

The Effect of Kegel Exercises Program on Patients Diagnosed with Chronic prostatitis

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Abstract:

Chronic prostatitis is a long-term condition that is poorly understood, difficult to treat and for which there is currently no cure. It causes a range of disruptive symptoms, including urogenital pain, lower urinary tract symptoms, psychological issues and sexual dysfunction. The aim of the study: To study the effect of Kegel exercises on patients diagnosed with chronic prostatitis. Materials and Methods: A purposive sample was used for this study, 94 patients with chronic prostatitis. This study was conducted at the urology outpatient clinics at El-Fayoum University and General Hospitals at El-Fayoum City. Tools: Data were collected utilizing the following three tools: I: An interview questionnaire. II- The National Institute of Health Chronic Prostatitis Symptom questionnaire, and III- Hamilton Anxiety Rating Scale. These tools were used for data collection before and after implementation of the Kegel exercises program. Results: The present study revealed that there is a highly statistically significant difference between total practice scores in pre, post and follow up test and the majority of the studied samples had a satisfactory practice in post test. As well as the study showed that there was a highly statistically significant relationship of total practice with level of education and social status. Conclusion: Based on the findings of the study it was concluded that the implementation of Kegel exercises program led to improvement in both knowledge and practices regarding chronic prostatitis. The improvement in knowledge is essential to improve practice.

Recommendation: It is recommended that studies on large samples should be conducted to be able to generalize results.

Key Word: Chronic prostatitis, Kegel exercise, patients' knowledge, practice

I. Introduction

The prostate gland is the largest accessory gland of the male reproductive system, located at the base of the bladder, surrounding part of the urethra (the tube that carries urine from the bladder) in men. It is composed of glandular and stromal elements, which are tightly fused within a pseudo capsule. The inner layer of the prostate capsule is composed of smooth muscle with an outer layer covering of collagen. The prostate also functions in reproduction by producing part of the seminal fluid, which helps to transport sperms. Prostatitis is a common problem, affecting up to 25% of all men ¹ Prostatitis comprises of a group of syndromes that affect almost 50% of men at least once in their life time. It has been divided into four distinct categories by National Institutes of Health namely (1) acute bacterial prostatitis; (2) chronic bacterial prostatitis; (3) chronic prostatitis/chronic pelvic pain syndrome (CP/CPPS) which is further divided into inflammatory and non-inflammatory CP/CPPS; and (4) asymptomatic inflammatory prostatitis. ²Chronic prostatitis is a common urological diagnosis in men of all ages. Category III CP/ CPPS is the most complex type and accounts for 90–95% of prostatitis diagnoses, which causes many men significant morbidity and has a detrimental effect on their quality of life. The main four symptom domains of CP are urogenital pain, lower urinary tract symptoms (LUTS), psychological issues and sexual dysfunction ³ Kegel exercises are essential preventive measures to maintain muscle tone and contraction of the muscles of the perineum, which will take no more than 10 minutes a day. It will help to eliminate the formation of stagnant foci in the prostate gland. Kegel exercises are designed to strengthen the muscles of pelvic floor. Kegel exercises are often recommended to patients with chronic prostatitis to improve blood circulation in the inguinal region which helps to improve the nutrition of inflamed tissues ⁴ The Community Health

Nurse (CHN) plays an important role toward patients complain from chronic prostatitis through applying the three levels of prevention: primary, secondary and tertiary levels of prevention. The CHN should provide appropriate physical and psychological health education and emotional support to patients with chronic prostatitis. The community health nurse has key roles in the areas of assessment, education and referral. Formal and informal culturally appropriate education programs need to be developed and implemented to disseminate chronic prostatitis information. The CHNs must take advantage of their leadership position to educate the public and identify patients at risk for chronic prostatitis disease, while working collaboratively among all healthcare disciplines⁵.

II. Material And Methods

This purposive study was conducted at the urology outpatient clinics in El-Fayoum University and general Hospitals in El-Fayoum City, from the end of December 2020 until June 2021. A total of 91 patients were included in the study of age ≥ 25 years.

Study Design: A quasi-experimental research design was used in this study

Study Location: The present study was conducted at the urology outpatient clinics in El-Fayoum University and general Hospitals in El-Fayoum City

Study Duration: Data collection for this study was carried out in the period from the end of December 2020 until June 2021.

Sample size: 94 patients.

Sample size calculation: The sample size were consisted of 94 patients diagnosed with chronic prostatitis that represent 10% from total annual patient admission (1000) in Urology outpatient clinics at El-Fayoum university Hospital and General Hospital at El-Fayoum City.

Subjects & selection method: The study population was drawn from chronic prostatitis patients who presented at the urology outpatient clinics in El-Fayoum University and general Hospitals in El-Fayoum City, from the end of December 2020 until June 2021. A total of 91 patients were included in the study of age ≥ 25 years.

Inclusion criteria:

- The patient aged 25 years & more
- Patients diagnosed with chronic prostatitis in urology outpatient clinics.

Procedure methodology

Necessary approvals were obtained from Faculty of Nursing, Helwan University ethical committee to conduct the study. Permission was obtained verbal and written from each patient to participate in the study before data collection. Patients were informed about the aim of the study and what would be done with result. They were given an opportunity to refuse to participate in the study and they were notified that they could withdraw at any stage of the research. Also, they were assured that the participation in the study is entirely voluntary; anonymity, privacy and confidentiality were assured.

A. Data collection tools:

- The data were collected through using the following tools:

Tool I: An Interview Questionnaire:

Data for this study were collected by using a questionnaire sheet which was designed by the researcher to gather the following data:-

Part I: Socio-demographic data of the patients such as age, marital status, address, family number, number of children, room number, crowding index, level of education, occupation, social class, marriage age, number of years of marriage and monthly income. This part is composed of 11 items.

Part II: Assess the patient's past and present medical, and surgical history such as presence of any chronic disease as hypertension, diabetes and how the disease was discovered, signs, symptoms and complications. This part is composed of 5 items.

Part III: This part is related to knowledge of patients regarding Kegel exercises. Data were collected pre, post and follow up program. It includes questions about meaning of, benefits for patient diagnosed with chronic prostatitis, importance and precautions related to Kegel exercises. This part composed is of 15 items.

Knowledge scoring system

The scoring system regarding patient's knowledge was as follows: patient who gave complete correct answer was given 3 points A patient who given incomplete correct answer was given 2 points and didn't know answer was given 1 point. The total score is 45 points

The total knowledge score level was categorized as follows:

- 1- Good level of knowledge >75%. (37.5-45)
- 2- Fair level of knowledge 50% - <75%. (22.5-37)
- 3- Poor level of knowledge < 50%. (0- 22)

Part IV: This part is related to patient's practices regarding Kegel exercises as reported by patients through pre, post and follow up interviews. It included questions about: Reasons for practicing Kegel exercises, the frequency of performing Kegel exercises and the benefits of practicing Kegel exercises. This part is composed of 14 items.

Practice scoring system

The scoring system regarding patient' reported practices regarding Kegel exercises were as follow: - practices was given (2) points. - practices not done or did not know was given (1) point. The maximum points are 28 points and the minimum points are 14 points. The total score level will be as follows:

- 1 - Satisfactory practices >60% (16-28)
- 2 - Unsatisfactory practices < 60% (0- 16)

Tool II- The National Institute of Health Chronic Prostatitis Symptom Questionnaire (NIH-CPSI) adopted from (Clemens et al., (2009): Questions used to assess characteristics of pain and urinary symptoms in men with chronic prostatitis through pre, post and follow Kegel exercise program such as how often have you had a sensation of not emptying their bladder completely after they finished urinating, over the last week?, how often have they found it difficult to postpone urination? and experienced any pain or discomfort in area between rectum and testicles.). This is part composed of 13 items.

Tool III - Hamilton Anxiety Rating Scale (HAM-A): Adopted from (Hamilton M., 1988). Used to assess the severity of anxiety through pre, post and follow kegel exercise program such as anxious mood (Worries, anticipation of the worst, fearful anticipation, irritability).

Hamilton anxiety scoring system

The tool includes 11 items, each item is scored on a scale of 0 indicate no anxiety to 4 (severe anxiety), with a total score range of 0–44.

1. <17 indicate mild anxiety. (0-9.3)
2. 18–24 moderate anxiety. (9.35-13.2)
3. 25–44 severity severe anxiety. (13.2-44)

Validity

-The study tools were tested for content and face validity by jury of five experts in the field of community health nursing to evaluate the individual items as well as the entire instrument as being valid and appropriate to test what it supposed to measure. The experts recommended that there were three questions repeated anxiety rating scale and could be removed and content validity of all tool's study variables.. The face validity of the questionnaire was calculated based on experts' opinion after calculating content validity index (%) of its items and it was 94%.

-The experts were asked to evaluate the individual items on the study tools in relation to its relevance and appropriateness in terms of the construct and if the items adequately measure all dimensions of the construct. The experts were asked to evaluate individual items and rate items on a 4-point scale as follows; not relevant scored (1), Little relevant scored (2), relevant scored (3) and very relevant (4).

Tools reliability:

The study tools were subjected to assessment of internal consistency reliability using Spearman-Brown Prophecy Formula ($r^1 = 2(3)/(1+r)$), where r^1 estimated reliability of the entire test and r estimated correlation coefficient computed on the split halves, it was 0.896.

-A pilot study was carried out on 10% of the study subjects and was excluded from the total sample. To assess reliability, the study tool was tested by the pilot subjects at first session for calculating Cronbach's Alpha which was

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0.927 for knowledge questionnaire, 0.985 for reported practices questionnaire, 0.914 for Hamilton anxiety and 0.925 for sexual dysfunction.

II- Operational design:

The operational design for this study includes the following:

Preparatory phase:

Tools were developed by investigator after reviewing of related literature and theoretical knowledge of various aspects of the study using books, articles, internet periodicals and magazines.

Pilot study:

-A pilot study was carried out on 10% from the study subjects and was excluded from the total sample. To assess reliability, the study tool was tested by the pilot subjects at first session for calculating Cronbach's Alpha which was 0.927 for knowledge questionnaire, 0.985 for practices questionnaire, 0.914 for Hamilton anxiety and 0.925 for sexual dysfunction

Field work:

Data collection for this study was carried out in the period from the end of December 2020 until June 2021. The investigator collected data during the time of Urology Outpatient clinics, two day per week from 9am to 2pm., in which the investigator met every patient included in the study, after taking formal consent of each patient and explaining the purpose of the study, and the components of the tools. Patients were assured that the information collected would be treated confidentially and that it would be used only for the purpose of the study.

- **Assessment phase:** This phase included the assessment of patient's past and present medical history, patient knowledge and practice about Kegel exercise. Personal communication was done with patients to explain the purpose of the study to them.
- The researchers select patients who fulfilled the study criteria, then explained the purpose of the study and obtained their consent. Then the researcher conducted the assessment process sometimes individually and other time in groups.
- All patients in outpatient clinic were interviewed to collect their socio-demographic data.
- The researchers used the tool I (structured interviewing questionnaire) to assessing socio-demographic characteristics such as; (age, residence, and occupation.....) The questionnaire sheet was designed in Arabic form to avoid misunderstanding, it consists of four parts: Socio-demographic data of the patients, past and present medical, and surgical history, knowledge of patients regarding Kegel exercises and reported patient's practices regarding Kegel exercises.
- Then the researchers used tool II that consisted of 13 items. Questions used to assess of characteristic of pain and urinary symptoms in men with chronic prostatitis such as; (Frequency, Incomplete Emptying and Intermittency) (pretest).
- Then the researcher used tool III that consisted of 11 items. Used to assess the severity of anxiety, such as; (anxious mood, tension and fears) (pretest).

Planning and implementation phases:

Kegel exercise program general objective is to enhance Kegel exercise practice to relieve pain, remove anxiety, improve sexual function and improve patient's knowledge about Kegel exercises.

Based on the result of the pre-test questionnaire the researchers was implemented the program on four sessions.

First session:

The researchers was explained the aim of the program and collected data concerning assessment before implement program sessions.

Second session:

Orientation of patients and to raise their knowledge about Kegel exercise program.

Third session:

The researchers was taught patients how to perform Kegel exercise.

Fourth session:

The researchers evaluated the effectiveness of Kegel exercise program on study sample after three months of implementing the program.

Teaching methods used included; group discussion, brainstorming, role play, demonstrations and re-demonstration, an additional power point presentation and handouts were used.

Two sessions were given to every group of patients (5-7 participants) in each session. Every session took from 20-30 minutes. The implementation of the program was done in the waiting room in the outpatient clinic using simple and clear posters and different teaching strategies were used according to patients, level of understanding .The researchers used laptop screen for data show. A brochure was distributed to all studied sample.

Evaluation phase:

Follow up; after three months, posttest was done after post intervention to assess progress of the patient manifestation and any problems raised.

III. Administrative design:

Permission was obtained by submission of an official letter issued from Dean of Faculty of Nursing, Helwan University, to the Manager of El-Fayoum University Hospital and El-Fayoum General Hospital, including aim of the study and methods of data collection to obtain the permission to visit each hospital and conduct the study. Each hospital manager was informed about the study, date and time of data collection.

IV. Statistical design:

The collected data were organized, tabulated and statistically analyzed using SPSS software (Statistical Package for the Social Sciences, version 19, SPSS Inc. Chicago, IL, USA). For quantitative data, the range, mean and standard deviation were calculated. For qualitative data, which describe a categorical set of data by frequency, percentage or proportion of each category, comparison between two groups and more was done using Chi-Square test (χ^2). For comparison between means of two groups of non-parametric data of independent samples, Z value of Mann-Whitney test was used. Correlations between variables were evaluated using Pearson’s Correlation Coefficient (r) for quantitative data and Spearman Rank correlation for qualitative or ranked data. Significance was adopted at $p < 0.05$ for interpretation of results of tests of significance.

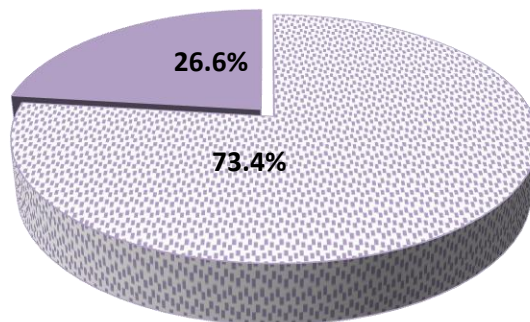
Result

Table (1) illustrate socio-demographic characteristic of study subjects. It was found that 45.7% of the studied sample were in the age group of 41-55 years while 23.4% of them were in the age group of 25-40 years with mean age 41.57 ± 11.01 . Regarding level of education, it was found that 23.4% of them have higher education and 52.1% of the studied sample were unemployed. This table also showed 36.2% of them were married since $25 < 30$ years

Table (1): Frequency distribution of the studied patients with chronic prostatitis regarding Socio-demographic Characteristics (n=94).

Items	N	%
Age:		
25-40	22	23.4
41-55	43	45.7
More than 55	29	30.9
Mean±SD	41.57±11.01	
Marital Status:		
Single	7	7.4
Married	77	81.9
Divorced	2	2.2
Widowed	8	8.5
Residence:		

Rural	60	63.8
Urban	34	36.2
Family members:		
1-3 members	1	1.1
4-6 members	44	46.8
7-9 members	33	35.2
More than 10	16	17
Number of children		
No children	7	7.4
1-3 children	30	31.9
4-6 children	37	39.4
7-9 children	18	19.1
>10 children	2	2.2
Number of house rooms		
2 rooms	39	41.5
3 rooms	45	47.9
4 rooms	10	10.6
crowding index		
2-3	60	63.8
4-5	25	26.6
>5	9	9.6



No
 Yes

Figure (1): Frequency distribution of the studied patients with chronic prostatitis regarding Past history of surgical intervention (n=94).

This figure shows that, 26.6% of the study sample had a history of previous surgery, while 73.4% of the study sample had not a history of previous surgery.

Follow up after 3 months .

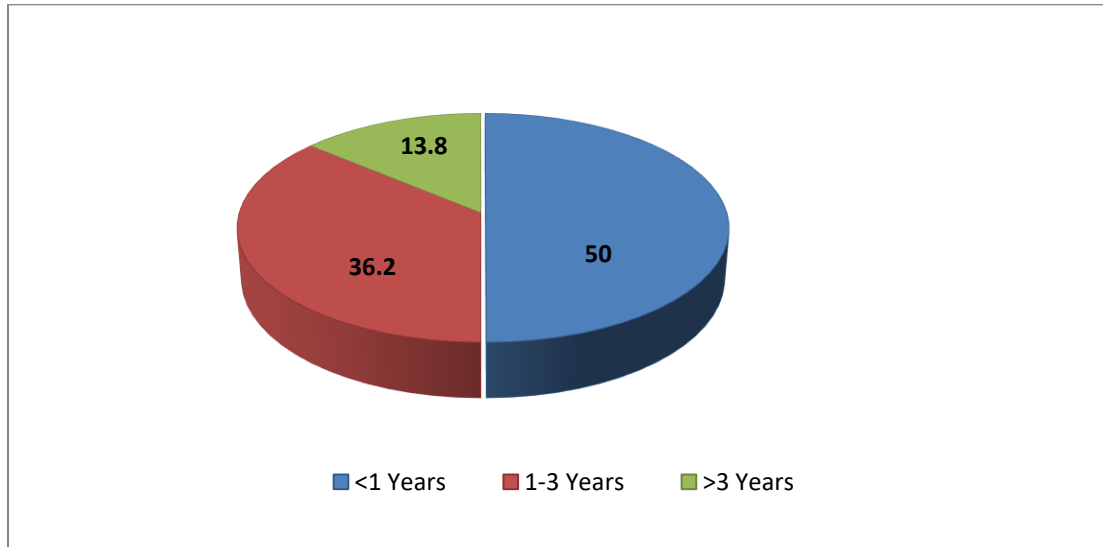


Figure (2): Frequency distribution of the studied samples with chronic prostatitis regarding duration of the disease (n=94).

This figure showed that, 50.0% of the studied samples were suffering from a disease from less than 1years ago while 13.8 of them suffering from disease, from more than 3years.

Table (2): illustrates there was highly statistical difference improvement of patient’s symptoms at post and follow up Kegel exercise program. It was found that (29.8%, 35.1% and 18.1%) respectively of the studied samples of them usually had incomplete, emptying, frequency, urgency compared to (1.1%, 0% and 4.3%) and (1.1%, 1.1% and 2.1%) respectively of them in posttest and follow up test

Table (2): Response of the studied sample regarding chronic prostatitis urination symptoms pre, immediate post and follow up implementation of the program (n=94).

Items of symptoms	Pre		Post		Follow up		Test of significance	
	N	%	N	%	N	%	F value	P& (η_p^2)
Incomplete Emptying:								
Never	2	2.2	52	55.3	49	52.1	253.66	0.732 0.000
Rarely	10	10.6	23	24.4	22	23.4		
Sometimes	16	17.0	12	12.8	16	17.0		
Often	22	23.4	6	6.4	6	6.4		
Usually	28	29.8	1	1.1	1	1.1		
Always	16	17.0	0	0	0	0		
Frequency:								
Never	0	0	54	57.4	52	55.3	325.32	0.778 0.000
Rarely	10	10.6	29	30.9	29	30.9		
Sometimes	12	12.8	7	7.4	8	8.4		

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Often	22	23.4	4	4.3	4	4.3		
Usually	33	35.1	0	0	1	1.1		
Always	17	18.1	0	0	0	0		
Intermittency:								
Never	0	0	49	52.1	45	47.9	47.77	0.339 0.000
Rarely	16	17.0	7	7.4	8	8.5		
Sometimes	39	41.5	24	25.5	26	27.7		
Often	22	23.4	6	6.4	6	6.4		
Usually	12	12.8	8	8.5	9	9.6		
Always	5	5.3	0	0	0	0		
Urgency:								
Never	12	12.8	53	56.4	51	54.3	138.16	0.598 0.000
Rarely	20	21.3	17	18.1	17	18.1		
Sometimes	20	21.3	12	12.8	13	13.8		
Often	25	26.6	8	8.5	8	8.5		
Usually	17	18.2	4	4.4	5	5.3		
Always	12	12.8	0	0	0	0		
weak Stream:								
Never	0	0	51	54.2	49	52.1	144.65	0.609 0.000
Rarely	14	14.9	25	26.6	26	27.7		
Sometimes	25	26.6	13	13.8	13	13.8		
Often	17	18.1	4	4.3	4	4.3		
Usually	20	21.3	1	1.1	2	2.1		
Always	18	19.1	0	0	0	0		
Straining:								
Never	2	2.1	45	47.9	44	46.8	39.82	0.300 0.000
Rarely	20	21.3	17	18.1	16	17.0		
Sometimes	35	37.2	12	12.8	12	12.8		
often	19	20.2	14	14.9	15	16.0		
usually	15	16.0	6	6.3	7	7.4		
Always	3	3.2	0	0	0	0		
Nocturia.								
None	6	6.4	67	71.3	61	64.9	123.34	0.570 0.000
1 Time	21	22.3	19	20.2	23	24.5		
2 Times	33	35.1	6	6.4	6	6.4		
3 Times	24	25.5	0	0	3	3.2		
4 Times	8	8.5	2	2.1	1	1.1		
5 Times	2	2.1	0	0	0	0		
Very severe	9	9.6	10	10.6	9	9.6		

Table (3 the severity of Hamilton anxiety about chronic prostatitis. This table reveals that there was highly statistical significant difference between pre, post and follow test in patient's symptoms. Also it was found that (43.6%, 53.2% and 55.3%) of the studied samples had sever symptoms of anxious mood, tension and Somatic (muscular) in pre test respectively compared to (0%, 2.1% and 2.1%) and (2.1%, 2.1% and 4.3%) of them in posttest and follow up test respectively.

Table (3): Response of the studied sample regarding the severity of Hamilton anxiety pre, immediate post and follow up post implementation of the program (n=94).

Items	Pre		Post		Follow up		Test of significance	
	N	%	N	%	N	%	F value	P& (η ²)
1 - Anxious mood								
Not present	3	3.2	61	64.9	58	61.7	268.6	0.743 0.000
Mild	11	11.7	23	24.5	24	25.5		
Moderate	28	29.8	10	10.6	10	10.6		
Severe	41	43.6	0	0	2	2.1		
Very severe	11	11.7	0	0	0	0		
2-Tension:								
Not present	0	0	61	64.9	57	60.6	462.5	0.883 0.000
Mild	10	10.6	24	25.5	26	27.7		
Moderate	8	8.5	7	7.4	9	9.6		
Severe	50	53.2	2	2.1	2	2.1		
Very severe	26	27.7	0	0	0	0		
3- Fears:								
Not present	18	19.1	63	67.0	60	63.8	142.5	0.605 0.000
Mild	7	7.4	23	24.5	22	23.4		
Moderate	14	14.9	7	7.4	10	10.6		
Severe	38	40.4	1	1.1	2	2.1		
Very severe	17	18.1	0	0	0	0		
4- Insomnia:								
Not present	16	17.0	68	72.3	66	70.2	139.5	0.600 0.000
Mild	11	11.7	22	23.4	20	21.3		
Moderate	19	20.2	3	3.2	6	6.4		
Severe	39	41.5	1	1.1	2	2.1		
Very severe	9	9.6	0	0	0	0		
5- Depressed mood:								
Not present	25	26.6	67	71.3	64	68.1	52.85	0.362 0.000
Mild	39	41.5	25	26.6	26	27.7		
Moderate	22	23.4	2	2.1	3	3.2		
Severe	4	4.3	0	0	1	1.1		

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Very severe	4	4.3	0	0	0	0		
6- Somatic (sensory):								
Not present	50	53.2	70	74.5	65	69.1	15.118	0.140 0.000
Mild	19	20.2	21	22.3	23	24.5		
Moderate	16	17.0	1	1.1	2	2.1		
Severe	9	9.6	2	2.1	4	4.3		
Very severe	0	0	0	0	0	0		
7-Somatic (muscular):								
Not present	16	17.0	65	69.1	61	64.9	170.02	0.646 0.000
Mild	10	10.6	18	19.1	20	21.3		
Moderate	2	2.1	9	9.6	9	9.6		
Severe	52	55.3	2	2.1	4	4.3		
Very severe	14	14.9	0	0	0	0		
8-Respiratory symptoms:								
Not present	47	50.0	77	81.9	72	76.6	17.36	0.157 0.000
Mild	34	36.2	16	17.0	18	19.1		
Moderate	7	7.4	1	1.1	2	2.1		
Severe	4	4.3	0	0	2	2.1		
Very severe	2	2.1	0	0	0	0		
9- Gastrointestinal symptoms:								
Not present	40	42.6	66	70.2	65	69.1	35.57	0.277 0.000
Mild	14	14.9	25	26.6	22	23.4		
Moderate	25	26.6	2	2.1	5	5.3		
Severe	12	12.8	1	1.1	2	2.1		
Very severe	3	3.2	0	0	0	0		
10- Genitourinary symptoms:								
Not present	12	12.8	62	66.0	59	62.8	135.34	0.593 0.000
Mild	22	23.4	25	26.6	24	25.5		
Moderate	16	17.0	6	6.4	9	9.6		
Severe	38	40.4	1	1.1	2	2.1		
Very severe	6	6.4	0	0	0	0		
11-Symptoms of the nervous system of the future:								
Not present	65	69.1	84	89.4	81	86.2	11.59	0.111 0.000
Mild	17	18.1	8	8.5	9	9.6		
Moderate	6	6.4	2	2.1	4	4.3		
Severe	4	4.3	0	0	0	0		
Very severe	2	2.1	0	0	0	0		

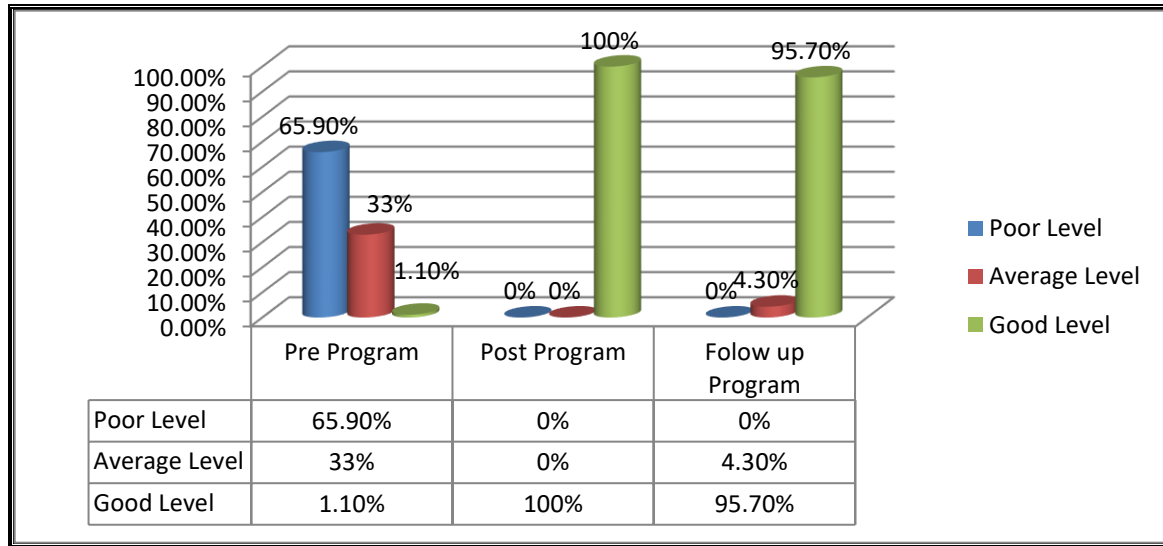


Figure (3): Total knowledge scores and level among the studied sample pre, immediate post and follow-up post implementation of the program (N=94).

This figure demonstrate that 65.9% of the studied sample had poor level of knowledge compared to 0% of them in posttest and follow up test respectively

Table (4): Total reported practices scores and level among the studied sample pre, immediate post and follow-up post implementation of the program (N=94).

Table (4): shows that there were a highly statistically significant difference between total practices scores in pre ,post and follow up test $p < 0.001$ and the majority of the studied samples had unsatisfactory practice in pretest (86.2%). Meanwhile, these percentages changed to be satisfactory practice in the posttest and follow up test (95.7%, 94.7%) respectively.

Total practices scores	The studied sample (n=60)						Test of significance	
	Pre		Immediate post		Follow up		F value	P& (η^2)
unsatisfactory level	81	86.2	4	4.3	5	5.3	577.9	0.861
satisfactory level	13	13.8	90	95.7	89	94.7		
Range Mean \pm SD	(24-14)10 15.24 \pm 3.04		(29-14)15 26.34 \pm 2.53		(28-14)14 25.68 \pm 3.13			
T-test	Pre Vs. Immediate post				Pre Vs. Follow-up		0.000*	
	28.57				2.59			
P-Value	0.001*				0.011			

Discussion

Chronic prostatitis is a common urological diagnosis in men of all ages. Category III CP/ CPPS is the most complex type, which causes many men significant morbidity. The main four symptom domains of CP are urogenital pain, lower urinary tract symptoms (LUTS), psychological issues and sexual dysfunction (Šutulović et al., 2021). So, the current study aimed to study the effect of Kegel exercises on patients diagnosed with chronic prostatitis.

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Regarding age of studied subjects. It was found that slightly less than half of the studied samples were in age group of 41-55 years with mean age 56.28 ± 12.29 . This is in the same line with Sabea et al (2021) who reported in a published study entitled as " Effect of Coping Strategy Intervention for Patients Diagnosed with Chronic Prostatitis " conducted in Egypt, that 68.3% of them were in age group of 20-<40 years.

Regarding level of education, it was found that slightly less than half of the studied samples were can not read and write and more than half of the studied sample was an employed This was because most of the sample was from rural. This finding is in agreement with Hao et al., (2018) who reported in a published study entitled as" Symptoms, sexual dysfunction and psychological burden in Chinese men with chronic prostatitis/chronic pelvic pain syndrome " conducted in China who found that most of patients were high education 25.7% , Primary school 41.88% and 81.25% of the studied sample was employee.

In relation to marital status, the study result showed that, most of the subjects were married . This is in inconsistent with Zhang et al., (2019) who reported in a published study entitled as" The lifetime risk and prognosis of chronic prostatitis/chronic pelvic pain syndrome in the middle-aged Chinese males " conducted in China reported that most of their studied subjects were married 92.7 % . sample number is 248subject.

Regarding to past health history of the patients, the study result revealed that more than three fourth of the study sample had not a history of previous surgery and more than one third of the study sample had chronic disease. more than tenth of the study sample had diabetes, while less than tenth of the study sample had hypertension. This is in the same line with Zhang et al., (2019) who reported in a published study entitled as" The lifetime risk and prognosis of chronic prostatitis/chronic pelvic pain syndrome in the middle-aged Chinese males " conducted in China reported that 93.9% of the study sample had not a history of previous of diabetes.

Regarding present medical history of studied patients : it was found that more than half of the studied subjects by premature ejaculation and increased urination frequency, and less than one fifth had delay in ejaculation this is in the same line with Mändar et al., (2020) who reported in a published study entitled as" Dramatically deteriorated quality of life in men with prostatitis-like symptoms " conducted in United States of America that men with chronic prostatitis appear more likely to experience sexual dysfunction (up to 73%) including erectile dysfunction, premature ejaculation, painful ejaculation, and decreased sexual desire.

Regarding chronic prostatitis urination symptom it was found more than half of them had incomplete emptying, frequency and urgency. This is in the same line with Kanani et al ., (2021) who reported in a published study entitled as" Acute and chronic prostatitis " conducted in UK that Patients present with characteristically vague descriptions of urogenital pain or discomfort for at least three of the preceding 6 months, with an array of other symptoms including that of the lower urinary tract (straining, hesitancy, weak stream, urgency, urinary frequency, nocturia, dysuria), sexual dysfunction (ejaculatory pain, premature ejaculation, erectile dysfunction) and/or psychosocial effects (for example, decreased quality of life).

Regarding the severity of anxiety of studied subjects: It was found that more than half of the study sample had signs and symptoms of anxiety. This result was supported by Ma & Li, (2020) who reported in a published study entitled as" History of Prostatitis Is an Independent Risk Factor for Erectile Dysfunction "conducted in China that patients with prostatitis have more severe stress, depression, anxiety, and adverse impairment of sexual function. These mental illnesses can also cooperate with pain symptoms and urination disorders to jointly disrupt the sexual behavior and erectile function.

Regarding patient's knowledge about the mean of prostatic gland, causes of chronic prostatitis it was found more than half of them not know. Regarding patient's knowledge about mean of Kegel exercises, ,muscles are used in Kegel exercises and exercising your pelvic floor muscles, how should you breathe in pre test it was found that more than three fourth of the study sample had not knowledge. Also This finding supported by Sabea., et al(2021) reported that there was highly statistically significant improvement in patients' correct knowledge regarding chronic prostatitis.

Regarding patient's practice: result of the current study reveals that there was highly statistical significant difference between pre, post and follow tests in all answers regarding patient's reported practice This result was supported by Mohamed et al., (2018) who reported that the mean score of pelvic muscle strength had been increased to be 3.2 ± 0.8 , with statistically significantly different compared to before Kegel's training ($P=0.000$).



Conclusion

Based on the findings and research hypothesis, of the study it was concluded that the implementation of Kegel exercises program led to improvement in both knowledge and reported practices regarding chronic prostatitis and Kegel exercises. The improvement in knowledge is essential to improve practice.

Recommendation

In the light of the findings of the study, the following points are recommended that studies on large samples should be conducted to be able to generalize results.

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