IJCRT.ORG ISSN : 2320-2882

INTERNATIONAL JOURNAL OF CREATIVE RESEARCH THOUGHTS (IJCRT)

An International Open Access, Peer-reviewed, Refereed Journal

"Effectiveness Of Pelvic Floor Muscle Exercise On Urinary Incontinence Among Pregnant Women Attending Antenatal OPD In Tertiary Hospital Gangtok, Sikkim"

Memory Manner[1], Binita Khati[2], Sonam Zangmu Sherpa[3]

[1]M.Sc. Nursing Student, [2]Professor HOD OBG Nursing Dept, [3]Associate Professor, Sikkim Manipal College of Nursing, Sikkim Manipal University, Gangtok, Sikkim, India.

Abstract

Introduction: One of the most prevalent health issues affecting pregnant women worldwide is urinary incontinence (UI), often known as the involuntary flow of urine. Urinary Incontinence is the term for when a person is unable to contain her urine effectively. This is a typical issue that arises and gets worse throughout pregnancy. Statistics show that 423 million (21.6%) women received UI diagnoses in 2018, making it one of the biggest regional burdens in Asia.

Aims and objectives: The study was conducted to assess the Effectiveness of Pelvic Floor Muscle Exercise on Urinary Incontinence among Pregnant women attending Antenatal checkup in Tertiary Care Hospital Gangtok, Sikkim.

Method: A pre-experimental one group pretest-post-test Research study was conducted with 63 First Trimester pregnant women who were attending antenatal check-up. Non-Probability Purposive Sampling Technique was used. Revised Urinary Incontinence Scale (RUIS) was used to measured Urinary Incontinence in pregnant women then a pelvic floor muscle exercise was taught to the pregnant women who had urinary incontinence with the help of flyer (comprises of steps and benefits of pelvic floor muscle exercise). They were asked to practice the same for 30 minutes for a period of one months. Post test was done after one month.

Result: The pre-test results shows that 7(11.1%) of the first trimester pregnant women have severe urinary continence, followed by 31(49.2%) have moderate urinary incontinence, 25(39.6%) mild urinary incontinence. Whereas, in the post-test results shows that none of the first trimester have severe urinary continence, followed by 7(11.1%) have moderate urinary incontinence, 39(61.9%) mild urinary incontinence and 17(27%) have no urinary incontinence. Hence, findings indicates that pelvic floor muscles exercise was effective in improving urinary incontinence among pregnant women, with p*value <0.05 level of significant

Conclusion: The study revealed that pelvic floor muscle exercise was effective in improving urinary incontinence among pregnant women. The results of this study can be taken into consideration in educating Pelvic Floor Muscle Exercise to every Pregnant woman during their antenatal visits, in order to reduce the risk of Urinary Incontinence among them.

Keywords: urinary incontinence, pelvic floor muscle exercise, first trimester pregnant women

Introduction

During pregnancy, the growing baby can place a lot of pressure on the bladder. This can lead to urine leakage (incontinence). Bladder control problems can happen both during pregnancy and after childbirth. Weak pelvic floor muscles can cause leakage of urine and faeces, or accidentally passing of gas. Urinary incontinence (UI) is considered as one of the most prevalent health issues affecting pregnant women worldwide, often known as the involuntary flow of urine. Pelvic floor muscle exercises are often recommended to help strengthen the pelvic muscles and regain bladder control. Urinary incontinence is the inability to control the passage of urine. If someone experience incontinence, they might feel an urgent need to urinate or leak urine between trips to the bathroom. They also might find that they have to make frequent trips to a toilet if they have incontinence. Urinary incontinence occurs when the bladder gets compressed (flattened), making less space for urine. This extra pressure can make pregnant women feel the urge to urinate more often than normal. In addition, to changing of diet, losing weight, and timing of trips to the bathroom, pelvic floor muscle exercises may help to improve bladder control and reduce urine leakage. [3]

Statistics show that 423 million (21.6%) women received urinary incontinence diagnoses in 2018, making it one of the biggest regional burdens in Asia. [4]

The International Incontinence Society (ICS) divided urinary incontinence into three categories: urge urinary incontinence (leakage that occurs either immediately after or in conjunction with urgency) and mixed urinary incontinence (involuntary leakage associated with urgency and with sneezing, coughing, or exertion). Stress urinary incontinence is characterised by involuntary leakage on sneezing, coughing, or exertion. Urinary incontinence is primarily brought on by pregnancy and vaginal delivery in particular. Due

to decreased total collagen content and its tensile characteristics during pregnancy, the functional support pelvic floor muscles were compromised, resulting in joint laxity. Studies have shown that pelvic floor muscle exercise is useful in treating urinary incontinence by strengthening the pelvic floor muscles, regardless of the forms of incontinence. It is one of the measure and intervention in treating and preventing urinary incontinence among pregnant and postpartum women have shown promising results. [5]

Pelvic floor muscle exercise help to strengthen the pelvic floor muscles, pelvic floor muscles are the set of muscles that use to stop the flow of urine. Strengthening these muscles helps in preventing urine leaking or accidentally passing of gas or faeces. Pelvic floor exercises helps in strengthen the pelvic floor muscles, pelvic floor muscles are those muscles that support organs in the pelvis, like bladder, bowel and vagina. The pelvic floor muscles hold the organs in place while also assisting with bodily functions like urination, defecation and sex. Kegels involve tightening and then releasing the muscles in the pelvic floor to strengthen them. Doing pelvic floor muscle exercise is a way to keep the pelvic floor muscles strong, it can give a better control over the bladder and bowels and prevent the pelvic muscles from getting weak.[6]

Methodology

A pre-experimental one group pretest-post-test Research study was conducted in the OPD of Central Referral Hospital, Gangtok, Sikkim from November 2022 to December 2022. Letter of approval was obtained from the Medical Superintendent (MS) of Central Referral Hospital (CRH). Ethical permission was sought from institutional ethics committee. Self-introduction and rapport were established with the participants in order to gain their co-operation. Informed written consent was obtained.

63 First Trimester pregnant women including both Primigravida & multigravida who were attending antenatal check-up and met the inclusion criteria & willingly wants to participate was included in the study. Non-Probability Purposive Sampling Technique was used. Revised Urinary Incontinence Scale (RUIS) was used to measured Urinary Incontinence in pregnant women then a pelvic floor muscle exercise was taught to the pregnant women who had urinary incontinence with the help of flyer (comprises of steps and benefits of pelvic floor muscle exercise). They were asked to practice the same for 30 minutes for a period of one months. Post test was done after one month.

The study was implemented according to the following steps:

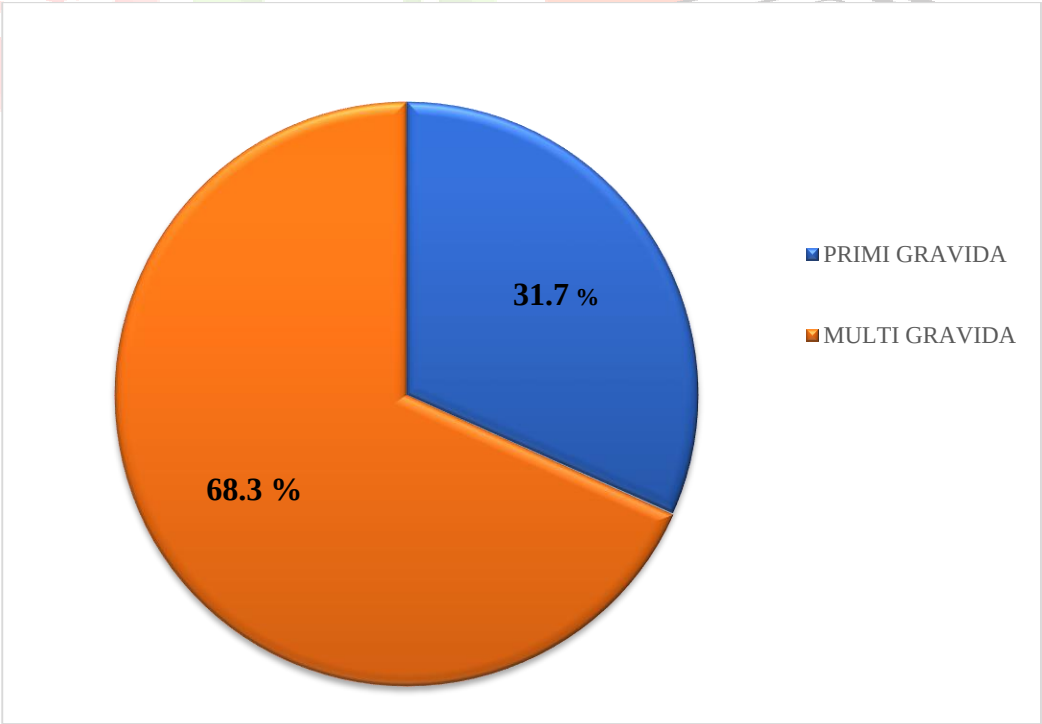
- Permission was obtained from the concerned authority (Principal, Sikkim Manipal College of Nursing, Gangtok, Sikkim, Medical Superintendent (MS) of Central Referral Hospital, Gangtok, Sikkim).
- Self-introduction and rapport were established with the participants.
- Purpose of the study was explained and informed written consent was taken from the participants.
- Conducted pre-test as to identify pregnant women with urinary incontinence using Revised Urinary Incontinence Scale (RUIS).

- One to one education on pelvic floor muscle exercise was given to those pregnant women who had urinary incontinence.
- Re-assessment of pregnant women for urinary incontinence via Revised Urinary Incontinence Scale (RUIS), after One month was done.
- Data was analysed using Statistical Package for Social Sciences (SPSS) version 20.

Results and Discussion

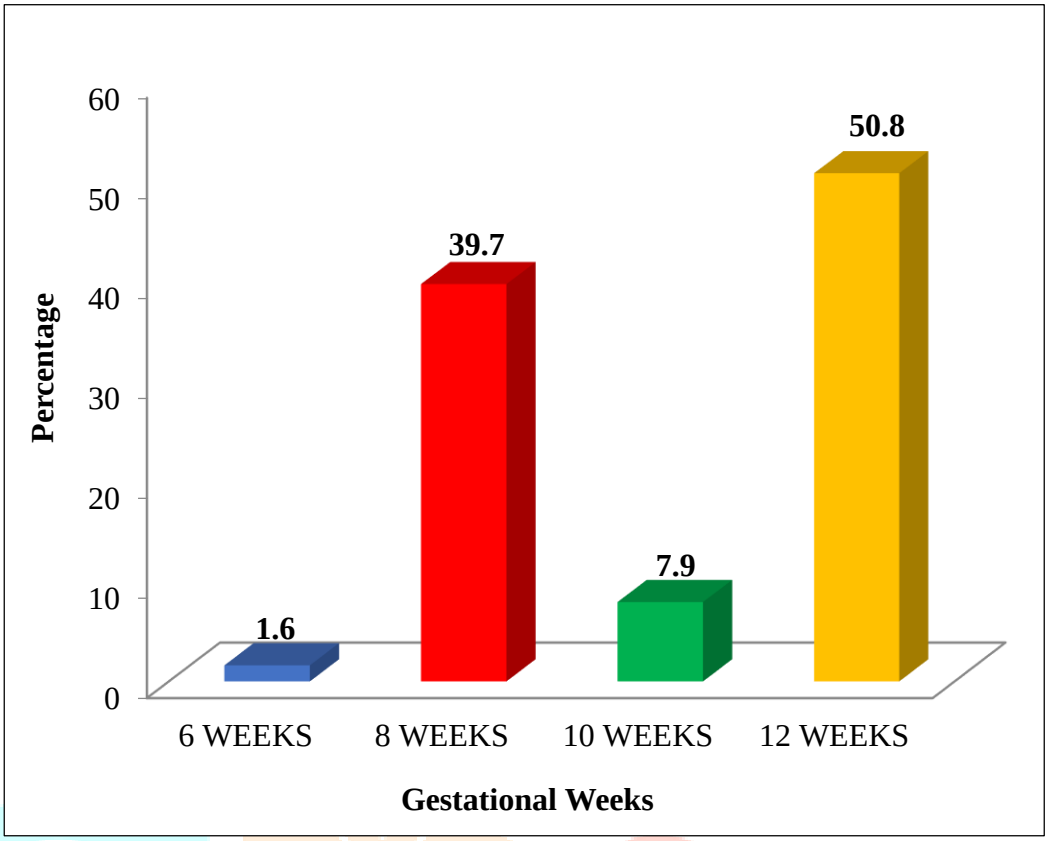
Findings related to demographic variables:

- Majority of the participants 23(36.6%) were in the age group 26-30 years, 20(31.7%) were 31-35 years, 12(19%) were 36 years and above, and 8(12.7%) were between the age group of 19-25 years.
- Majority of the participants 46(73%) belong to the religion Hinduism, 14(22.2%) were Buddhist, 2(3.2%) were Christian, and 1(1.6) others.
- Majority of the participants 23(36.5%) were Graduate and above, 21(33.3%) were Higher Secondary, 19(30.2%) were Secondary education.
- Majority of the participants 44(69.8%) were unemployed, 18(28.6%) were professional, and 1(1.6%) skilled worker.
- Majority of the participants 63(100%) monthly income was ≥10,001.
- Majority of the participants 43(68.3%) were in nuclear family, and 20(31.7%) were in joint family.
- Majority of the participants 63(100%) were married.



Pie diagram showing distribution of parity of pregnant women.

This figure depicts that Primigravida is 31.7% and Multigravida is 68.3%



Bar diagram showing distribution of gestational weeks of pregnant women

This figure depicts the gestational weeks of 6 weeks is 1.6%, 8 weeks is 39.7%, 10 weeks is 7.9%, and 12 weeks is 50.8%.

Findings related to frequency and percentage distribution of pre-test and post-test level of urinary incontinence among pregnant women.

- The pre-test (before teaching the pregnant women about Pelvic Floor Muscle Exercise) findings of the present study revealed that majority 31(49.2%) of the pregnant women had moderate Urinary Incontinence, followed by 25(39.6) mild Urinary Incontinence, and 7(11.1%) severe Urinary Incontinence, with obtained score range between 2-14 of median 9, and mean 8.60, and SD=3.210.
- The post-test (after teaching the pregnant women about Pelvic Floor Muscle Exercise) findings of the present study revealed none of the pregnant women had severe Urinary Incontinence, majority 39(61.9%) had mild Urinary Incontinence, followed by 17(27%) no Urinary Incontinence, and 7(11.1%) moderate Urinary Incontinence, with obtained score range between 0-12 of median 5, and mean 4.84, and SD=2.659.

Level of urinary incontinence	Pre-test		Post-test	
	f	*%*	*f*	*%*
NO Urinary Incontinence	--	--	17	27
Mild	25	39.6	39	**61.9**
Moderate	31	**49.2**	7	11.1
Severe	7	11.1	--	--

Findings related to Descriptive statistics showing minimum score range, Mean. Median, and SD of pre-test and post-test level of Urinary Incontinence among Pregnant women:

- The pre-test level of urinary incontinence among pregnant women with minimum score 2, maximum score 14, followed by mean 8.60, median 9, and standard deviation 2.659.
- The post-test level of urinary incontinence among pregnant women were minimum score 0, maximum score 12, followed by mean 4.84, median 5, and standard deviation 2.659.
- The mean, Median and standard deviation is more in pre-test as compared to post-test level of Urinary Incontinence among pregnant women.

Test	Minimum range	Maximum range	Mean	Median	SD
Pre-test	2	14	**8.60**	9	**3.210**
Post-test	0	12	4.84	5	2.659

Findings related to Effectiveness of Pelvic Floor Muscle Exercise on Urinary Incontinence among Pregnant women:

- The mean post-test scores 4.84±2.659 was lesser than pre-test mean score 8.89±3.393 with mean difference of 3.65 with obtained calculated t value (t=value 6.313, df=62, p=0.001) was found statistically highly significant at $p<0.05$.
- Findings indicates that pelvic floor muscle exercise was effective in improving urinary incontinence among pregnant women.

Which shows that **H_1 was accepted.**

Level of Knowledge	Mean	SD	Mean D	t value	df	P value
Pre-test	8.60	3.21	3.76	6.313	62	**0.001***
Post-test	4.84	2.659				

Findings related to Association between pre-test level of Urinary Incontinence among Pregnant women with their selected demographic variables

The findings revealed that fisher's value age (50.472, df=44, p*0.256^{NS}), religion (59.901, df=44, p*0.282^{NS}), level of education (40.063, df=33, P*0.304^{NS}), occupation (46.052, df=33, p*0.355^{NS}), monthly income (NA), type of family (28.384, df=22, p*0.401^{NS}), marital status (NA), parity (28.693, df=22, p*0.371^{NS}), gestational weeks (56.774, df=44, p*0.353^{NS}). Which depict that there is no association between pre-test level of Urinary Incontinence among Pregnant women with their selected demographic variables with the p value of more than 0.05 level of significance, which signify non-significant.

Which shows that **H_2 was not accepted**.

Demographic Variables	Pre-test urinary incontinence				Fisher's value	df	p value
	No	Mild	Moderate	Severe			
Age in years							
a. 19-25	-	2	4	2			
b. 26-30	-	9	13	-	50.472	44	0.256^{NS}
c. 31-35	-	8	7	3			
d. 36 and above	-	6	7	2			
Religion							
a. Hinduism	-	18	24	4			
b. Christian	-	1	1	-			
c. Muslim	-	-	-	-	59.901	44	0.282^{NS}
d. Buddhist	-	6	5	3			
e. Others	-	-	1	-			
Level of education							
a. No formal education	-	-	-	-			
b. Primary education	-	-	-	-	40.063	33	0.304^{NS}

c. Secondary education	-	4	12	3			
d. Higher secondary	-	9	10	2			
e. Graduate and above	-	12	9	2			
Occupation							
a. Unemployed	-	15	22	7			
b. Unskilled worker	-	-	-	-	46.056	33	0.355^{NS}
c. Skilled worker	-	1	-	-			
d. Professional	-	9	9	-			
Monthly income							
a. ≤ 5,000	-	-	-	-	NA	NA	NA
b. 5,001 – 10,000	-	-	-	-			
c. ≥ 10,001	-	25	31	7			
Type of family							
a. Nuclear family	-	17	22	4	28.384	22	0.401^{NS}
b. Joint family	-	8	9	3			
c. Extended family	-	-	-	-			
Marital status							
a. Married	-	25	31	7	NA	NA	NA
b. Unmarried	-	-	-	-			
c. Separated	-	-	-	-			
d. Divorced	-	-	-	-			
Parity							
a. Primigravida	-	7	10	3	28.693	22	0.371^{NS}
b. Multigravida	-	18	21	4			
Gestational weeks							
a. 6 weeks	-	-	1	-			
b. 8 weeks	-	9	14	2	56.774	44	0.353^{NS}
c. 10 weeks	-	3	1	1			
d. 12 weeks	-	13	15	4			

Discussion

The post-test findings of the present study revealed that none of the pregnant women had severe urinary incontinence, followed by 17(27%) no urinary incontinence, and 7(11.1%) moderate urinary incontinence, and majority 39(61.9%) of the pregnant women had mild urinary incontinence, with obtained score range between 0-12 of median 5, and mean 4.84, and SD=2.659, indicates that pelvic floor muscle exercise was effective in improving urinary incontinence among pregnant women.

The study finding was supported by a study conducted by **Hanan Gaber Mohamed, Samar K. Hafez, Niven R. Basyouni**, to evaluate the "Effect of Pelvic Floor Muscle Strengthening-Kegel's Exercise on severity of stress Urinary Incontinence and quality of life among pregnant women" in the urinary incontinence clinic of Alexandria Regional Center for Women's Health and Development which revealed that Kegel's exercise was effective in improving urinary incontinence and quality of life among pregnant women where the mean of control group was 9.3±18.6 are different to that of study groups 56.7±16.2 who receives teaching of pelvic floor muscle exercise.

In the current study, fisher's value depicted that there was no association between pre-test level of Urinary Incontinence among Pregnant women with their selected demographic variables, where p* value of the demographic variables was more than 0.05 level of significance.

The study was supported by a study on "Effect of pelvic floor muscle strengthening-Kegel's exercise on severity of stress urinary incontinence and quality of life among women", in the urinary incontinence clinic of Alexandria Regional Centre for Women's Health and Development conducted by **Hanan Gaber Mohamed** et al. The study used a Quasi experimental pre/posttest design. The findings stated that there is no statistically significant difference between the two groups in relation to their sociodemographic characteristics for age, marital status and educational level with the p value more than 0.05.

And contradicts with the findings of the study conducted by **Aida Jaffar et al**., on "Urinary incontinence and its association with pelvic floor muscle exercise among pregnant women attending a primary care clinic in Selangor, Malaysia", which depicted that there was a significant association between urinary incontinence and demographic variables at 0.05 level of significance.

Conclusion

The study concluded that pelvic floor muscles exercise was effective in improving urinary incontinence among pregnant women. Thus, measures can be taken to reduce the risk for urinary incontinence among pregnant women by teaching them about pelvic floor muscle exercise and implementing the findings of the current study in health care facilities.

Acknowledgement

The researcher thanks all the participants of the study for their kind cooperation, and grateful to **Janet E. Sansoni**, University of Wollongong, for permission in using the Revised Urinary Incontinence Scale in my study, without which the study would be incomplete.

Reference

1. Abrams P. Cardozo L, Fall M, Griffiths D, Rosier P, Ulmsten U, et al. The standardisation of terminology of lower urinary tract function; report from the Standardisation Sub-committee of the International Continence Society, Neroulrol Urodyn. 2002.
2. Irwin DE, Kopp ZS, Agatep B, Milsom I, Abrams P. Worldwide prevalence estimates of lower urinary tract symptoms. 2011.
3. Sangsawang B, Sangsawang N. Stress urinary incontinence in pregnant women: A review of prevalence, pathology, and treatment. 2013.
4. Lavin JM, Smith ARB, Anderson J, Grant M, Buckley H, Critchley H, et al. The effect of the first pregnancy on the connective tissue of the rectus sheath. 1997.