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Effectiveness of Nursing Guidelines on Marital Outcomes of Women with Urinary Incontinence

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ABSTRACT

Context: Urinary incontinence is an important multifactorial health problem that affects women's life quality negatively and is related significantly to age, education, occupation, marital status, and body mass index.
Aim: To evaluate the effectiveness of nursing guidelines on marital outcomes of women with urinary incontinence.
Methods: Quasi-experimental (pre/posttest, study/control) design was used. The study was conducted at the urogynecology unit at Ain Shams Maternity University Hospital on a purposive sample of 76 women attending the setting mentioned above. Sample inclusion criteria were women age <40 years, married, diagnosed with urinary tract infection, and free from chronic disease. The study tool included a structured interview questionnaire, Kings' health questionnaire, women practice checklist.
Results: Findings of the present study showed that 43.4% of the women were housewives, 27.6% completed preparatory school education. There were highly statistically significant differences between study and control groups regarding physical, social, sexual, and psychological dimensions of King's health outcomes post and followed up of guidelines implementation when the p-value was <0.001. The practice of the study group improved significantly than controls.
***Conclusion*:** The study revealed improvement in the total health outcomes and health practice among the study group compared to the controls with an increase in the total practice with the decrease in total health problems of king health, especially sexual problems. Recommendations: Performing training programs for improving women's awareness about urinary incontinence and sexual life. Replication of the study on a larger probability sample for generalizing the findings and studying the factors affecting women's utilization of urodynamic services.

Keywords: Marital outcomes, nursing guidelines, urinary incontinence

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1. Introduction

The international continence society defines urinary incontinence (UI) as the condition in which the involuntary loss of urine is a social and demonstrable problem *(Resnick, 1990). Sensoy (2013)* reported that urinary incontinence is an important multifactorial health problem that negatively affects women's quality of life and relates significantly to age, education, occupation, marital status, and body mass index (BMI).

Urinary incontinence increases the risk of institutionalization, has a negative impact on marital life, and is also one of the costliest health conditions *(Abrams et al., 2017).* Despite the high prevalence of urinary incontinence, 200 million people worldwide, 75-80% of women *(Altaweel, & Alharbi, 2012). Danforth et al. (2006)* reported that the overall prevalence of incontinence in middle-aged women is somewhat higher than 34.1%. *Hunskaar et al. (2003)* reported a 30% to 40% prevalence of incontinence among middle-aged women. The annual incidence of UI in women ranges from 2% to 11%, with the highest incidence occurring during pregnancy *(Sajadi & Vasavada., 2010).*

There are many marital problems caused by urinary incontinence, effects on the women such as embarrassment, fears of being seen as old, wet, or bad smelly, even though their symptoms may severely restrict their lifestyle, and fear with its relationship with her spouse. The result can be isolation, depression, feelings of shame and guilt, and problems with marital and wider family relationships. It also threatens self-esteem and leads to loss of personal control *(Coyne et al., 2003).*

Mohamed et al. (2010) studied the effect of bladder problems on women's marital life of incontinent women. It

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was found that bladder problems caused much impact on the marital life of the studied women. The domains physical/sexual limitation, sleep/ energy, coping mechanism, and social limitation were the most affected.

Comparable findings were also reported by *Barber et al. (2005),* who revealed that sexual dysfunction is a common complaint among women suffering from urinary incontinence. Among women who seek medical help, 25-50% report problems associated with sexual function, including decreased sexual desire, anorgasmia, and dyspareunia.

Sutherst (1979) reported that 46% of women suffering from urinary incontinence said their symptoms negatively impacted their sexual function, thus reducing the frequency of sexual intercourse. Symptoms reported included dyspareunia, leaking during coitus, embarrassment, and depression. Also, *Norton et al. (1994)* showed that 38% of 201 women attending a clinic with urinary incontinence reported avoiding sexual intercourse due to their condition.

Nursing intervention can be used to provide evidence-based recommendations, guidelines, specific advanced education, and knowledge base that the nurse can provide for women with marital problems due to urinary incontinence, teaching them how to adapt to these problems. The nurse can also help women make informed decisions, improve communication between women and health professionals, implement a nursing intervention, and follow up with women with urinary incontinence *(Koutoukidis, 2017).*

2. Significance of the study

In Egypt, urinary incontinence causes many problems, such as sexual problems that constitute 86% of cases. It is also responsible for 15% sleep disturbance, 43% depression due to urinary incontinence, and 25% social isolation. Many women who do not seek medical attention are unaware that urinary incontinence is treatable due to insufficient reproductive health education and little research *(El-Azab et al., 2007).* Urinary incontinence is responsible for increased morbidity throughout the world. This morbidity ranges from worrisome symptoms to life-threatening *(Abd El Fatah, 2016).* This study supposes to provide an effective intervention to help women with urinary incontinence to manage their multi-dimension problems.

3. Aim of the study

The current study aimed to evaluate the effectiveness of nursing intervention guidelines on marital outcomes of women with urinary incontinence.

3.1. Research Hypothesis

Nursing guidelines implementation will reduce the marital problems among the study group women suffering from urinary incontinence compared to the controls.

3.2. Operational definition of marital outcomes

They are meant in this study as physical, social, sexual limitations, and psychological effects.

4. Subjects & Methods

4.1. Research Design

A quasi-experimental design is an empirical intervention study used to estimate the causal impact of an intervention on the target population with the random assignment was utilized to compare between both groups (Study and Control) *(Silverman, 2016). The design was used to evaluate the effectiveness of the nursing intervention on marital outcomes of women with urinary incontinence.*

4.2. Study setting

The study was conducted at Ain Shams Maternity University hospital in the urogynecology unit, which Ain Shams University Hospitals, former was Demerdash Hospital established in 1928 with a donation from Mr. Abdel Rahim El Demerdash Pasha. Ain Shams University Hospitals are located in the Abbasia district. It has approximately 3200 beds serving about one million patients annually in the outpatient clinics and the internal department. Ain Shams Maternity Hospital was one of the specialized hospitals affiliated to Ain Shams University that provided free maternal and child health services.

4.3. Subjects

A purposive sample was used to recruit women suffering from marital problems from urinary incontinence.

Inclusion criteria

- Married, age <40 years, suffering from urinary incontinence.

Exclusion criteria

- Women are suffering from chronic diseases.

The total sample was 76 women recruited for this study. They were randomly assigned to the study group (38) and control group (38). The study group had nursing guidelines, and the control group had routine care. The sample size calculation was based on the number of women with urinary incontinence admitted to the urogynecology unit at Ain Shams Maternity University Hospital in 2015-2016, which was 760 women.

The sample size calculation is based on power analysis: Type error by power test (1-B) = 90%. The sample was calculated according to the following statistical equation.

$$n = \frac{\left(Z_{1-\propto 12} + Z_{1-\beta}\right)^2 [P_1(1-P_1) + P_2\,(1+P_2)]}{(P_1 - P_2)^2}$$

Z_1: Statistic for a level of confidence (for 95%, which is conventional, Z value is 1.96).

P_1: Expected prevalence or proportion in the intervention group (P is considered 0.5).

P_2: Expected prevalence or proportion in the control group (P is considered 0.5).

α: Error type 1 (is considered 0.05).
β: Error type 2 (is considered 0.10).

4.4. Tools of data collection

Tools of data collection were used:

4.4.1. Structured Interviewing Questionnaire

The researcher designed it in simple Arabic language based on reviewing the related literature *Linton (2011); DeGroot and Munden (2015); Washington and Leaver (2015).* It was used to assess women's sociodemographic data, e.g., age, occupation, level of education.

4.4.2. The King's Health Questionnaire (KHQ)

This questionnaire is adopted from *Hunt et al. (1985); Grain et al. (2009).* It was used to assess the impact of urinary incontinence on marital outcomes. It consisted of 23 outcomes distributed as physical limitations (7 outcomes), social limitations (6 outcomes), sexual relationship (6 outcomes), and psychological limitation (4 outcomes). The responses in KHQ have a four-point rating system (not at all, slightly, moderately, and a lot). It was modified by the researcher and scored as Not at all = 4, Slightly = 3, Moderately = 2, and a lot = 1. The smaller the score, the severe the impact.

4.4.3. Women Reported Practice Checklist

The researcher developed it for women with marital problems suffering from urinary incontinence based on literature review *Baum and Manni (2017); Bertold et al. (2017).* It was written in the Arabic language to assess women's practices like hand washing (10 steps), perineal care (9 steps), Kegel exercises (8 steps), and pelvic floor muscle exercises (4 steps). The response to each procedural step was classified into done correctly and not done.

Scoring system

The score of women who reported practice includes 31 marks. Each correct step was scored as one mark and not done scored as zero. The total score was classified as follows:

- <70% was considered the unsatisfactory level of practice.
- ≥70% was considered the satisfactory level of practice.

4.5. Procedures

Ethical considerations: The research approval was obtained from the scientific research ethical committee in the nursing faculty at Ain Shams University before starting the study. The researcher has clarified the importance and aim of the study to the women included in the study. The researcher assured maintaining anonymity and confidentially of the subjects' data. The questionnaire did not include any immoral statements that touched women's beliefs, dignity, culture, tradition, and religious issues. Women were informed that they were allowed to choose to participate or not in the study and that they had the right to withdraw from the study at any time. Women were informed that the collected data would be used only for the present study and their benefit.

The pilot study was conducted on 10% of the total sample. Eight cases were included and chosen randomly from the previously mentioned setting. It was carried out to evaluate the applicability of the tools and the feasibility of the research process to find the possible obstacles that might be faced during the data collection process. No major modifications were made during the pilot study, and the pilot sample was then included in the main study sample.

Fieldwork: Data collection for this study was carried out over 12 months, from the beginning of June 2018 to the end of May 2019. The researcher was available in the study setting three days/week (Saturday, Monday, and Wednesday) to collect data from control and study groups. From 9:00 am to 2.00 pm. The researcher first greeted the woman and explained the purpose of the study.

The researcher assesses the sociodemographic data using the structured interviewing questionnaire to assess their demographic data. Using king health questionnaire to assess the impact of urinary incontinence on their marital outcomes. Checklist for women's reported practice toward managing the marital problems as Kegel exercise, pelvic floor exercise, and other procedures.

This assessment was done for both groups as a pretest in the first visit; after assessment, analysis of the pretest to determine women's needs. The Control group started before the study group to prevent sample contamination. For study group women, the researcher gave the nursing guidelines in the first visit and explained them.

The control group received routine care. At the end of the first visit, the researcher took an appointment for the second visit when women went to do some investigations, and this appointment was after one week after the first visit. Implementation of nursing intervention lasted over three months for all women in the study group.

At the second visit, the researcher asked the women about the points that were not clear in the guideline and explained it. The researcher taught the women how to do Kegel exercise and pelvic floor muscle training, perineal care, and handwashing procedures and took her feedback about these procedures. The researcher started follow-ups with women via telephone call for reinstruction and reinforcement. At the end of the second visit, the researcher took an appointment with women for the third visit two weeks after the first visit when women went to the urodynamic for an x-ray.

At the third visit, the researcher went with the woman to x-ray and reassure her, revise the procedures and guidelines if there were something difficult, and explain it. The posttest was conducted for both groups after one month using the same pretest tools. Follow-up tests were conducted after three months.

4.6. Data analysis

All data were collected, tabulated, and subjected to statistical analysis. Statistical analysis is performed by

Microsoft office excel. Quantitative variables are prescribed by the mean and standard deviation (SD), while proportions and percentages describe qualitative categorical variables. The Chi-square test of independence is used for comparing the categorical variables. The observed difference and association were considered as follows:

- Non significance (NS) $P > 0.05$.
- Significant (S) $P \leq 0.05$.
- Highly significant (HS) $P \leq 0.01$.

5. Results

Table 1 shows the demographic characteristics of the study and control groups, the mean age of the study group was 31.57±4.62, while the mean age in the control group was 32.44±5.22. Regarding educational level, 34.2% of the study group and 27.6% of the controls had a preparatory level of education. In addition, 28.9% of women in both groups were educated up to secondary school. More than two-fifths of women were housewives in the study and control groups (44.7%, 42.1%) with non-statistically significant differences between both groups regarding all sociodemographic parameters.

Table 2 shows a statistically significant difference between the two groups regarding all physical activities post and follow up after implementing the educational guidelines. In comparison, there was no statistically significant difference between the two groups at the pretest when the p-value was <0.05.

Table 3 shows statistically significant differences between study and control groups regarding all dimensions of social outcomes after implementing the educational guidelines. All social outcomes show statistically significant differences between both groups except visiting friends at follow-up.

Table 4 shows statistically significant differences between the two groups regarding all dimensions of sexual outcomes, while there was no statistically significant difference between both groups at the beginning of the study.

Table 5 shows the psychological effect of urinary incontinence on the studied women that, 39.5% of the study group and 44.7% of the control group had moderately and a lot of psychological complaints respectively, with no statistically significant differences between two groups pre-implementation of nursing guidelines ($P > 0.05$). While post-implementation guidelines, 50% of the study group had no complaints at all, and 34.2% of the control group had a lot of complaints with a statistically significant difference between them ($P < 0.001$). In follow-up, 42.1% of the study group had no psychological complaints at all compared to 21.1% of the controls with non-statistically significant differences between them ($P < 0.05$).

Table 6 reveals that 39.5% of the study group and 34.2% of the control group were moderately affected by urinary incontinence, with no statistically significant differences between the two groups before implementing nursing guidelines ($P > 0.05$). At the same time, post-implementation of nursing intervention, 52.6% of the study group had no effect at all compared to 10.5% of the control group post-intervention, with a statistically significant difference between them ($P < 0.001$). At follow-up, 50% of the study group had no effect at all affected compared to 15.8% of the control affected a lot by urinary incontinence with a statistically significant difference between them ($P < 0.001$).

Table 7 demonstrates a non-significant difference between the two groups regarding their satisfactory practice before the nursing guidelines implementation, while there are statistically significant differences between them at the post and follow-up phases of intervention regarding all health practices.

Table (1): Comparison of study and control group regarding their demographic characteristics (n= 74).

Demographic characteristics	Study (N=38)		Control (N=38)		Total (N=74)		Chi-square X^2	P-value
	N	%	N	%	N	%		
Age								
<20 years	5	13.2	6	15.8	11	14.5	0.94	0.81
20-25 years	7	18.4	8	21.1	15	19.7		
30-35 years	11	28.9	13	34.2	24	31.6		
35-40 years	15	39.5	11	28.9	26	34.2		
Mean±SD	31.57±4.62		32.44±5.22		32.01±4.9			
Level of education								
Preparatory	13	34.2	8	21.1	21	27.6	3.01	0.55
Secondary	10	26.3	12	31.6	22	28.9		
University	8	21.1	11	28.9	19	25.0		
High education	2	5.3	4	10.5	6	7.9		
Tertiary education	5	13.2	3	7.9	8	10.5		
Occupation								
Housewife	17	44.7	16	42.1	33	43.4	0.31	0.85
Crafts workmanship	7	18.4	9	23.7	16	21.1		
Employee	14	36.8	13	34.2	27	35.5		

Table (2): Comparison of study and control group women regarding their physical outcomes pre, post, and follow-up the nursing guidelines implementation (n= 74).

Physical outcomes	Study								Control								Chi-square X^2	P-value
	Not at all		Slightly		Moderately		A lot		Not at all		Slightly		Moderately		A lot			
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%		
Sudden sitting																		
Pre	2	5.3	9	24	17	45	10	26	0	0	10	26	15	40	13	34	2.56	0.463
Post	26	68	6	16	3	7.9	3	7.9	6	16	9	24	16	42	7	18	23.59	<0.001
Follow up	24	63	8	21	5	13	1	2.6	5	13	10	26	15	40	8	21	23.11	<0.001
Sudden attention																		
Pre	1	2.6	4	11	16	42	17	45	1	2.6	13	34	14	37	10	26	6.71	0.082
Post	29	76	4	11	4	11	1	2.6	4	11	7	18	11	29	16	42	36.26	<0.001
Follow up	31	82	3	7.9	2	5.3	2	5.3	3	7.9	9	24	11	29	15	40	42.23	<0.001
Practice any type of sport																		
Pre	0	0	11	29	10	26	17	45	3	7.9	8	21	11	29	16	42	3.55	0.314
Post	25	66	5	13	6	16	2	5.3	1	2.6	14	37	12	32	11	29	34.64	<0.001
Follow up	28	74	5	13	4	11	1	2.6	6	16	12	32	10	26	10	26	27.05	<0.001
Carry anything heavy																		
Pre	1	2.6	9	24	10	26	18	47	3	7.9	7	18	12	32	16	42	1.54	0.671
Post	18	47	14	37	5	13	1	2.6	4	11	11	29	10	26	13	34	21.22	<0.001
Follow up	20	53	8	21	9	24	1	2.6	1	2.6	16	42	8	21	13	34	30.20	<0.001
Laundry																		
Pre	0	0	15	40	8	21	15	40	2	5.3	11	29	7	18	18	47	2.95	0.399
Post	22	58	9	24	7	18	0	0	3	7.9	12	32	6	16	17	45	31.94	<0.001
Follow up	21	55	14	37	3	7.9	0	0	3	7.9	11	29	8	21	16	42	32.13	<0.001
Shopping																		
Pre	0	0	13	34	9	24	16	42	1	2.6	16	42	4	11	17	45	3.26	0.353
Post	26	68	7	18	5	13	0	0	3	7.9	13	34	8	21	14	37	34.73	<0.001
Follow up	21	55	12	32	5	13	0	0	6	16	14	37	6	16	12	32	20.57	<0.001

Table (3): Comparison of study and control group women's social outcomes pre, post, and follow-up the nursing guidelines implementation (n= 74).

Social outcomes	Study								Control								Chi-square X^2	P-value
	Not at all		Slightly		Moderately		A lot		Not at all		Slightly		Moderately		A lot			
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%		
Neighbors' disgust																		
Pre	1	2.6	9	24	12	32	16	42	0	0	4	11	12	32	22	58	3.57	0.157
Post	24	63	11	29	1	2.6	2	5.3	2	5.3	16	42	12	32	8	21	32.44	<0.001
Follow up	23	61	10	26	0	0	5	13	4	11	10	26	11	29	13	34	27.92	<0.001
Accepting the veto of neighbors towards the problem																		
Pre	0	0	8	21	20	53	10	26	2	5.3	9	24	18	47	9	24	2.21	0.529
Post	23	61	13	34	2	5.3	0	0	2	5.3	16	42	8	21	12	32	33.55	<0.001
Follow up	20	53	10	26	5	13	3	7.9	4	11	11	29	7	18	16	42	19.94	<0.001
Fear from urine smell effect on practice activities																		
Pre	1	2.6	15	40	10	26	12	32	1	2.6	9	24	18	47	10	26	3.96	0.265
Post	21	55	14	37	3	7.9	0	0	6	16	9	24	14	37	9	24	25.53	<0.001
Follow up	18	47	17	45	3	7.9	0	0	7	18	8	21	10	26	13	34	24.84	<0.001
Affection on work																		
Pre	0	0	12	32	17	45	9	24	0	0	9	24	16	42	13	34	1.18	0.553
Post	21	55	16	42	0	0	1	2.6	5	13	13	34	10	26	10	26	27.52	<0.001
Follow up	19	50	15	40	0	0	4	11	5	13	8	21	9	24	16	42	26.49	<0.001
Visiting friends																		
Pre	1	2.6	6	16	16	42	15	40	0	0	9	24	15	40	14	37	1.66	0.644
Post	6	16	25	66	7	18	0	0	13	34	1	2.6	8	21	16	42	40.79	<0.001
Follow up	14	37	9	24	14	37	1	2.6	11	29	12	32	9	24	6	16	5.44	0.142
The affection of methods of treatment with a sexual relationship with husband																		
Pre	0	0	8	21	13	34	17	45	0	0	11	29	15	40	12	32	1.47	0.477
Post	17	45	20	53	1	2.6	0	0	7	18	9	24	16	42	6	16	27.57	<0.001
Follow up	12	32	19	50	6	16	1	2.6	6	16	7	18	15	40	10	26	18.75	<0.001

Table (4): Comparison of study and control group women's sexual outcomes pre, post, and follow-up the nursing guidelines implementation (n= 74).

Sexual outcomes	Study								Control								Chi-square	P value
	Not at all		Slightly		Moderately		A lot		Not at all		Slightly		Moderately		A lot			
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	X2	
Satisfaction about the variety of sexual activities																		
Pre	1	2.6	8	21	10	26	19	50	0	0	6	16	9	24	23	61	1.71	0.633
Post	25	66	10	26	2	5.3	1	2.6	9	24	7	18	12	32	10	26	22.56	<0.001
Follow up	27	71	8	21	3	7.9	0	0	13	34	7	18	10	26	8	21	16.73	<0.001
Feeling excited during intercourse																		
Pre	5	13	7	18	11	29	15	40	0	0	8	21	10	26	20	53	5.82	0.12
Post	29	76	7	18	1	2.6	1	2.6	7	18	11	29	8	21	12	32	29.08	<0.001
Follow up	31	82	5	13	1	2.6	1	2.6	9	24	10	26	9	24	10	26	27.53	<0.001
Incontinence of urine with sexual activity																		
Pre	1	2.6	7	18	13	34	17	45	2	5.3	5	13	11	29	20	53	1.07	0.783
Post	23	61	13	34	1	2.6	1	2.6	2	5.3	9	24	11	29	16	42	39.93	<0.001
Follow up	25	66	11	29	1	2.6	1	2.6	0	0	11	29	12	32	15	40	46.55	<0.001
Fear of incontinence restrict sexual activity																		
Pre	2	5.3	2	5.3	20	53	14	37	1	2.6	6	16	13	34	18	47	4.31	0.229
Post	18	47	11	29	7	18	2	5.3	5	13	11	29	10	26	12	32	15.02	0.002
Follow up	23	61	9	24	6	16	0	0	1	2.6	12	32	12	32	13	34	35.59	<0.001
Avoiding sexual intercourse due to bulging in the vagina																		
Pre	3	7.9	7	18	15	40	13	34	0	0	7	18	15	40	16	42	3.31	0.346
Post	15	40	15	40	6	16	2	5.3	6	16	4	11	17	45	11	29	21.71	<0.001
Follow up	18	47	14	37	5	13	1	2.6	11	29	5	13	12	32	10	26	16.19	<0.001
Feeling pain during sexual intercourse																		
Pre	2	5.3	8	21	14	37	14	37	0	0	4	11	12	32	22	58	5.26	0.153
Post	14	37	14	37	8	21	2	5.3	9	24	4	11	12	32	13	34	15.50	<0.001
Follow up	18	47	12	32	7	18	1	2.6	10	26	3	7.9	14	37	11	29	18.35	<0.001

Table (5): Comparison between study and control groups' psychological effect of urinary incontinence pre, post, and follow-up nursing guidelines implementations (n= 74).

Psychological outcomes	Pre				Post				Follow up			
	Study		Control		Study		Control		Study		Control	
	N	%	N	%	N	%	N	%	N	%	N	%
Not at all	2	5.3	1	2.6	19	50.0	4	10.5	16	42.1	8	21.1
Slightly	10	26.3	8	21.1	16	42.1	9	23.7	12	31.6	11	28.9
Moderately	15	39.5	12	31.6	2	5.3	12	31.6	5	13.2	9	23.7
A lot	11	28.9	17	44.7	1	2.6	13	34.2	5	13.2	10	26.3
Chi-square (X^2)	2.175				29.171				5.520			
P-value	0.537				<0.001				0.137			

Table (6): Comparison between study and control groups regarding total marital outcomes (n= 74).

Marital outcomes	Total King's health											
	Pre				Post				Follow up			
	Study		Control		Study		Control		Study		Control	
	N	%	N	%	N	%	N	%	N	%	N	%
Not at all	1	2.6	1	2.6	20	52.6	4	10.5	19	50.0	6	15.8
Slightly	10	26.3	11	28.9	13	34.2	11	28.9	10	26.3	10	26.3
Moderately	15	39.5	13	34.2	4	10.5	12	31.6	6	15.8	10	26.3
A lot	12	31.6	13	34.2	1	2.6	11	28.9	3	7.9	12	31.6
Chi-square (X^2)	0.230				23.167				13.160			
P-value	0.973				<0.001				0.004			

Table (7): Comparison of study and control group women regarding their satisfactory practice pre, post, and follow-up the nursing guidelines implementation (n= 74).

Items of practice		Pre		Post		Follow up		Chi-square (X^2)	(P-value)	
		N	%	N	%	N	%		Pre/Post	Post/Follow up
Hand wash	**Study**	7	18.4	30	78.9	28	73.7	0.773	<0.001	0.002
	Control	8	21.1	11	28.9	9	23.7			
Perineal care	**Study**	6	15.8	29	76.3	24	63.2	1.000	<0.001	0.014
	Control	6	15.8	12	31.6	10	26.3			
Kegel exercise	**Study**	6	15.8	32	84.2	27	71.1	0.554	<0.001	0.008
	Control	8	21.1	13	34.2	12	31.6			
Total practice	**Study**	6	15.8	30	78.9	26	68.4	0.761	<0.001	<0.001
	Control	7	18.4	12	31.6	10	26.3			

6. Discussion

Incontinence can affect all aspects of women's health. It is estimated that up to half of women with UI experience both physical and psychological adverse effects in their lifetime. Women living with urinary incontinence have been shown to have significantly marital problems compared with those who are continent *(Largo et al., 1992).* The condition has been associated with sexual dysfunction, relationship problems, withdrawal from sport and exercise, travel restrictions, major depression, and social isolation *(Nilsson et al., 2009).* The current study aimed to evaluate the effectiveness of nursing intervention guidelines on marital outcomes of women with urinary incontinence.

Demographic characteristics of studied samples revealed two matched study and control groups. The mean age of the studied women was 31.57±4.62, and the mean age of the control group was 32.44±5.22, with a non-statistically significant difference between both groups regarding all sociodemographic characteristics. This finding was supported by *Naser Eldeen (2016),* who reported that the prevalence of stress urinary incontinence (SUI) increased in middle-aged women ranging from 41-45 years. *Balci et al. (2012)* reported that the mean age of women (31.9±6.6) and *Bortolotti et al. (2000)* reported that the mean age of women was (32.4±9.9). On the other hand, disagreements were found with *Fritel et al. (2010),* who reported that SUI prevalence increased with age and reached a maximal level around the age of 50, and disagreement with *Sajadi and Vasavada (2010),* who reported that the mean age of women was (60.83±8.63).

Altaweel and Alharbi (2012) reported that women with higher educational levels had a greater awareness of UI, a greater perception of hygiene, and a better lifestyle. Also, they had better access to medical services if they had had UI previously. The present study shows that more than one-third of the studied women and less than a third of the control group were educated up to the preparatory level. In addition, less than one-third of women in both groups were educated up to secondary school, which explains why they responded easily to the knowledge given to them. *El-Azab et al. (2007)* studied the high prevalence of UI among women with low education levels. This finding agreed with the present study. *Naser Eldeen (2016)* found that highly educated women (university and secondary school education) did more visits to outpatient clinics and insisted on getting cured and having normal life than do women with less education.

More than two-fifths of women were housewives in the study and the control group in the present study. This finding is explained in the current study by their low educational level. The researcher was reported by many of the studied women that they were housewives because they were feeling embarrassed of urine leakage during their work hours. *Hannestad et al. (2004)* were consistent with the current study results where they found that most of the studied women were housewives. *Yom and Ruggiero (2016)* reported that the work performance of women with urinary incontinence was impaired.

Physical functioning is an individual's ability to carry out activities of daily living (ADLs), including self-care, cooking, shopping, household tasks, and walking around *(Hunskaar et al., 2003).* The present study shows a statistically significant difference between study and control groups regarding all physical health outcomes post and follow-up guidelines implementations. In contrast, there is a non-significant difference between them before implementing the guidelines. This finding may be due to women with mixed incontinence perceiving their urine leakage as a greater barrier to exercise and doing household activities. This result was attributed to the challenge of leaking urine during activities and exercise and finding a toilet urgently. After implementing Kegel exercise and pelvic floor muscle exercise, the women's physical functioning has improved.

These findings were supported by *Kang et al. (2010),* who reported that women with urinary incontinence had mobility impairment and difficulties maintaining personal hygiene. *Monz et al. (2007)* mentioned that urinary incontinence had a high effect on physical activities and household duties.

Social functioning is the relationships and interaction with others (Family or friends), including their participation in activities and the strength and size of social networks *(Hunskaar et al., 2003).* The present study shows that the highest percent of the studied women in both groups were affected a lot by the UI pre-implementation of nursing intervention guidelines related to neighbors' disgust, fear from urine smell on practice activities, visiting friends, and affection of methods of treatment on a sexual relationship with husband, and accepting the veto of

neighbors towards the problem. After implementation of nursing guidelines, the women had improved relationships and interaction with others (family or friends), including their participation in activities and the strength and size of social networks, which reflect the magnitude of the effect of nursing intervention guidelines on social life as statistically significant improvements revealed post and follow up of guidelines implementation regarding all social aspects except visiting friends at the follow-up stage.

These findings were supported by *Bradway (2003),* who stated that social isolation reduces visits and results in a poor relationship with family and greatly affect women's life. Sex is a key function of human beings and has a fundamental role in women's reproductive life. This function integrates physical, emotional, and psychological factors and affects marital life. Indeed it has been suggested that any problems in sexual function might lead to a worsened general well-being and overall quality of life *(Chedraui et al., 2012).*

Concerning the sexual effect on marital life, the present study demonstrates a statistically significant difference between two groups post and follow up of guidelines implementations regarding all sexual outcomes. After implementing nursing guidelines, the women's desire to have sex could be improved when changing positions of sexual intercourse, doing perineal care, and kegel exercise.

These findings are similar to *Bartolig et al. (2010); Unsal et al. (2013),* who found that many aspects of women's lives are impaired, including psychological well-being, sexual and interpersonal relationships, social interactions, and activities due to UI. After the education of nursing guidelines, the women's fear has reduced, anxiety and self-confidence concerning marital problems have improved after participating in activities with friends and neighbors and implementing exercises.

Psychological functioning is emotional and mental well-being, including levels of depression, anxiety, worry, and sometimes guilt or their opposite (Joy, Vigour, Hopefulness) *(Hunskaar et al., 2003).* The present study reveals significant differences between the two groups when the p-value was <0.001 regarding psychological outcomes of urinary incontinence on marital life post-implementation of nursing intervention guidelines. This finding might be due to the impact of nursing intervention guidelines as the women realized some solutions for their undisclosed problems. These findings were supported by *Minassian et al. (2003),* who showed statistically significant differences in all variables related to psychological well-being after the educational intervention.

7. Conclusion

Nursing guidelines implementation reduced the marital problems among the study group women suffering from urinary incontinence compared to the controls.

8. Recommendations

Performing training programs to improve women's awareness about urinary incontinence and sexual life. Further researchers regarding studying the factor that affects women's utilization of urodynamic services conduct studies examining strategies to prevent the occurrence of urinary incontinence.

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