Effect of Benson Relaxation Technique on Shoulder Pain Intensity and Anxiety Level among Women Undergoing Gynecological Laparoscopy

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Abstract

Background: Laparoscopy is widely utilized to diagnose and treat acute and chronic, gynecological and general surgical conditions. In recent years laparoscopy has become an acceptable surgical alternative to open surgery in pregnancy. **The aim of the study:** Evaluate the effect of Benson relaxation technique on shoulder pain intensity and anxiety level among women undergoing Gynecological laparoscopy. **Setting:** The study was conducted in laparoscopic unit at Zagazig University Hospital. **The study sample:** convenience sample included 250 women undergoing Laparoscopy was recruited randomly assigned to study group 125 women who received Benson relaxation technique and pre and post laparoscopic instruction. Control group 125 women who received standard hospital routine care. **Tools of data collection:** Four tools were used for data collection: Structured Interview questioner, Knowledge assessment tool, visual analogue scale (VAS), Taylor Manifest Anxiety Scale. **Results:** The main results yielded in a significant difference effect of Benson's relaxation technique when applied among women undergo gynecological laparoscope on reducing level of shoulder pain and anxiety level of the study group than these in control group as well as there was significance improvement of women's knowledge regarding gynecological laparoscope knowledge and explanation about pre and post-operative preparation. **Conclusion and Recommendation:** Women undergo gynecological laparoscope need more knowledge and explanation about pre and post laparoscopic preparation. Benson relaxation technique is a practice that is inexpensive, effective, and easy to apply during post gynecological laparoscopic period.

Key Words: Benson Relaxation Technique, Shoulder pain intensity, Anxiety level, Gynecological laparoscopy.

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Introduction

Laparoscopy is a surgical technique that allows surgical procedures to be performed while minimizing trauma to the body through small incisions (usually 0.5– 1.5 cm), with the aid of a camera, within the abdominal cavity. Over the past decade, laparoscopy has become the standard surgical approach for a majority of gynecologic procedures. Laparoscopic surgery caused a major turning point in the surgery during topical years and has become a popular technique used by surgeons **(Botea, F. et al.,2011).**

Laparoscopic surgery has been demonstrated as a valid approach in almost all gynecologic procedures including malignant diseases. Benefits of the minimally invasive approach over traditional open surgery have been well demonstrated in terms of minimal perioperative morbidity. Laparoscopic surgery in women with gynecological diseases has several benefits compared to open surgery such as faster recovery, reduced hospital stay, lower morbidity and better cosmetic results **(Bijen CB., et al., 2009).**

Presently, gynecological laparoscopy has an obvious favor for both diagnostic and therapeutic procedures of pelvic and abdomen; while it is minimally invasive, has less pain, and needs less postoperative analgesic use compared with open surgeries **(Phelps et al., 2008).**

Most laparoscopic procedures in gynecology are performed electively for benign conditions. The understanding and acceptance of the risk associated with the procedure may be different from that of women having procedures for life-threatening conditions. Women must be informed about pre- and post-operative preparation, associated risks with laparoscopy care of most common discomfort that may occur and danger signs of complication **(Medeiros L. et al., 2009).**

Even with the advantages of laparoscopic procedures, they do not come without risk and complications for the patient like danger of deep vein thrombosis, inflammation and creation of adhesions. Also, laparotomy there is a higher risk of injury to the major blood vessels positioned in the pelvis and the urinary system, and that is why patients considered to be subject to laparoscopy should be carefully chosen **(Garry, 2006).**

Although laparoscopic surgery results in improved patient satisfaction, a considerable portion of patients have complaints of post-operative discomfort. Post-operative shoulder pain is hypothesized to be a result of pneumo-peritoneum achieved by carbon dioxide insufflation which induces peritoneal stretching, irritation of the diaphragm and phrenic nerve resulting in referred pain to the shoulder **(Podolsky et al., 2009).**

Shoulder pain is reported to occur in 35 to 70% of laparoscopic surgeries, mostly to the patients' right side. The phrenic nerve originates from the C3 to C5 cervical nerves in the neck and descends through the thorax to innervate the diaphragm. A link between phrenic nerve irritation and this referred type of pain is suggested in the literature. Severe postoperative shoulder pain may lead to patient dissatisfaction **(Chaichian et al., 2018).**

Patient satisfaction is a very complex entity that is dependent on patient demographics, comorbidities, disease, and, to a large extent, patient expectations, knowledge and attitude regarding procedure. It can be broadly thought to refer to all relevant experiences and processes associated with health care delivery **(Aydemir et al., 2018).**

According to **Sahar and Taghreed, 2017** Benson's relaxation is a prosperity emitting technique example to complete relaxation of all body muscles and sleep disorders management. Also urge charge decreases the uneasiness horizontal, mood disturbance, embody discomfort, body discomfort, activity of autonomic nervous system. Moreover, relaxation therapy impairs the measure needful to fall sleeping. Benson's relaxation the key role natural and psychological to subdue disquiet, restlessness, mood and self-expectation, despondency, and lessens force This technique ought to be complete in a recreate surrounding environment, calm relaxed state, mental concentration, and in a positive attitude to form a real effect **(Fatemeh and Vahid et al., 2019).**

Achieving the choice effective wish external, psychological, social and heavenly minded well beings' outcomes, the role of midwifery and psychiatric nursing specialty are to support and educate women **(Kurtz and Ong et al., 2007).** Nurse midwife interposition plays an important party embodies relaxation techniques, complementary therapy and choice curative therapeutics. Relaxation techniques imply melodious practices as guided emotional imagery, progressive relaxation, self-hypnosis, biofeedback, and breathing exercises **(Barabady, and Baghdassarians et al., 2020).**

Significance of the study:

Laparoscopic surgery has been successfully introduced into practice as minimally invasive surgery is associated with low morbidity. Most women complain post-laparoscope shoulder pain, anxiety. Moreover, because of the exact mechanism of post laparoscopic shoulder pain (PLSP) remains unclear. Non pharmacologic pain control methods can be used to increase the effect of analgesics so, the aim of the present study was to assess effect of Benson relaxation technique on shoulder pain intensity, anxiety level among women undergoing gynecological laparoscopy.

Aim of the study:

Evaluate the effect of Benson relaxation technique on shoulder pain intensity and anxiety level among women undergoing Gynecological laparoscopy.

Specific objective:

1. To identify women knowledge regarding gynecological laparoscopy (Pre and post intervention).
2. To determine level of shoulder pain intensity of women undergoing gynecological laparoscopy (Pre and post intervention).
3. To determine level of anxiety of women undergoing gynecological laparoscopy (Pre and post intervention).

Research Hypotheses:

1. Women's knowledge regarding gynecological laparoscopy will be improving after application of educational instruction.
2. Level of shoulder pain will be reduced after application of Benson's relaxation technique
3. Level of anxiety will be reduced after application of Benson's relaxation technique.

Subjects and Methods

Study design:

A Quasi-study (pre-post) research design was used in the study.

Sample type:

Convenience sample of 250 women. The subjects were equally divided into two groups as follows:

Study group: 125 women who received Benson relaxation technique and pre and post laparoscopic instruction

Control group: 125 women who received standard hospital routine care.

Sample size:

Sample size was calculated based on the previous year census report of the endoscopic unit at Zagazig University Hospital. The sample size was calculated using G 'power' version 3.1, according to the study of **Mohamed A.&Abd Elhady R. (2016)** Sample size was calculated utilizing the following formula: -

$$\mathrm{n} = \frac{n}{1 + n(e)2}$$

Study setting:

Endoscopic unit at Zagazig University Hospital

Tools of data collection: Four tools were used for collecting the necessary data.

<u>Tool I:</u> Structured Interview questioner this tool was developed and used by the researchers to elicit the basic data as follows:

Part I: Socio-demographic data, including: age, level of education, occupation, current residence.

Part II: Clinical data of medical and marital history including: - presence and types of medical disease, marital status, number of marriages, number of children and mode of last delivery.

<u>Tool II:</u> Knowledge assessment tool (pre/post educational intervention): it was a self-administered assessment tool developed by the researchers after revising relevant literatures. It was written in Arabic language in the form of close and open-ended questions and consists of the following four parts:

Part I: Concerned with women's knowledge regarding definition and indication of abdominal laparoscope, advantage of laparoscope if compared with surgery.

Part II: Focused on women' knowledge regarding pre and postoperative preparation of laparoscope.

Part III: Concerned with women's knowledge regarding complication and danger signs that may occur after laparoscope that need seeking medical advices

Part VI: Focus on causes of shoulder pain after laparoscope and methods used to alleviate it (Benson relaxation technique).

Tool III: Tool IV: Taylor Manifest Anxiety Scale: developed by Taylor (1953), it was used to assess anxiety. It has a high degree of validity and reliability. The scale has 50 statements with Yes/No answer. The number of "Yes" responses is calculated by simple summation. The scores are categorized by levels of anxiety as follows: Non <17, mild: 17-20, moderate: 21-26, severe: 27-29, very severe: 30+.

Tool IV: Visual analog scale (VAS). This tool was originally developed by **Melzack and Katz (1994).** It is a self-report device for measuring shoulder pain intensity. It was adopted and translated into the Arabic language to suit the Egyptian culture. It consists of a horizontal line used for subjective estimation of the patient's pain. It comprises a 10-point numerical scale, corresponding to the degree of pain with zero representing no pain and 10 representing the worst degree of pain. In between these two opposite ends, words as mild, moderate, severe and unbearable are assigned to each 2 cm distance, respectively.

Ethical considerations:

For each recruited subject the following issues were considered: Securing the subject's informed consent, keeping the subject's privacy, assuring the subjects data confidentiality, and the right to withdraw at any time. Approvals an official letter from the Faculty of Nursing, Zagazig University of was directed to the responsible authorities to obtain their permission to conduct the study after explaining its purpose.

Consent: Each woman was individually interviewed and informed about the aim of the study in order to obtain her informed consent to participate in the study. Again, each of those who agreed to take part in the study was assured about confidentiality, privacy and right to withdraw at any time.

Tool's reliability: Tools reliability was tested using Cronbach's Alpha test (internal consistency). Its result was 0.80 which indicates a satisfactory and accepted reliability of the tool.

Pilot study

A pilot study was carried out on 10 women (who were excluded from the main study sample) and the necessary changes were undertaken. The main purposes of the pilot study were to ascertain clarity, relevance and the applicability of the tools, detect any problem peculiar to the statements as a sequence and clarity that might interfere with the process of data collection, as well as estimate the time needed to complete the sheet. Results of the pilot study were the tools were clear, relevant, and applicable and no changes were made, no problem that interfered with the process of data collection was detected, and each interview took approximately twenty to thirty minutes.

Data collection (procedure)

Field work:

Data collection had been done over a period of seven months which started from the first of September 2021 to the end of March 2022. The previously mentioned settings were visited by the researchers two days/week. The study was carried out through four phases: Assessment, planning, implementation and evaluation.

Assessment phase:

This phase involved the pre-intervention data collection for baseline assessment. The researchers first introduced themselves and explained the purposes of the research briefly to the manager of gynecological laparoscope unite. All the women were met and their written consents for participation were obtained. At the beginning of interview the researchers greeted the women, introduced themselves to all women included in the study and distributed the questionnaire to them and answered any explanation needed. The pretest questionnaire was distributed and self-administered by the women themselves during their booking day of laparoscope (for both study and control group) and then the same questionnaire was used immediately after the intervention implementation for post assessment (post-test). The time consumed for answering the study questionnaire ranged from 20-25 minutes.

Planning and implementation phase:

Based on review of literature the researchers designed the intervention content, which was validated by a panel of expertise's and then distributed to women to be used as a guide learning and to satisfy the studied women' deficit knowledge regarding laparoscopes. The intervention was conducted in Arabic language to be easily understood.

Objective:

By the end of the intervention, the women should be able to;

- Defined laparoscope and its indication
- List pre- and post-operative preparation of laparoscope
- Recognize danger signs that may occur after laparoscope
- Identify ways used to alleviate shoulder pain after laparoscope

The researchers meet each woman in study group during their booking visit to gynecological laparoscopic unit. The intervention was implemented in one interactive session for each group that consists of 4-5 women according to cases flow and session was conducted for one hour.

Health educational session was given to the women in the form of two parts:

Part one: lectures and group discussion by using audio-visual aids, it emphasized on improving women knowledge regarding to laparoscope. At the beginning of the session an orientation to the educational intervention such as; the rationale, importance of the subject, contents, time and location were elaborated in order to establish good communication. An additional 15 minutes were assigned at the end of the session for an open discussion with women about this topic. An educational intervention containing brief points about laparoscope was distributed to women at the end of session.

Part two: Women watching video about steps to perform Benson relaxation technique. Training women how to properly perform the Benson Relaxation Technique and their questions were answered.

- The relaxation technique was started in post laparoscopic while women in a supine or sitting position. The Benson relaxation technique was carried out for 20 minutes.
- Women must be in a relaxed sitting position then close her eyes, relax all her muscles beginning at her feet and progressing up to her face followed by relaxing all body parts.
- Women instruct to inhale through her nose listen breathing sound say the word "one" silently to herself while exhaling, and continue for 20 minutes.
- Women instructed to listen to music during performing relaxation technique when the music finished, eyes remained closed for a few minutes, and then they were opened.

Evaluation phase:

For each woman three evaluations were done, the first one was at the beginning of the study as a baseline data (pre-test). The second evaluation (posttest) was conducted immediately after the intervention, while the third was after laparoscope for both control and study group to assess anxiety level among women then level shoulder pain after 6 hours and after 12 hours.

Statistical methods:

Data collected throughout history, basic clinical examination, laboratory investigations and outcome measures coded, entered and analyzed using Microsoft Excel software. Data were then imported into Statistical Package for the Social Sciences (SPSS version 20.0) (Statistical Package for the Social Sciences) software for analysis. According to the type of data qualitative represent as number and percentage, quantitative continues group represent by mean ± SD, the following tests were used to test differences for significance; Difference and association of qualitative variable by Chi square test (X^2). Differences between quantitative independent groups by t test paired t for paired data. P value was set at <0.05 for significant results & <0.001 for high significant result. Data were collected and submitted to statistical analysis. The following statistical tests and parameters were used.

Results

Table 1. Demographic characteristics of study and control group

Items			Study	Control	t	P
Age			32.27±9.76	30.81±10.31	1.873	0.064
Occupation	House wife	N	103	108	2.63	0.219
		%	72.4%	86.4%		
	Employee	N	22	17		
		%	17.6%	13.6%		
Income	Enough	N	110	113	2.68	0.211
		%	88.0%	90.4%		
	Not	N	15	12		
		%	12.0%	9.6%		
Education	Illiterate	N	8	2	FISHER 4.21	0.061
		%	6.4%	1.6%		
	Prep & secondary	N	67	79		
		%	53.6%	63.2%		
	University	N	43	44		
		%	34.4%	35.2%		
	Post graduate	N	7	0		
		%	5.6%	0.0%		
Residence	Rural	N	58	49	1.32	0.25
		%	46.4%	39.2%		
	Urban	N	67	76		
		%	53.6%	60.8%		

Table 1 Reveals that Mean ±SD age 32.27±9.76 and 30.81±10.31 for study and control group respectively. The largest proportion of study (72.4 %) and control (86.4 %) of both groups were housewife. As regards education, 53.6 % and 63.2% of study and control group respectively were preparatory or secondary educated. Finally, more than half of both study and control groups were living in urban areas 53.3% & 60.8% respectively. With no statistically significant differences regard demographic data between both groups.

Table 2. Medical and marital history of study and control group.

Items			Study	Control	t	P
Medical history	Yes	N	23	25	0.103	0.74
		%	18.4%	20.0%		
	No	N	102	100		
		%	81.6%	80.0%		
	DM	N	10	2	4.23	0.051
		%	8.0%	1.6%		
	HTN	N	13	23		
		%	10.4%	18.4%		
Marital status	Married	N	110	101	2.46	0.117
		%	88.0%	80.8%		
	Not Married	N	15	24		
		%	12.0%	19.2%		
Number of marriages	One	N	95	88	0.99	0.31
		%	76.0%	70.4%		
	Two	N	30	37		
		%	24.0%	29.6%		
Having children	No	N	59	62	2.47	0.108
		%	47.4%	49.6%		
	1.00	N	44	41		
		%	35.6%	32.6%		
	2.00	N	15	22		
		%	17.0%	17.6%		
Mode of last delivery	NO	N	59	62	3.95	0.061
		%	47.2%	49.6		
	Normal	N	37	18		
		%	29.6%	14.4%		
	CS	N	29	45		
		%	23.2%	36.0%		

As regards medical and marital history of study and control group table 2 shows that there is no statistically difference observed between study and control group as majority of women in both group had no medical history of disease 81.6% and 80% in study and control group respectively. Also, majority of them were married 88.0% and 80.8% in study and control group respectively. As well as near half of both group 47.4% of study group and 49.6%in control have children. Finally, 29.6% of study group have normal vaginal delivery as mode of last delivery compared to 36% in control group have CS as mode of last delivery.

Table 3. Utilization of family planning methods and genital tract infection among study and control group.

Items			Group		X^2	P
			Study	Control		
Utilization of FP	Yes	N	73	76	3.12	0119
		%	58.4%	60.8%		
	No	N	52	12		
		%	41.6%	9.6%		
Type FP	IUD	N	52	39	3.71	0.071
		%	41.6%	31.2%		
	Pills	N	21	21		
		%	17.6%	17.6%		
	More than one methods*	N	52	64		
		%	40.8%	51.2%		
Genital infection	Yes	N	88	93	3.22	0.101
		%	70.4%	74.4%		
	No	N	37	15		
		%	29.6%	12.0%		
Total		N	125	125		
		%	100.0%	100.0%		

* More than one answer –total more than 100%

Table 3 shows that 58.4 % in the study group had utilize family planning in the form of IUD 41.6%, contraceptive pills 17.6% and 40.8 % use more than one methods compared to 60.8% in control group in the form of IUD 31.2%, the same percent for pills and 51.2% for more than one methods. As regards occurrence of genital tract infection 70.4% in study group reported occurrence of genital tract infection compared to 74.4% in control group. No statistically significant difference was found (P>0.05).

Part II: knowledge of studied women regarding gynecological laparoscopic

Table 4. Distribution of the studied groups regarding gynecological laparoscopic data

Items			Group: Study	Control	X^2	P
Indication of laparoscope	Diagnostic	N	58	68	1.60	0.206
		%	46.4%	54.4%		
	Therapeutic	N	67	57		
		%	53.6%	45.6%		
Receive Instruction about laparoscope	Yes	N	82	74	1.09	0.29
		%	65.6%	59.2%		
	No	N	43	51		
		%	34.4%	40.8%		
Who give instruction	Doctor	N	46	42	4.53	0.209
		%	36.8%	33.6%		
	Nurse	N	28	30		
		%	22.4%	24.0%		
	Internet	N	8	2		
		%	6.4%	1.6%		
Total		N	125	125		
		%	100.0%	100.0%		

Table 4 shows that both groups are nearly matched as regards laparoscope data with no statistically significance difference observed as 46.4% of study group perform laparoscope as diagnostic method and 53.6% as therapeutic compared to respectively 54.4% and 45.6% in control group, whereas 65.6% in study group receive instruction before laparoscope compared to 59.2% in control group. This instruction were given by doctor or nurse with nearly percent in both groups.

Table 5: Distribution of the studied groups according to their knowledge about definition and indication gynecological laparoscopic.

Items				Group: Study	Control	X^2	P
Pre-intervention	Definition and indication of laparoscope	Right	N	0	0	2.05	0.15
			%	0.0%	0.0%		
		Incomplete	N	28	38		
			%	22.4%	30.4%		
		Wrong	N	97	87		
			%	77.6%	69.6%		
Post- intervention	Definition and indication of laparoscope	Right	N	94	2	163.74	0.00**
			%	75.2%	1.6%		
		Incomplete	N	27	38		
			%	21.6%	30.4%		
		Wrong	N	4	85		
			%	3.2%	68.0%		
	P			0.00**	0.758		

*Cases significantly better in post and Significant improvement in cases

Table 5 clarifies there was a highly statistically significant difference presented between the studied groups regards their knowledge about definition and indication laparoscope pre and post application of discharge plan. As 77.6% in study group reported wrong answer compared to 69.6% in control group in pre-intervention phase. In post intervention phase 75.2% and 21.6% in study group reported right and incomplete answer respectively compared to 1.6% and 30.4% in control group reported right and incomplete answer respectively.

Table 6. Comparison between laparoscope and surgical operation by studied groups

Items			Group: Study	Control	X^2	P
Pre-intervention	Right	N	14	10	3.29	0.075
		%	11.2%	8.0%		
	Incomplete	N	59	50		
		%	47.2%	40.0%		
	Wrong	N	52	65		
		%	41.6%	42.0%		
Post- intervention	Right	N	97	0	184.11	0.00**
		%	77.6%	0.0%		
	In complete	N	28	40		
		%	22.4%	32.0%		
	Wrong	N	0	85		
		%	0.0%	68.0%		
P			0.00**	1.00		

*Cases significantly better in post and Significant improvement in cases

Table 6 presents highly statistically significant difference between study and control group regarding pre and post intervention comparison between laparoscope and surgical operation. In post intervention phase 100 % of study group reported right and incomplete answer compared to32% in control group.

Table 7: Post gynecological laparoscopic danger signs data distribution between studied groups.

Items			Group: Study	Control	X^2	P
Pre- intervention	Right	N	0	0		
		%	0.0%	0.0%		
	Incomplete	N	50	53		
		%	40.0%	42.4%		
	Wrong	N	75	72	3.08	0.152
		%	60.0%	57.6%		
Post- intervention	Right	N	102	0		
		%	81.6%	0.0%		
	Incomplete	N	7	33	172.38	0.00**
		%	5.6%	26.4%		
	Wrong	N	16	92		
		%	12.8%	73.6%		
P			0.00**	1.00		

Concerning Post laparoscope danger signs table 7 represents that 86.2% of study group reported right or incomplete answer in post intervention phase compared to 26.4% in control group. Difference observed was statistically significant.

Table 8: Total score of knowledge regarding pre and post gynecological laparoscopic instruction between studied groups.

Items	Study	Control	t	P
Pre laparoscopic instruction				
Pre intervention	5.29±1.85	4.97±1.67	0.476	0.634
Post intervention	10.18±0.72	4.97±1.67	10.194	0.00**
P	0.00**	1.00		
Post laparoscopic instruction				
Pre intervention	2.96±0.93	3.12±1.23	2.980	.003
Post intervention	4.17±0.54	3.12±1.23	11.970	0.00**
P	0.024*	1.00		

Table 8 illustrated that there was statistically significant improvement of total knowledge score regarding pre laparoscopic instruction between studied groups in study group 5.29±1.85 in pre-intervention phase improved to 10.18±0.72 in post intervention phase with no significant improvement in control group. As well as a statistically significant improvement of total knowledge score regarding post laparoscopic instruction between studied groups in study group 2.96±0.93 in pre-intervention phase improved to 4.17±0.54 in post intervention phase with no significant improvement in control group

Table 9. Total score of knowledge regarding danger signs after gynecological laparoscopic among the studied groups.

Items	Study	Control	T-value	P-Value
Pre intervention	4.06±1.42	4.21±1.84	1.337	0.285
Post intervention	5.84±0.63	4.21±1.82	4.087	0.00**
P	0.00**	1.00		

Table 9 reveals a positive statistically significant improvement of total knowledge score regarding danger signs after laparoscope between studied groups in study group it was 4.06±1.42 in pre-intervention phase improved to 5.84±0.63 in post intervention phase with no significant improvement in control group.

Table 10. Pre and post -intervention total knowledge score distribution between studied groups.

	Study	Control	T-value	P-Value
Pre- intervention	5.70±1.82	6.52±2.03	1.043	0.298
Post intervention	13.97±0.81	6.52±2.13	12.805	0.00**
P	0.00**	1.00		

Table 10 clarifies there was a highly statistically significant difference presented between the studied groups for the study group versus the control group. There was a significance improvement in total knowledge score form 5.70±1.82 in pre-intervention phase to 13.97±0.81 with no significant improvement in control group.

Part III: Post gynecological laparoscopic shoulder pain and anxiety level among studied women

Table 11. Distribution of the studied groups according to severity of shoulder pain post gynecological laparoscopic.

Items		Group: Study	Group: Control	X^2	P
Pain intensity after 6 hours from laparoscopic surgery					
No pain	N	22	0	24.78	0.00**
	%	17.6%	0.0%		
Mild	N	36	39		
	%	28.8%	31.2%		
Moderate	N	46	61		
	%	36.8%	48.8%		
Sever	N	7	10		
	%	5.6%	8.0%		
Very sever	N	14	15		
	%	11.2%	12.0%		
Pain intensity after 12 hours from laparoscopic surgery					
No pain	N	44	25	22.67	0.00**
	%	35.2	20.0		
Mild	N	40	30		
	%	32.0	24.0		
Moderate	N	36	50		
	%	28.8	40.0		
Sever	N	5	20		
	%	4.0	16.0		
Very sever	N	0	0		
	%	0.0	0.0		

It was noticed in table 8 that the severity of shoulder pain after performance of Benson relaxation technique in postoperative period was significantly effective in relive shoulder pain in the first 6 hour in 17.6% in study group compared to 0% in control group. After 12 hour 67% of women in study group reported no or mild pain compared to 45% in control group difference observed was statistically significant.

Table 12. Distribution studied groups according to mean visual analogue pain scale.

Mean Visual analogue pain scale	Study	Control	t/ X^2	P
	Mean + SD	Mean + SD		
Pre intervention	33.03±5.36	32 .65±9.71	0.977	0.330
Post intervention	14.42±2.36	29.96±8.29	18.321	0.00**
P	0.00**	0.152		

According to table 12 it is clear that, Visual analogue pain scale mean score, it was observed that before and after performing Benson relaxation technique, nearly the same among the study group and control group (33.03±5.36 and 32 .65±9.71 respectively), there was no statistically significant difference between the both groups, where (P=0.100). After intervention, the VAS mean score among the study group was lower than that of the control group (14.42±2.36 and 29.96±8.29 respectively), there was highly statistically significant difference was found between the both groups, where (P=0.00). The difference between the means of the VAS scoring system among the study and control groups was statistically significant (P=0.00).

Table 13. Pre and post intervention total anxiety score among studied groups

Items			Study	Control	t/ X^2	P
Total anxiety score (pre)			33.03±5.36	32 .65±9.71	0.977	0.330
Total anxiety score (post)			14.42±2.36	29.96±8.29	18.321	0.00**
P			0.00**	0.152		
Pre intervention Anxiety level	Moderate	N	7	9	4.14	0.075
		%	5.6%	7.2%		
	Sever	N	21	16		
		%	16.8%	12.8%		
	Very sever	N	97	100		
		%	77.6%	80.0%		
Post intervention Anxiety level	Mild	N	117	0	225.5	0.00**
		%	93.6%	0.0%		
	Moderate	N	5	19		
		%	4.0%	15.2%		
	Sever	N	4	20		
		%	2.4%	17.0%		
	Very sever	N	0	86		
		%	0.0%	67.8%		
P			0.00**	0.0685		

Table 13 Shows that total anxiety score in study group decrease after performing Benson relaxation technique to 14.42±2.36 compared to 29.96±8.29 in control group a highly statistically significant difference was observed. As regards anxiety level 93.6% of women in control group reported mild degree of anxiety in post intervention phase compared to 84.8% of women in control group reported sever and very sever level of anxiety difference observed was statistically significant.

Discussion

Gynecological laparoscopic one of minimally invasive procedures is a commonly used procedure in diagnosis and management of various kinds of clinical problems, including gynecologic organ-related diseases. Compared with conventional exploratory laparotomy, the benefits of laparoscopic surgery include reduction of surgical wound, decreasing in postoperative pain, shortening hospital stay, rapid recovery, and a better cosmetic result. However, there are still up to 80% of patients after laparoscopic surgery

Complaining of high levels of pain and needing pain relief. Post-laparoscopic pain can be separated into distinct causes, such as surgical trauma- or incision wound-associated inflammatory change, and pneumo-peritoneum biochemical changes of peritoneum and diaphragm. **(Chih-Hsuan Saoa et al., 2019).**

As well as, Pain sensation can be reduced by pain management. Pharmacological and non-pharmacological treatments can be used. Benson Relaxation Technique is a non-pharmacological way suitable to reduce pain, but there are limited studies on its post laparoscopic use. So, the present study aimed to assess effect of Benson relaxation technique on shoulder pain intensity and anxiety level of women undergoing gynecological laparoscopy.

According to the results of the current study it can be noticed that the study groups were matching in almost all of their socio-demographic characteristics as well as their obstetrics and marital history. Generally speaking, the similarity of these variables was useful in limiting extraneous factors, which could interfere with the effect of the intended intervention. It also helped in understanding and securing the reliability and relevance of the forthcoming results of the current study.

As regards indication of laparoscope no statistically significance difference observed between both groups as nearly half of both groups undergo therapeutic and the other half undergo diagnostic laparoscope, and more than half of both group receive instruction before laparoscope this instruction were given by doctor or nurse with nearly percent in both groups. This finding supported by **Beltzer C., et al (2020)** who reported that the indications for laparoscopic operations have been steadily expanding. However, the diagnostic and therapeutic value of laparoscopy in the therapy of blunt and penetrating abdominal injuries is still debatable.

Although more half of studied women reported that had instruction about laparoscope but there was a highly statistically significant difference presented between the studied groups regards their knowledge about definition and indication laparoscope pre- and post-operative instruction and danger signs after laparoscope. In post intervention phase more than three quarter of the study group reported right answer compared one third in control group reported right and incomplete answer respectively. There was a significance improvement in total knowledge score form 5.70±1.82 in pre-intervention phase to 13.97±0.81 with no significant improvement in control group.

The previous finding supported by **Al safi, et. al, (2019)** in a study about Assessment of knowledge of women about gynecological laparoscopic and hysteroscopic operations in Kerbala city. Who reported that there is good information of the women about the preoperative preparations, low level of knowledge about the role of such endoscopic operations in resolving common gynecological pathologies and this needs from us more concentration about education programs, social media use and role of medical staff in increasing this knowledge.

In another study conducted by **Adam G.,et al (2015)** about patient perceptions about laparoscopy at Komfo Anokye teaching hospital, Ghana who reported that knowledge about laparoscopy and its benefits are severely lacking among patients at KATH. Once educated about its benefits, most people prefer laparoscopy even if they needed to pay more for it even in resource-limited countries like Ghana.

The present study represented that Bensons Relaxation Technique was significantly decreased shoulder pain severity among study group after intervention compared to control group. As severity of shoulder pain after performance of Benson relaxation technique in postoperative period was significantly effective in relive shoulder pain in the first 6- and 12-hour difference observed was statistically significant. The current study results are relatively compatible with a study conducted in **D'Souza and Miranda (2020),** and **Devmurari and Nagrale (2018)** who studied the effect of BRT on pain management among post-CS women who that reported a statistically significant improvement in favor of the experimental group, whereas the mean of post-intervention pain score gradually decreased at different time intervals than in the control group.

Also, in another study conducted in Egypt by **Zaghloul MG. et al., (2022)** about effect of Benson Relaxation Technique on pain intensity, anxiety level and sleep quality among post caesarean women who reported that Benson's Relaxation Technique was significantly decreased pain severity among study group after intervention compared to control group.

As regards anxiety level majority of women in control group reported mild degree of anxiety in post intervention phase compared to 84.8% of women in control group reported sever and very sever level of anxiety difference observed was statistically significant. This finding was in agreement with **Zaghloul MG. et al., (2022)** who reported that there was a statistically significant effect of Benson's relaxation technique when applied among post cesarean section women on reducing level of anxiety of the study group

In the same line **Windartik and Yuniarti et al., (2017)** who conducted a study about "effect of progressive muscle relaxation on stress and disability in subjects with chronic low back pain". They concluded that progressive muscle relaxation significantly reduced disability behaviors and functions related to pain and stress.

Conclusion

Based on the result of the present study, it can be concluded that there was a significance improvement in total knowledge score of women in a study group after application of an educational intervention. As well as Benson relaxation technique had a highly statistically significant positive effect on reducing intensity level of shoulder pain and level of anxiety among women undergo gynecological laparoscope.

Recommendations

Based on the findings of the current study, the following recommendations can be suggested:

- Women undergo gynecological laparoscope need more knowledge and explanation about pre and post laparoscopic preparation
- Benson relaxation technique is a practice that is inexpensive, effective, and easy to apply during post laparoscopic period.
- Nursing staff should be instructed to enroll in training program about non pharmacological method of pain relive after laparoscope such as Benson relaxation technique.
- Replication of the study using a large sample size from a broad geographical area to allow greater generalization of the results.

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