

Effect of Kegal and Breathing Exercise Adherence on Obstetrical History of Elderly Women with Urinary Incontinence

Samar Shaban Abdelazim Mohamed ¹, Amel Ahmed Hassan Omran ², Elham Abozied Ramadan ¹, Hanan Elzeblawy Hassan^{1*}

¹ Maternal and Newborn Health Nursing, Faculty of Nursing, Beni-Suef University, Egypt

² Obstetrics Gynecological Nursing, Faculty of Nursing Benha University

*Corresponding Author: Hanan Elzeblawy Hassan, Maternal and Newborn Health Nursing, Faculty of Nursing, Beni-Suef University, Egypt.

Received date: February 02, 2024; Accepted date: February 16, 2024; Published date: February 23, 2024

Citation: Abdelazim Mohamed SS, Amel Ahmed Hassan Omran AA, Elham A. Ramadan., Hanan Elzeblawy Hassan1, (2024), Effect of Kegal and Breathing Exercise adherence on Obstetrical History of Elderly Women with Urinary Incontinence, *J. Women Health Care and Issues*, 7(2); DOI:10.31579/2642-9756/187

Copyright: © 2024, Hanan Elzeblawy Hassan. This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Abstract

Background: Kegel's exercise is the cornerstone of noninvasive treatment for UI as it strengthens the muscular components of urethral supports by employs a small number of isometric repetitions at maximal exertion. Aim of the study: The study aimed to assess effect of Kegal and breathing exercise on obstetrical history of elderly women with urinary incontinence.

Design: A quasi-experimental study design was utilized in this study (one group pre and post-test).

Sample: A purposive sample was selected and this study was performed on 100 Menopausal women diagnosed with stress urinary incontinence. Setting: gynecological and urological outpatient clinics Beni-Suef university hospital. Tools: Data was collected using 1) a structure interviewing questionnaire schedule, 2) Pelvic floor muscles exercises checklist.

Results: 70% of the studied sample got delivered more than three times while 56% of them aborted from 1-3 times. Regarding type of delivery, 66% of them delivered spontaneous vaginally, while 29% delivered by cesarean section. 33.3% of women who experienced 1-3 pregnancies reported that their frequency of urinary incontinence is once a week or less often compared to only 14.3% of women who had more than three pregnancies.

Conclusion:

It reveals a negative correlation between deep breathing and kegel exercises adherence and severity of stress urinary incontinence and a positive correlation between number of gravidity and parity and frequency of urinary incontinence with statistical significant association were found.

Recommendations: Health education about the correction of misconceptions about urinary incontinence, which can be an effective means of bringing incontinent women into contact with health care center for early appropriate intervention.

Key words: elderly women; kegal and breathing exercise; obstetrical; urinary incontinence

Introduction

Conservative approaches are least invasive, least expensive, safe and effective ways to treat UI. The aim of the conservative treatment is to stabilize the urethra by increasing pelvic floor muscle strength. They include Kegel's exercise, lifestyle changes, urinary control devices and medications [1-5]. Kegel's exercise is the cornerstone of noninvasive treatment for UI as it strengthens the muscular components of urethral supports by employs a small number of isometric repetitions at maximal exertion [6-11]. The management options range from lifestyle modification to more-invasive surgical interventions. Otherwise healthy women might prioritize resolution of their urinary incontinence by actively engaging in pelvic floor rehabilitation, lifestyle changes (including fluid optimization),

pharmacological treatment or surgery to resolve persistent symptoms. This spectrum of engagement in treatment of urinary incontinence changes over a woman's lifetime and reflects changing health priorities and preferences. Thus, the goals might vary between the ideal of independent continence with minimal symptoms and the compromise of dependent continence (in which the patient remains dry through regular toileting) or contained incontinence (in which the patient remains dry through the use of aids) [1,12-15]. The National Institute for Clinical Excellence recommends a trial of supervised pelvic floor exercises, consisting of at least eight contractions three times a day for a minimum of three months, as a first-line treatment for urinary incontinence. The International Consultation on Incontinence Committee recommends that supervised pelvic floor muscle training for women with

stress incontinence is maintained for 8–12 weeks before reassessment and possible referral for further management if the patient has not improved sufficiently [16-20]. There is evidence suggesting that it may not be necessary to maintain a lifelong regime of pelvic floor exercise, although this may be desired. An optimal pelvic floor exercise regime would change the morphology and position of the muscles to enable sub-conscious contraction, a mechanism thought to occur in continent women. In addition, as with strength training of skeletal muscle, less effort would be needed to maintain muscle tone than to build muscle mass initially [21]. Kegel Breathing is a technique to incorporate breathing and pelvic floor contraction patterns to benefit PC muscle strength while engaging in normal daily routine activities. Normal breathing occurs when the breathing muscle (diaphragm) and the pelvic floor muscles move up and down together in the same direction in a coordinated manner) When performing the Kegel exercises and breathe in, the pelvic floor muscles lift upwards while the diaphragm moves down in the opposite direction [22]. The abdominal cavity, which is shaped like a balloon, is composed of abdominal muscles at the front and right side, Para-spinal muscles at the back, the diaphragm in the upper abdomen, and the pelvic floor muscle the lower abdomen. Due to its structure, the pelvic floor muscle contracts in association with muscles around the abdominal area [23]. According to the previously mentioned physiological functional relationships, It was postulated that diaphragm muscle training (DMT) and abdominal muscle training (AMT) could have similar effects to direct PFM training (PFMT) on pelvic floor muscle strength (PFMS)) and pelvic floor muscle endurance (PFME) [22,24].

Aim of the study

Assess the effect of kegal and breathing exercise on obstetrical history of elderly women with urinary incontinence.

Hypothesis

Kegal and Breathing Exercise adherence will improve Obstetrical History of Elderly Women with Urinary Incontinence post intervention

Subject and methods

Study design:

The study followed a quasi-experimental one group (pre-post) test study design.

Study Setting:

The study was conducted at gynecological and urological outpatient clinics at Beni-Suef University Hospital.

Sampling;

Sample type:

A Purposive sample was used from the above mentioned setting.

Sample Size;

Total sample was 100 women who attended to the previous mentioned setting for a period of 9 months from the beginning of July 2021 until the end of March 2022 with average of three days per week according to the following Criteria.

Tools of data collection:

Two tools were used for data collection;

Tool I: A structured interviewing questionnaire sheet was developed by the researcher in the Arabic language based on a review of recent literatures, under guidance of supervisors. It was consist of **Obstetrics history such as** (number of gravidity, parity, etc).

Tool II: Pelvic floor muscles exercises checklist:

Supportive material: instructional brochure developed by the researcher based on review of literatures contained data regarding the following: Urinary incontinence (definition, causes, risk factors, symptoms, types, complications and management, Kegel exercise (benefits, technique, duration, and frequency), Deep breathing exercise (benefit, technique, duration, frequency).

Validity of the tools:

Tools of data collection were investigated for their content validity by three experts in the field of Obstetric and Gynecological Nursing from Faculty of Nursing, Benha University who were selected to test the content validity of the instruments and to judge its clarity,comprehensiveness, relevance, simplicity, andaccuracy.

Reliability of the tools

Reliability of the study tools was applied by the researcher for testing the internal consistency of the tools by administration of the same tool to the same subjects under similar condition, it done by using Cronbach's alpha test. Reliability of knowledge equal 77.1, reliability for practice equal 87.2, this indicates high degree of reliability of the study tools.

Pilot study:

A pilot study was conducted on 10% (10 women).

Field work (procedure):

The data was collected through a period of nine months, from the beginning of July 2021 until the end of March 2022. The researcher attended at the previous mentioned setting till all the pre-mentioned sample size collected.

The data was collected through the following phases:

Assessment phase

The researcher started to fill the interviewing questionnaire to assess women's personal characteristics, obstetric history, and urinary incontinence history. After that the researcher assessed the frequency, severity of urinary incontinence.

Implementation phase:

The first instructional session, This session included information about urinary incontinence causes and risk factors, possible ways of management, what are the pelvic floor muscles and their functions, definition of Kegel exercise and its benefits on improving the strength and elasticity of pelvic floor muscles and reducing symptoms of stress urinary incontinence . It took about 10 minutes.

The 2nd session included instructions about how to detect the right muscle group for applying Kegel exercises by instructing the studied women to try to stop the urine flow in the middle of urination, and must experience a feeling of squeezing and lifting in the same time. If she could do this, she was using the right muscles; it took 20 minutes. Also, the researcher provided the instructions to women such as take deep breathing during the exercises;

don't try to move legs, buttock, or abdominal muscles during the exercises, also the researcher instructed the studied women to relax for a period equal to the period of holding [25]. At the end of the 3rd month the researcher assessed the accuracy of practicing of deep breathing and Kegel exercises for the last week by using check list tool. Then the researcher instructed the studied women to increase the number of contractions and the duration of holding to 12 seconds and increase the number of contractions and relaxations to 20 times (1st exercise group) and repeat this exercise group 5 times per day (100 contractions per day).

Evaluation phase:

The researcher evaluated effect of practicing deep breathing and Kegel exercises on stress urinary incontinence among elderly women as posttest by reassessing the frequency and severity of urinary incontinence and its effect on women's physical and psychological conditions by using the same tool of pretest and evaluate whether the frequency and severity and the effect of urinary incontinence decreased or not.

Statistical Analysis:

The collected data was revised, coded, tabulated and introduced to a computer using statistical package for social sciences (IBM SPSS .25.0). Data was presented and suitable analysis was done according to the type of data obtained for each parameter.

Results

Figure (1): Illustrates that 70% of the studied sample got pregnant more than three times. Regarding complications during pregnancy; 78% of the studied sample complained from untreated urinary tract (30%), gestational diabetes (19%), ante partum hemorrhage (15%), anemia (7%), and pregnancy induced hypertension (7%) during their previous pregnancies. For the duration between pregnancies; the same figure shows that 51% of the studied women their interval between pregnancies was usually between 2- 3 years, and 29% of them reported that they have not regular intervals

Figure (2): Portrays that 70% of the studied sample got delivered more than three times while 56% of them aborted from 1-3 times. Regarding type of delivery, 66% of them delivered spontaneous vaginally, while 29% delivered by cesarean section. Regarding complications during labor revealed that 46% of the studied sample delivered without any complications while 34% experienced prolonged labor. Also, complications during postpartum period, the same figure showed that 32%, 18%, and 14% of them complained from chronic constipation and post-partum hemorrhage and Puerperal sepsis, respectively.

Table (1): Presents the relation between number of gravid and frequency of urinary incontinence. Frequency of urinary incontinence is more prevalent among women who had more than three pregnancies. It is clear that 33.3% of women who experienced 1-3 pregnancies reported that their frequency of urinary incontinence is once a week or less often compared to only 14.3% of women who had more than three pregnancies. However, 6.7% of women who experienced 1-3 pregnancies reported that their frequency of urinary incontinence is once a day compared to only 4.3% of women who had more than three pregnancies. Moreover, 43.3% versus 24.3% of the studied women who experienced 1-3 pregnancies and who had more than three pregnancies, respectively, reported that they leak two or three times a week. However, 16.7% of women who experienced 1-3 pregnancies reported that their frequency of urinary incontinence is several times a day compared to only 57.1% of women who had more than three pregnancies. The same table illustrates that there were statistical differences in the frequency of urinary incontinence in relation to number of gravidity among the studied sample ($p \leq 0.01$).

Table (2): Presents the relation between number of women's parity and frequency of urinary incontinence. Frequency of urinary incontinence is more prevalent among women who had three delivers. It is clear that 55% of women who experienced one labor reported that their frequency of urinary incontinence is once a week or less often compared to only 14.5% of women who had three deliveries. However, 50% of women who experienced only one labor reported that their frequency of urinary incontinence is once a day compared to only 3.4% & 4.3% of women who had two and three labors, respectively. Moreover, 0.0% versus 44.8% & 26.6% of the studied women who experienced one delivery and who had two or three deliveries, respectively, reported that they leak two or three times a week. However, 0.0% of women who experienced one labor reported that their frequency of urinary incontinence is several times a day compared to only 20.7% and 56.5% of women who had two and three labors. The same table shows that there were highly statistical differences in the frequency of urinary incontinence in relation to number of parity among the studied sample ($p \leq 0.01$).

Table (3): Presents the correlation between deep breathing and kegel exercises adherence and severity of incontinence through the intervention phases. It reveals that there was negative correlation between deep breathing and kegel exercises adherence and severity of stress urinary incontinence.

Table (4): Demonstrates positive correlation between number of gravidity and parity and frequency of urinary incontinence with statistical significant association.

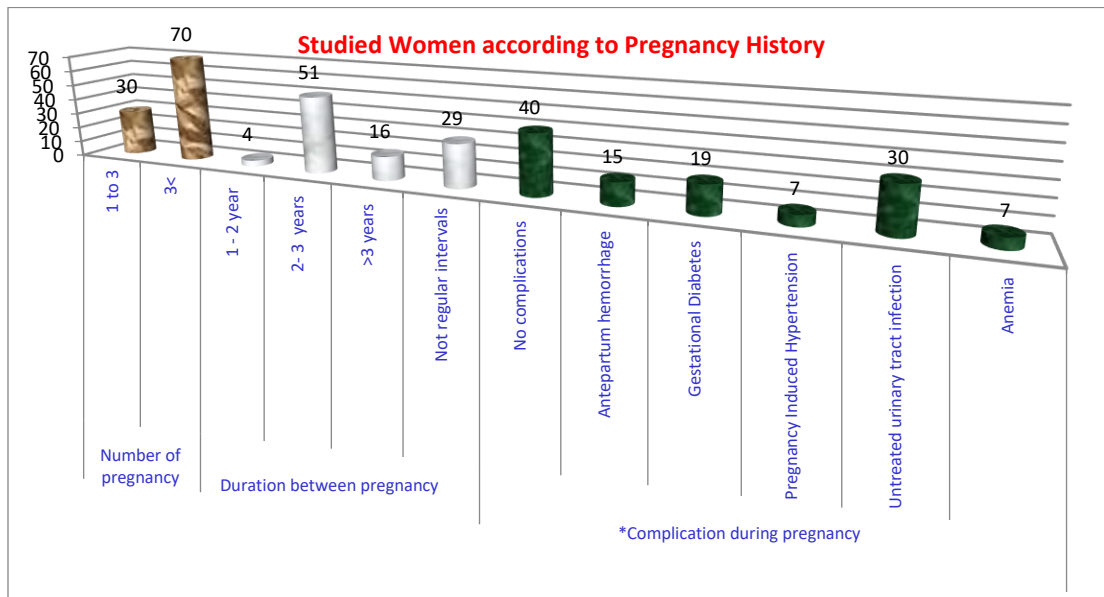


Figure (1): Distribution of studied sample according to pregnancy history (n=100).

* results not mutually exclusive

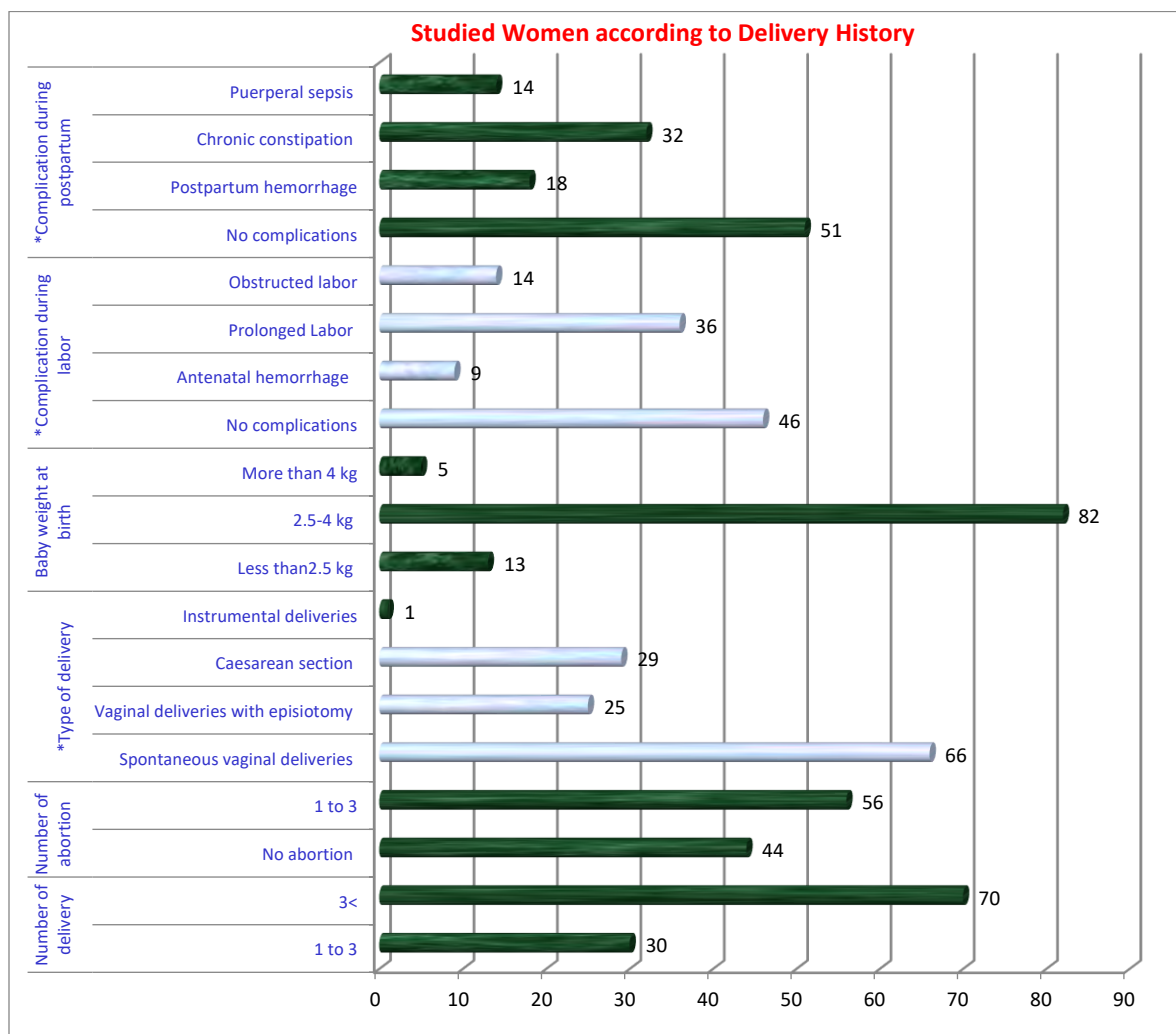


Figure (2): Distribution of studied sample according to delivery history (n=100).

*results not mutually exclusive

Table (1): Statistical relation between number of gravid and frequency of urinary incontinence (N=100)

Frequency of Urinary Incontinence	Number of gravidity				X ²	p-value
	1-3 pregnancies (n=30)		More than three pregnancies (n=70)			
	No	%	No	%		
About once a week or less often	10	33.3	10	14.3	14.233	0.003*
Two or three times a week	13	43.3	17	24.3		
About once a day	2	6.7	3	4.3		
Several times a day	5	16.7	40	57.1		

Chi test *significant at $p \leq 0.05$ **highly significant at $p \leq 0.01$

Table (2): Statistical relation between number of parity and frequency of urinary incontinence (N=100)

Frequency of Urinary Incontinence	number of parity						X ²	p-value
	1		2		3			
	No	%	No	%	No	%		
About once a week or less often	1	50.0	9	31.0	10	14.5	22.141	0.001*
Two or three times a week	0	0.0	13	44.8	17	24.6		
About once a day	1	50.0	1	3.4	3	4.3		
Several times a day	0	0.0	6	20.7	39	56.5		

Chi test *significant at $p \leq 0.05$ **highly significant at $p \leq 0.01$

Table (3): Correlation between deep breathing and kegel exercises adherence and severity of incontinence through the intervention phases

Deep breathing and kegel exercise adherence	Post intervention severity of incontinence	
	r	p-value
1 st week of the 1 st month	-0.369	0.000**
At the end of the 1 st month	-0.709	0.000**
At the end of the 2 nd month	-0.478	0.000**
At the end of the 3 rd month	-0.556	0.000**

Person correlation coefficient test *significant at $p \leq 0.05$ **highly significant at $p \leq 0.01$

Table 4: Relationship between obstetrics history and frequency of urinary incontinence (N=100)

Obstetrics history	Frequency of urinary incontinence	
	R	p-value
Number of gravidity	0.294	0.003*
Number of parity	0.303	0.002*

Person correlation coefficient test *significant at $p \leq 0.05$ **highly significant at $p \leq 0.01$

Discussion:

The findings of the current study will be discussed correlation between obstetric history (number of gravidity and parity) and frequency of urinary incontinence and regularity of deep breathing and kegel exercise and severity of urinary incontinence. Regarding obstetric history of the studied women, the current study showed that more than two thirds of them were got pregnant and delivered more than three times, this was in correspondence with Ptak et al., (2019) who studied The Effect of Pelvic Floor Muscles Exercise on Quality of Life in Women with Stress Urinary Incontinence and Its Relationship with Vaginal Deliveries who reported that the vast majority of the study and control groups were multigravida and multipara [26].

Also Agarwal, B. K., & Agarwal (2019) who studied Urinary incontinence: prevalence, risk factors, impact on quality of life and treatment seeking behavior among elderly aged women showed that half of the control group and more than two fifth of the study group were pregnant and delivered more than three [27]. In the same line Ahmed et al., (2019) who studied Urinary

Incontinence in Healthy Saudi Women and found that more than two thirds of women got pregnant and delivered more than three times, while one third of them got pregnant and delivered one to three times [28].

In addition to mode of delivery the present study showed that two thirds of the studied women delivered spontaneous vaginally, while about one third delivered by cesarean section this is agree with Bogner et al., (2019) who studied Urinary incontinence and psychological distress in community-dwelling older adults and clarified that two thirds of the studied women delivered spontaneous vaginally, while about one third delivered by cesarean section and (SUI) was more prevalent among women who were delivered vaginally than those delivered by Cesarean section. From the researcher point of view this is due to damaging to the pubourethral ligaments, and the voluntary external urethral sphincter with its motor supply after vaginal delivery [29]. This also consistent with Kuh et al., (2019) who studied Urinary incontinence in elderly women: Childhood enuresis and other lifetime risk factors, Peyrat et al., (2020) who studied the Prevalence and

risk factors of urinary incontinence in elderly women and Rortveit et al., (2020) who studied the urinary incontinence after vaginal delivery or cesarean section all of them mentioned that Cesarean section appears to be protective especially if the women does not labour before vaginally [30-32]. Also, Al-Badr et al., (2018) who studied the Prevalence of urinary incontinence among Saudi women and demonstrated that UI was increased among women who had undergone vaginal delivery which supports the protective effect of cesarean delivery [33]. From the researcher point of view this is might be because vaginal delivery can damage bladder nerves, and supportive tissue also may lead to obstructed labor, and perineal laceration may occur, and this main causes of stress urinary incontinence. In contrast Ahmed et al., (2019) who studied the Urinary Incontinence in Healthy Saudi Women and showed that cesarean delivery was correlated to suffering from UI, where two thirds of the studied women who experienced cesarean delivery were suffered from UI, vaginal delivery was less common between UI patients only one third of them, there was a significant difference between UI female patients and healthy female regarding type of delivery [27]. Moreover Ghafouri et al., (2018) who studied the Urinary incontinence in Qatar: a study of the prevalence, risk factors and impact on quality of life and reported that the type of delivery wasn't a risk factor for UI [34]. Concerning correlation between number of parity and frequency of urinary incontinence, the current study revealed that there was positive correlation between number of parity and frequency of urinary incontinence pre and post intervention with highly statistical significant difference (p value=0.000), this was similar to Ahmed et al (2019) who studied the Urinary Incontinence in Healthy Saudi Women and revealed that multi-parity was related to the urinary incontinence prevalence [28]. Also Rizk et al (2019) and Melville et al, (2019) who studied the Urinary Incontinence in The United States Women and reported that urinary incontinence prevalence was more common in females who had three or more births [35-36]. Concerning the severity of urinary incontinence symptoms , the current study showed that there was negative correlation between deep breathing and kegel exercise adherence and severity and frequency of urinary incontinence , this result in consistent with Hung et al., (2019) who assessed the Exercise Adherence to Pelvic Floor Muscle Strengthening is not a Significant Predictor of Symptom Reduction for Women With Urinary Incontinence, Bo (2020) who assessed Pelvic floor muscle strength and response to pelvic floor muscle training for stress urinary incontinence and Chen & Tzeng (2019) who studied Path analysis for adherence to pelvic floor muscle exercise among women with urinary incontinence, all of them reported that the more adherence to pelvic floor muscle training exercise , the more improvement in urinary incontinence symptoms and decrease in frequency of urinary incontinence [37, 1, 38].

Conclusion:

It reveals a negative correlation between deep breathing and kegel exercises adherence and severity of stress urinary incontinence and a positive correlation between number of gravidity and parity and frequency of urinary incontinence with statistical significant association were found.

Recommendation:

Health education about the correction of misconceptions about urinary incontinence, which can be an effective means of bringing incontinent women into contact with health care center for early appropriate intervention.

References:

1. Bø, K (2020): Pelvic floor muscle training in treatment of female stress urinary incontinence, pelvic organ prolapses and sexual dysfunction. *World Journal Urology*; 12(3): 437-443.
2. Mostafa H., Mostafa H., Tantawi H., Hassan H. (2018). Developing and Validating an Evaluation Tool for Evaluating Nursing Faculty Staff Assistants' Performance by the Students. *International Journal of Novel Research in Healthcare and Nursing*. 6(1): 128-137.
3. Mohamed W., Hassan H. (2019). Educational Program to Enhance Pregnant Women's Knowledge about Dental Care and Periodontitis Outcomes. *ARC Journal of Nursing and Healthcare*,5(3): 23-33.
4. Farg D., Hassan H. (2019). Surgical Repair versus Non-Surgical Management of Spontaneous Perineal Tears that Occur during Childbirth. *American Journal of Nursing Research*, 7(5): 781-792.
5. Ramadan E., Eldesokey A., Hassan H. (2020). Effect of an Educational Package on Knowledge, Practices, and Attitude of Premenopausal Women Regarding Sexuality. *American Journal of Nursing Research*, 8(5): 495-505.
6. Kegels Exercises: A crucial issue during woman's lifespan. *American Research Journal of Public Health*, 2020, 3(1):1-5.
7. Ahmed M., Hassan H., Mohamed A., Saleh A. (2024). Knowledge and Practice of Nurses toward Preventive Measures of Elderly Patients with Viral Hepatitis B and C in the Dialysis Unit. *Nile journal for geriatric and gerontology*, 7(1): 70-92.
8. Hassan H. (2019). Integrative Nursing Science in Women's Pre-conceptional Wellness. *International Journal of Health and Biological Sciences*,2(1): 17-18.
9. Ghanim S., Mohamed S., Mohamed A., Hassan H. (2024). Nurses' Knowledge and Practice for Reducing Falls among Older Adult Women. *Nile journal for geriatric and gerontology*, 7(1): 104-126.
10. Farag D., Mohamed S., Malk R., Hassan H. (2024). Effectiveness of Educational Intervention Program about Cervical Cancer on Working Women's Knowledge, Attitude, and Practice at Beni-Suef University. *Egyptian Journal of Health Care*, 15 (1): 1-16.
11. Mohamed S., Omran A., Hassan H., Abo zied E. (2023): Effect of Deep Breathing and Kegel Exercises on Stress Urinary Incontinence among Elderly Women. *Benha Journal of Applied Sciences*, 8 (4): 81-89.
12. Hassan H., Mohamed S., Ramadan E., Omran A. (2023). Urinary Incontinence among Menopausal Northern Upper Egyptian Women Impact of Deep Kegel and Breathing Exercises. *New Medical Innovations and Research*, 4(9): 1-12.
13. Mohamed S., Hassan H, Omran A., Ramadan E. (2024). Effect of Urinary Incontinence on Women's Physical Condition. *Journal of Community Medicine and Public Health Reports*, 5(2): 1-5.
14. Ghanem S., Mohammed A., Mohammed S., Hassan H. (2024). Relationship between Nurses' Practices Regarding Fall Prevention among Elderly Women and their personal

- Characteristics. *Journal of Orthopaedic Science and Research*,5(1):1-7.
15. Omran A., Hassan H., Ramadan E., Mohamed S. (2024). Effect of Practicing Deep Breathing and Kegel Exercises on Menopausal Urinary Incontinence at Beni-Suef. *Public Health Open Access*, 8(1): 1-10.
 16. Nygaard, C C & Betschart, C & Hafez, A et al. (2019): Impact of menopausal status on the outcome of pelvic floor physiotherapy in women with urinary incontinence. *International Urogynecol Journal*. 12(5): 123:144
 17. Hassan H. (2019). The Impact of Evidence-Based Nursing as The Foundation for Professional Maternity Nursing Practices. *Open Access Journal of Reproductive System and Sexual Disorder*, 2(2): 195-197.
 18. Ahmed S., Saber N., Hassan H., Heggy E. (2017). Impact of Pregnant Advanced Cardiopulmonary Resuscitation Training Program on Maternity Nurses' knowledge, Attitude and Practice in Beni-Suef City. *American Research Journal of Nursing*,3(1): 1-11.
 19. Nasr E., Hassan H., Sheha E. (2016). Psychological Consequences of Hypertensive Disorders among Pregnant Women. *Scientific Research Journal*. 4(9): 1-8.
 20. Hassan H., Zedan H., Farag D. (2024). Successful Vaginal Birth Subsequent to Cesarean Section. *Mansoura Nursing Journal*. 11(1).
 21. Radzimińska A, Strączyńska A, Weber-Rajek M, Styczyńska H, Strojek K, Piekorz Z. (2018): The impact of pelvic floor muscle training on the quality of life of women with urinary incontinence: a systematic literature review. *Clinical Interventions in Aging*; 13: 957–965
 22. Hwang, U., Lee, M., Jung, S., Ahn, S., Kwon, OH (2021): Effect of pelvic floor electrical stimulation on diaphragm excursion and rib cage movement during tidal and forceful breathing and coughing in women with stress urinary incontinence. Published online 2021 Jan 8. doi: 10.1097/MD.00000000000024158.
 23. Palkhivala A. (2019): Pelvic muscle training may relieve SUI long term: study reports some patients experience extended relief after 8 weeks' training. *Urology Times* 2005 Dec 1.
 24. Hassan H., Mohamed S., Ramadan E., Omran A. (2024): Deep Kegel and Breathing Exercises: Effect on Personal Characteristics and Body Mass Index of Elderly Women with Urinary Incontinence. *American Journal of Clinical Medicine Research*, 12(1)
 25. El-Deen, A.N (2020): Efeect of Kegel's Exercises on First Degree Pelvic Organ Prolapse Among Women, Nursing Practice, 33rd World Congress on Advanced Nursing Practice.5(5).
 26. Ptak M, Ciecwiez S, Brodowska A, Starczewski A, Nawrocka-Rutkowska J, Diaz-Mohedo E, Rotter I. (2019): The Effect of Pelvic Floor Muscles Exercise on Quality of Life in Women with Stress Urinary Incontinence and Its Relationship with Vaginal Deliveries: A Randomized Trial. *Hindawi BioMed Research International*; Article ID 5321864, 7 pages
 27. Agarwal, B. K., & Agarwal, N. (2019): Urinary incontinence: prevalence, risk factors, impact on quality of life and treatment seeking behavior elderly aged women. *International Surgery Journal*, 4(6): 1953-1958.
 28. Khalifa M, Farag M, Abd El Aziz A, Ali S. Ahmed N (2019): Assessment of Psychological Symptoms and Quality of Life among Women with Urinary Incontinence. *J Gynecol Res Obstet*; 3(2): 064-069.
 29. Bogner H. R, Gallo J. J, Sammel M. D, & Ford D. E, Armenian H. K, and Eaton, W. W(2019): Urinary incontinence and psychological distress in community-dwelling older adults. *Journal of the American Geriatrics Society*; 50:489–495
 30. Kuh D, Cardozo L and Hardy R (2019): Urinary incontinence in elderly women: Childhood enuresis and other lifetime risk factors in a British prospective cohort. *J. Epidemiol. Commun. Health*, 53: 453–458.
 31. Peyrat L, Haillot O, Bruyère F, Boutin JM, Bertrand P and Lanson Y (2020): Prevalence and risk factors of urinary incontinence in elderly women. *BJU. Int.*, 89:61-66.
 32. Rortveit G, Daltveit AK, Hannestad YS and Hunskaar S. (2020): Norwegian epincont study. Urinary incontinence after vaginal delivery or cesarean section. *N. Engl. J. Med.*, 348:900-907.
 33. Al-Badr A, Brasha H, Al-Raaddadi R, Noorwali F and Ross S (2018): Prevalence of urinary incontinence among Saudi women. *International Journal of Gynecology and Obstetrics*, 117:160-163.
 34. Ghafouri A, Alnaimi AR, Alhothi HM, Alroubi I, Alrayashi M, Molhim NA et al. (2018): Urinary incontinence in Qatar: a study of the prevalence, risk factors and impact on quality of life. *Arab Journal of Urology*, 12:269–274.
 35. Rizk DE, Shaheen H, Thomas L, Dunn E and Hassan MY. (2019): The prevalence and determinants of health care-seeking behavior for urinary incontinence in United Arab Emirates women. *Int. Urogynecol. J. Pelvic Floor Dysfunct.*, 10(3):160–165.
 36. Melville JL, Katon W, Delaney K and Newton K. (2019): Urinary Incontinence in US Women: a population-based study. *Arch Intern. Med.*, 165(5):537–542.
 37. Hung H-C, Chih S-Y, Lin H-H, Tsauo J-Y. (2019): Exercise adherence to pelvic floor muscle strengthening is not a significant predictor of symptom reduction for women with urinary incontinence. *Arch Phys Med Rehabil*; 93:1795-1800.
 38. Chen SY, Tzeng YL (2019): Path analysis for adherence to pelvic floor muscle exercise among women with urinary incontinence. *J Nurs Res.*, 17: 83-92.



This work is licensed under Creative Commons Attribution 4.0 License

To Submit Your Article Click Here:

Submit Manuscript

DOI: [10.31579/2642-9756/187](https://doi.org/10.31579/2642-9756/187)

Ready to submit your research? Choose Auctores and benefit from:

- fast, convenient online submission
- rigorous peer review by experienced research in your field
- rapid publication on acceptance
- authors retain copyrights
- unique DOI for all articles
- immediate, unrestricted online access

At Auctores, research is always in progress.

Learn more <https://www.auctoresonline.org/journals/women-health-care-and-issues>