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Impact of Pelvic Floor Muscle Exercises to Reduce the Stress Urinary Incontinence among Menopausal Women in Selected Areas of Bhubaneswar Odisha

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Abstract: ***Women suffer from one or the other health issues during their life time, of which majority come across the problem called urinary incontinence (UI). UI is defined as 'the complaint of any involuntary leakage of urine' (Abrams et al 2002).*** [39] ***Methods: Research design- True experimental; pre test – post test only design. Module- VATS on PFME. Settings- Missionary Charity of Mother Teresa Home, and Chakeisihani; ward no-5, Bhubaneswar. Sample size- 30 experimental groups, 30 control group. Sampling technique- simple random sampling technique. Results: 't' test & chi square test has been done for descriptive & inferential statistics. In experimental group the overall pretest mean score was 20.1±4.3, where as in post test mean score was 14.2±4.3 with mean difference 5.94 and paired 't' test value was 13.85, higher than tabulated value (2.05) with df=29 at 5% level of significance which was highly significant. In control group the overall pretest mean score was 17.8±3.7, where as in post test mean score was 18.6 ± 3.7, with mean difference 0.8 and paired 't' test value was 3.9, with df=29 at 5% level of significance. Conclusion: From the findings of the study it is concluded that VATS video on PFME has found effective for reducing the SUI among menopausal women.***

Keywords: VATS- Video assisted teaching module, UI- urinary incontinence, SUI- Stress urinary incontinence, PFME pelvic floor muscle exercises

1. Introduction

Aging represents the accumulation of changes in a person over time. [1,2]As physical changes takes place in old age, genito urinary problem also common. Urinary incontinence is one of the most common problems noted in menopausal women, and is defined by the International Continence Society as the involuntary loss of urine that represents a hygienic or social problem to the individual.[3]

Urinary incontinence is categorized the four main categories are (1) stress urinary incontinence (SUI), (2) urge urinary incontinence (UUI), (3) overflow incontinence, and (4) functional incontinence. The prevalence of stress UI peaks during the perimenopausal years (age 45–49 years).[11]

Stress urinary incontinence affects about 13% of women 19–44 years of age.Half of the women reported the symptom of stress incontinence (46–49%) when aged 48–54 years, as we age, the bladder becomes less elastic and therefore has more difficulty in stretching,[12-14]especially during activities that increase intra-abdominal pressure, such as coughing, sneezing, or bearing down.[9]

Dr. Arnold Kegel (1894-1981) was an American gynecologist who noted that women's pelvic floor muscles were weakened by childbirth. **Dr. Kegel** observed the effects of pelvic floor exercises on thousands of women to demonstrate that the pelvic floor muscles could be exercised like any other muscle in the body.[4,10]

After 18 years of research, he published 'A Nonsurgical Method of Increasing the Tone of Sphincters and their Supporting Structures' **in 1942**. The paper noted that diligent patients usually begin to notice symptomatic relief from urinary incontinence after 2 to 4 weeks of resistive exercises. [4, 10]

A 2009 survey of women in a managed care population found that the prevalence of undiagnosed urinary incontinence was 53% in the preceding year. Some individuals pay out of pocket for adult incontinence undergarments, absorbable pads, skin care products, deodorants, and increased laundry expenses. [3]

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. [3]

Overall, there is evidence for the widespread recommendation for use of pelvic floor muscle training as a first-line conservative management programme for women with stress, urge or mixed urinary incontinence. [15]

Literature supports that urinary incontinence is a common problem faced by women during menopausal period and practicing regular pelvic floor exercises during menopausal period can prevent this to a great extend. So as a researcher I selected this topic to teach the menopausal women regarding the importance of regular practice of pelvic floor exercises to promote their quality of life and also to help them to reduce the social costs such as fear, embarrassment, and ultimately, isolation from others.

2. Objectives of the Study

1) To assess the level of stress urinary incontinence among the menopausal women in both control and experimental group.

2) To administer VATM regarding pelvic floor muscle exercises to the experimental group.
3) To find out the effectiveness VATM on pelvic floor muscle exercises in management of stress urinary incontinence among menopausal women.
4) To find out the association between the post test scores with selected socio- demographic variables among experimental group.

2.1 Hypotheses

H_1: There will be significant difference between the pre-test and post-test scores of menopausal women with regard to management of stress urinary incontinence after administering pelvic floor muscle exercises.
H_2: There will be significant association between post test levels of stress urinary incontinence with their selected socio-demographic variables among experimental group.

2.2 Conceptual framework

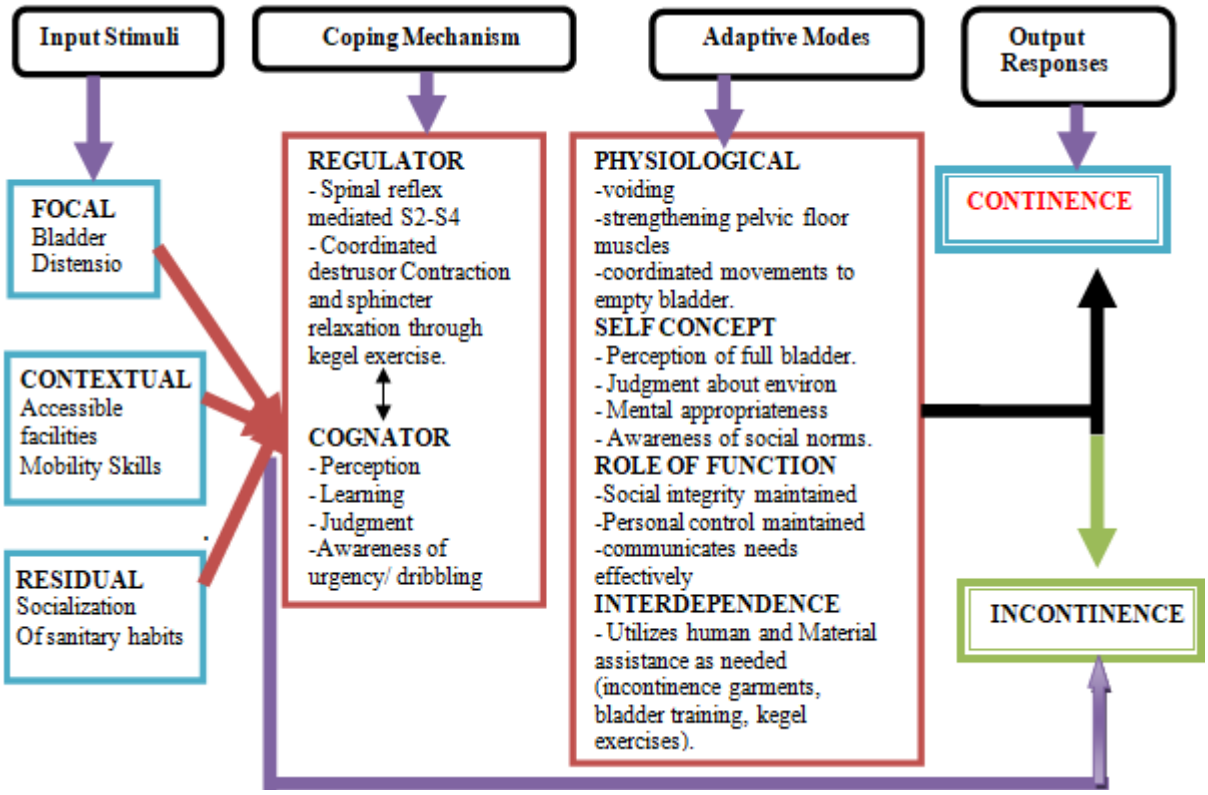

Figure 1: The conceptual model selected for this study is based on Conceptual model of urine control, from Jirovec M. M., Jenkins, J., Isenberg, M., & Baiardi, J. (1999). Urine control theory derived from Roy's conceptual framework

3. Materials and Methods

An evaluative True experimental, pre test – post test only design was conductedat Missionary Charity of Mother Teresa Home, Satyanagar, Bhubaneswar, and Odisha for experimental group and Chakeisihani; ward no-5, Mancheswar, Bhubaneswar, Odisha for control group among the Menopausal women, where 30 sample was selected for experimental and 30 for control group by probability simple random sampling technique.

Inclusion criteria:
The menopausal women who were-
- Having stress urinary incontinence.
- Willing to participate in the study.
- Available at the time of data collection

Exclusion criteria:
The menopausal women who were-
- Having UTI
- Treatment for stress urinary incontinence
- Who are critically ill
- Any disease affecting symptom of incontinence
- Pelvic surgery
- Who have completely hearing and visual impairment.

Variables:
Independent variable: Video assisted teaching module on pelvic floor muscle exercises.
Dependent variable: level of stress urinary incontinence among menopausal women.

Development of the Tools:
Section-A: Includes Demographic variables of the menopausal women like areAge, religion, educational qualification, age of menopause, surgical menopause, constipation, persistent cough, and previous knowledge about pelvic floor muscle exercises. This section includes 8 items of question.

Section-B: Section-B: includes-
a) Modified incontinence measurement scale.
b) Video assisted teaching module on pelvic floor muscle/ kegel exercises.

Procedure for Data Collection

The data were collected from Missionary Charity of Mother Teresa Home, Satyanagar, Bhubaneswar, and Odisha for experimental group and from Chakeisihani, ward no-5, Mancheswar, Bhubaneswar, and Odisha for control group among menopausal women having stress incontinence. Prior to data collection the investigator obtained normal written permission from both the selected area. Pre-test was conducted by using modified stress incontinence scale to assess the level of stress urinary incontinence in both experimental and control group. VATM was administered and allowed to practice for 29 days to the experimental group. Evaluation done after 29 days of implementation of video by using same modified stress incontinence measurement scale for both the experimental and control group which was used for the pre-test & conducted in the same place.

The collected data was analyzed by using descriptive & inferential statistics.

In this scale:

- Never=0
- Rarely =1
- Sometimes =2
- Often=3

Level of Severity	*Percentage of Score*	*Actual Score*
Mild incontinence	< 34%	1-10
Moderate incontinence	34-66%	11-20
Severe incontinence	>67% or above	21-30

4. Findings

Section-I

Table 1: Frequency and percentage distribution of data on demographic variables of menopausal women in both experimental and control group

Sl. no	*Demographic variables*	*Experimental Group*		*Control Group*	
		Frequency	*Percentage (%)*	*Frequency*	*Percentage (%)*
1.	**Age (In Years)**				
	45-54	10	33.5%	11	36.6%
	55-64	08	26.5%	5	16.8%
	65-74	12	40%	14	46.6%
	>75	0	0%	0	0%
2.	**Religion**				
	Hindu	19	63.3%	21	70%
	Muslim	02	6.7%	3	10%
	Christian	07	23.3%	5	16.6%
	Others	02	6.7%	1	3.4%
3.	**Education**				
	Illiterate	26	86.6%	24	80%
	Primary school	04	13.4%	06	20%
	High school	0	0%	0	0%
	Graduate	0	0%	0	0%
	Post graduate	0	0%	0	0%
4.	**Age of Menopause (In Years)**				
	42-45	14	46.6%	13	43.4%
	46-49	16	53.4%	17	56.6%
	>50	0	0%	0	0%
5.	**Surgical Menopause**				
	No	30	100%	28	93.4%
	Oophorectomy	0	0%	0	0%
	Hysterectomy	0	0%	2	6.6%
6.	**Constipation**				
	No	19	63.4%	20	66.6%
	0-6 month	O5	16.6%	5	16.6%
	7-12 month	02	6.6%	2	6.6%
	More than 12 month	04	13.4%	3	10%
7.	**Persistent Cough**				
	Yes	11	36.6%	10	33.4%
	No	19	63.4%	20	66.6%
8.	**Previous Information**				
	No	29	96.6%	28	93.4%
	Electronic media	0	0%	0	0%
	Public media	1	3.4%	2	6.6%
	Skilled trainer	0	0%	0	0%
	Others	0	0%	0	0%

Table 2: Comparison between difference of pretest and post test scores of menopausal women on pelvic floor muscle exercises to reduce the stress urinary incontinence in experimental group.

Area	*'t' Value*	*Level of Significance*
Level of severity of SUI (Experimental group)	13.85	Highly significant
Level of severity of SUI (control group)	3.9	Significant

(df =29, table value=2.05, P= ≤0.05)

Interpretation

Paired **'t'** test was calculated to assess the significant difference between pretest and post test scores among menopausal women in experimental group which shows highly significant difference between scores of pretest and post test, where as in control group the difference between pretest score was comparatively less than the difference between scores of pretest and post test in experimental group.

Hence the null hypothesis was rejected **(P=≤0.05)** and statistical hypothesis was accepted. Thus it can be interpreted that VATM was effective in reducing stress urinary incontinence among menopausal women.

Table 3: Comparison between the overall scores of mean, SD, mean difference and 't' value of pretest and post test among menopausal women on pelvic floor muscle exercises to reduce the stress urinary incontinence in experimental group.

Groups Experimental group	Mean	SD	Mean Difference	't' Value	Table Value P= ≤ 0.05
Pretest	20.1	4.3	5.94	13.85	2.05
Post test	14.2	4.3			
Control group					
Pretest	17.8	3.7	0.8	3.9	
Post test	18.6	3.7			

Interpretation:

The Table: 3: reveals that the obtained post test mean value in experimental group was 14.2 which is lower than pretest mean value 20.1. Whereas, in control group the obtained post test mean value 18.6 was higher than pretest mean value 17.8. In experimental group the calculated value was higher than tabulated **'t'** value. Hence the null hypothesis was rejected and statistical hypothesis was accepted.

It is inferred that menopausal women who had stress urinary incontinence had significantly lower severity level after implementation of video assisted teaching module.

H_2. There will be significant association between post test levels of stress urinary incontinence with their selected socio-demographic variables among experimental group.

Table 4: Association between post test scores of the menopausal women on stress urinary incontinence with their selected demographic variables

Demographic Variables	*Chi Square (χ^2) Value*	*DF*	*Table Value*	*Level of Significance*
Age (in years)	8.24	4	9.488	Not significant
Religion	30.68	5	11.07	Significant
Educational qualification	9.91	8	15.51	Not significant
Age of menopause	2.45	4	9.488	Not significant
Surgical menopause	0	4	9.488	Not significant
Constipation	11.14	6	12.592	Not significant
Persistent Cough	0.7632	2	5.991	Not significant
Previous information	0.12	8	15.51	Not significant

(P= ≤ 0.05)

Chi square was calculated and it is found that there was significant association between post test scores among menopausal women regarding stress urinary incontinence when compared to religion at 5% level of significance. There was no significant association between post test scores among menopausal women when compared with age, educational qualification, and age of menopause, surgical menopause, constipation, persistent cough and previous information. It is found that in some demographic variables null hypothesis is rejected and alternative hypothesis is accepted.

5. Conclusion

From the findings of the research study it is concluded that video assisted teaching module on pelvic floor muscle exercises was effective for reducing stress incontinence among menopausal women.

6. Acknowledgement

I thank the menopausal women who participated in the study and the authorities who provided permission to conduct the study.

Conflict of interest: None

Source of funding: self

Ethical clearance: The permission was obtained from the Missionary Charity of Mother Teresa Home, Satyanagar, Bhubaneswar, and Odisha for experimental group and from Chakeisihani, ward no-5, Mancheswar, Bhubaneswar, and Odisha for control group among menopausal women having stress incontinence. Written informed consent was obtained from the study participants before data collection.

7. Recommendations

Keeping in view the findings of the research study, the following recommendations were made:

- A similar study can be conducted with a very large sample size for wide generalization.
- A similar study can be conducted for longitudinal duration to find out the more effectiveness.
- A similar study can be undertaken in other setting.

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