-assisted teaching module on pelvic floor muscle exercises was effective for reducing stress incontinence among women.

Similarly, **Oleksy, et al., (2017)** studied "The use of transabdominal ultrasound in pelvic floor muscles evaluation in physiotherapy" and found that the pelvic floor muscles are increased the muscle strength of pelvic floor muscles and support the internal organs within the abdominal cavity. Also, **Weber-Rajek et al., (2015)** studied ". Evaluation of the efficacy of physical methods in the treatment of urinary incontinence in women" and reported that significant improvement and decrease in the frequency of uncontrolled urinary leaks in the group treated.

Similarly, **Hagovska, and Takac (2016)** conducted a study titled "biofeedback as a diagnostic and therapeutic method in the treatment and prevention of women's urinary incontinence" and showed an improvement and decrease in the frequency of involuntary urination in women who exercised pelvic floor muscles twice a day for 15min each day.

Also, **Hrycyna and Strupińska, (2016)** performed a study about "Exercises strengthening muscles of the true pelvis fundus in women with stress urinary incontinence" and found that regular Kegel exercises improve pelvic floor muscle tension and blood supply.

Conclusion:

Based on the current study's findings and hypotheses, it was concluded that there is an improvement in the knowledge level after the administration of a Video-Assisted teaching program on pelvic floor muscle exercises. Video-assisted teaching program found to be

effective in increasing premenopausal women's knowledge and practice regarding pelvic floor muscle exercises. The study also, revealed that there was a correlation between the knowledge scores and the demographic data (age, educational, working status, and residence).

Recommendations:

In light of the current study results, the following recommendations are proposed:

- It is very important to apply a teaching program for premenopausal women to improve knowledge and practice regarding pelvic floor muscle exercises and should be conducted, discussed, integrated into their care.
- Booklets and brochures containing sufficient knowledge about pelvic floor muscle exercises should be printed and kept in clinics and given to premenopausal women.
- Future research includes replication of the current study on a large group and another setting for generalization.

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