

Effectiveness of Evidence Based Nursing Guidelines on Thyroidectomy Patients Health Outcomes at General Surgery Departments

¹Rehab Rashwan Mohammed, ² Hanan Gaber Mohamed, ³ Amal Said Taha and ⁴ Eman Sobhy Omran

(1) Assistant Lecturer of Medical Surgical Nursing, Faculty of Nursing, Benha University, Egypt, (2) Professor of Medical Surgical Nursing, Faculty of Nursing, Benha University, Egypt, (3) Assistant professor of Medical Surgical Nursing, Faculty of Nursing, Benha University, Egypt and (4) Lecturer of Medical Surgical Nursing, Faculty of Nursing, Benha University, Egypt

Abstract

Background: Implementation of evidence-based nursing guidelines for thyroidectomy patients can enhance their health outcomes by improving compliance and promoting healthy lifestyles. **Aim of study:** This study aimed to evaluate the effectiveness of an evidence based nursing guidelines on thyroidectomy patients' health outcomes at General Surgery departments.. **Research design:** A Quasi –experimental research design was conducted to achieve the aim of this study. **Subjects:** A purposive subject of 80 adult patients who were admitted within 9 months in the General Surgical departments at Benha University Hospital, scheduled for thyroidectomy surgeries and accepted to participate in this study. **Setting:** This study conducted in General Surgical departments and outpatient surgical clinic at Benha University Hospital. **Tools of data collection:** three tools were used in this study: **I:** Structured questionnaire assessment. **II:** Patients Practical observational checklist and **III:** Patients' health outcomes assessment. **Results:** There was statistically significance improvement in patient's knowledge, practice and health outcomes immediately, on 7th days and one-month post implementing of evidence based nursing guidelines compared to pre implementing evidence based guidelines ($p = <0.001$) and a positive significant correlation between patients' knowledge and practice was found immediately, on 7th days and one-month post implementing of an evidence based nursing guidelines. **Conclusion:** Implementing of an evidence based nursing guidelines for thyroidectomy patients had improved of patients' health outcomes through high significantly increased level of their knowledge, practice and compliance to discharge instructions scores, and decreased overall postoperative complications rate. **Recommendations:** Developing and designing an in-service training program for nurses' staff members on applying the evidence-based nursing practice in the field of surgical nursing care including pre and postoperative management, especially for thyroidectomy patients.

Keywords: Evidence Based Nursing Guidelines, Health Outcomes, Thyroidectomy.

Introduction

Thyroidectomy is a traditionally and very common surgical procedure all over the world, it's an invasive surgery performed through a small horizontal incision in the front of the neck, the entire thyroid gland may be removed or just a single lobe, a portion of a lobe and the isthmus or other structures.

Depending on the extent of the operation, patients may need to take the drug levothyroxine of an oral synthetic thyroid hormone (Abd-El Mohsen et al., 2018).

Post thyroidectomy frequent complications usually occur due to either surgical procedure itself or the secondary metabolic disturbances. This complications

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include: airway obstruction, hematoma, hypothyroidism, hypocalcemia as well as, neck pain, and stiffness and wound infection **(Sulaiman & Al- Saigh ., 2020)**.

Patient frequently experience discomfort as a result of pressure in the neck such as neck pain & stress and shoulder stiffness. Shoulder and neck movement difficulties may occur because patients' neck remains in a hyperextended position during the prolonged operation. They were unable to move their neck, and that has a negative effects on their quality of life after a thyroidectomy **(Miyuchi et al., 2021)**

Postoperative hypocalcemia is a common biochemical abnormality that can range in severity from being asymptomatic in mild cases to presenting as an acute life-threatening crisis. It was considered when calcium level was lower than 8.0 mg/dl) **(Ahmed & Ahmed ., 2016)**.

Post thyroidectomy hematoma after thyroidectomy is a unusual bleeding into the tissues that surrounding the neck, but is potentially life-threatening if not diagnosed and treated promptly **(Hashem et al., 2018)**.

Nursing interventions should be practical, methodical decisions based on EBP research studies. Moreover, utilizing the EBP approach to nursing practice helps us provide the highest quality and most cost-efficient patient care possible **(Barbara & Jean, 2021)**.

Evidence-based nursing guidelines (EBNG) "are not fixed protocols but are intended to identify generally recommended interventions to be considered by a knowledgeable healthcare provider **(Field & Lohr., 2020)**.

These clinical practice guidelines were developed using recent review of the literatures and research papers, providing by the researcher with best evidence practice. It is the responsibility of the individual in nursing, however, to determine the

applicability of the evidence for a best implementation of guidelines to individual patients.

Significance of the study

The incidence of total thyroid dysfunction in Europe was 259.12 per 100 000 per year **(Madariaga et al., 2016)**. According to American Thyroid Association, 2019 estimated that more than 12 percent of the population will develop a thyroid condition during their lifetime, estimated 20 million Americans have some form of thyroid disease. According to medical records and statistical data of the general surgical departments in the Benha University Hospital revealed that , incidence of major surgeries were 762 operation occur in the 2018 year, about 120 of them were thyroidectomy ,and in 2019 there were 220 patient performed thyroidectomy in this year **(The statistic office of Benha University Hospital., 2020)**.

Aim of the study

This study aimed to evaluate the effectiveness of evidence based nursing guidelines on thyroidectomy patients' health outcomes at General Surgery departments.

Research hypotheses

H1- The mean knowledge and practice score of thyroidectomy patients' who are exposed to evidence based nursing guidelines would be higher than before.

H2- The thyroidectomy patients' health outcomes who are exposed to evidence-based nursing guidelines would be improved than before.

H3- There is a relation between patients' knowledge and practices with their health outcomes and socio demographic characteristics.

Subjects and methods:

Design:

A Quasi –experimental research design was conducted to achieve the aim of this study.

Study setting:

This study was conducted in the general surgical departments at Benha University Hospital and outpatient surgical clinic. The general surgical departments contains nine rooms: 36 beds was included

Study subject:

A purposive subject of 80 patients of both sexes who they admitted within 9 months in the above mentioned setting and scheduled for thyroidectomy surgeries.

Tools for data collection:

Three tools were used to collect study data.

Tool I: Structured questionnaire assessment:

It was adapted by the researcher based on recent and related review of literature (Mohammed et al., 2019). It involved 39 items and divided into three parts:

Part I: Patients' socio demographic data: It aimed to assess the patients profile as age, gender, marital status, occupation and their level of education .

Part II: Health data assessment: This part was designed to assess the patients' health data .It included 7 items related to current medical history, associated medical history and their life style.

Part III- Patients' knowledge assessment:

It was designed by the researcher after reviewing the related and recent literature (Clayman .,2020). It includes 4 parts as the following:

Part I: Concerned with questions related to thyroid gland and thyroidectomy surgery.

Part II: Concerned with questions related to general information about thyroidectomy surgery diet.

Part III: Concerned with questions related to the exercises for thyroidectomy patients.

Part IV: Related to assess of thyroidectomy patients' knowledge about medications.

Scoring system for knowledge:

For items related to knowledge , each open question was answered on a 4 point rating scale with end point (from 0 to 3)as the following : excellent =3, good =2 ,know the basic=1 and don't know =0.The total knowledge score was 81 points by multiply the total score of questions by 3 (rating scale). It was classified as the following : Poor knowledge (<33.3%) , fair knowledge (33.3 %-< 66.67%) and good knowledge (≥66.67%).

Tool 2: Patients Practical observational checklist:

It aimed to assess patient's health practices regarding exercise. It was designed based on review of the related literature and was adopted from (Miyachi et al., 2021)& (Ayhan et al.,2016).

It included: **A)** Head and neck exercises, **B)** Shoulder exercises & **C)** Arms exercises.

Scoring system for practice:

Each item was observed by the researcher and classified as the following: completely done, incompletely done and not done, then categorized as follow: scores of 2, 1 and zero, respectively.

Tool 3: Patients' health outcomes assessment:

This tool was developed to assess patients' health outcomes as an effect of evidence based nursing guidelines implementation on thyroidectomy patients. The patients' health outcomes were included three parts as follow:

Part I: Neck pain and disability Index:

It was adapted by the researcher after reviewing the related literature (International Spine and Pain Institute, 2017),. It aimed evaluate the effectiveness of evidence based nursing guidelines on minimizing post-operative neck pain and disability for thyroidectomy patients. It included 4 items as follows: Pain intensity, personal care, concentration and sleeping

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Scoring system for neck pain and disability index:

Add up the total score (20) for the 4 questions and rate them on this scale: Score

0 - 5 = No disability.

Score 6 - 10 = Mild disability.

Score 11- 15 = Moderate disability.

Score 16- 20 = Severe disability.

Part II: Patients' problem and complications assessment:

It was adapted by the researcher through reviewing the related literature (Eismontas et al., 2018). It contains 20 items, as follow:

a) Hypocalcaemia: consisted of 7 items as :muscle cramps tingling lip, hand, fingers and face

b) Hypothyroidism: It included 8 items of sign and symptoms as: weight gain, constipation, fatigue, lethargy and depression

Scoring system:

The answer for each question included two options either yes or no. If the patients answered no, it scored (zero). If they answered yes, it scored (one) score.

C)- Southampton Wound Assessment Scale: it was adopted from (Hashem et al., 2018)& (Gorad et al.,2021), and designed for the postoperative assessment of wound as : normal healing , normal healing with mild bruising, signs of inflammation, major complication as wound infection.

Scoring system for Southampton Wound Assessment Scale: Grade 0 or I = Normal healing, grade II or III = minor complications grade IV or V = major complication.

Part III- Patients' compliance discharge instruction checklist assessment (PCDIA):

This tool was developed to assess the extent to which patients adhere to instructions after discharge. It was designed by the researcher after reviewing the related literature (Gaspar& Joliat., 2020). It consists of 34 items branched from six titles:

A) Wound care: It included 9 items with total score (9) .

B) Drainage care: Which included 5 items with total score (5).

C) Diet: Which, comprised 7 items with score (7).

D) Follow up plan: Which, included 4 items with total score (4).

E) Activity: which, comprised 4 items with total score (4).

F) Medication: which, comprised 5 items with total score (5).

Scoring system for patients' compliance:

Each item was observed and scored from 0-1 as the following: 0= not done and 1= done. Total score is (34).

Evidence based nursing guidelines (pre-operative- on discharge)

The designed evidence based nursing guidelines was developed based on recent research for best practice regarding thyroidectomy patients.

Content validity:

Content validity was done by group of experts to check the relevancy, clarity, comprehensiveness and applicability of the questions. According to their opinions minor modifications were done and final form was developed. Content validation of the studied tools were modified according to opinions of experts. Tools of data collection were tested content for validity by five experts, three of Faculty of Nursing in Medical and Surgical Nursing field, Benha University and two of general surgery, Faculty of Medicine, Benha University. Their opinions elicited regarding the format, layout, consistency, accuracy and relevancy of the tools.

Testing reliability:

Testing reliability of the developed tools was done through Cronbach's alpha test that was (0.921) for the patients' knowledge about thyroid gland and thyroidectomy surgery, diet ,types of exercise and

medication after surgery , (0.998) patients practical observational checklist,(0.899) for complications assessment, (0.826) for Neck pain and disability Index and (.768) for patients' compliance discharge instruction.

Pilot study:

After the tools had been designed , they were tested through a pilot study and exclude from the result , which was done before embarking on the field work to test the applicability of the study and the clarity, feasibility, objectivity of the developed tools and to estimate the time needed to complete its items. It was conducted on 10 % thyroidectomy patients (9), as well as to estimate the time needed for data collection. According to the result of the pilot study ,no changes were required.

Legal aspect for ethical consideration:

- The research approval was obtained from the ethical committee in the faculty of nursing before starting the study.
- An official approval was obtained from the administrator of the study setting.
- Informal consent from patients to apply this study was secured.
- The research was assure maintaining anonymity and confidentiality of the objective data.
- The study sample was informed that they are allowed to choose to participate or not in the study and they have the right to withdraw from the study at any time .

Field of work :

- The researcher interviewed with each patient individually and got their oral consent.
- Data collection and teaching sessions were conducted in the morning and afternoon shifts, The data were collected in 9 months , from beginning of January 2021 had still at the end of September 2021. The data collection was done through the following phases :

Assessment and planning phase:

Once the researcher got oral consent from the patients, an interview questionnaire was started which is concerned by patients' socio demographic data, health data assessment, knowledge assessment and observing the patient practicing exercise as a baseline data assessment preoperative and pre implementing evidence based nursing guideline, complications were assessed before the studied patient discharge and before follow the discharge instructions.

Implementation phase :

- Based on the initial assessment of patients' knowledge and their information about practicing the exercises, the researcher developed an evidence based nursing guideline and implemented in the form of 3 sessions.

The content of the sessions was divided as follow:

- 1st session:** included knowledge about thyroid gland, thyroidectomy.
- 2nd session:** the researcher demonstrated the head, neck, shoulder & arm exercises for the patients' and then each patients' re demonstrated the exercises.
- 3rd session:** included post discharge instructions.

Evaluation phase:

This phase aimed to evaluate the effectiveness of an evidence based nursing guideline on thyroidectomy patients' health outcomes. That were comparing the results pre and post the implementation of an evidence based nursing guideline. The studied patients were evaluated using the same tools were used in the initial assessment.

Statistical analysis of the data

Data were fed to the computer and analyzed using IBM SPSS software package version 20.0. (Armonk, NY: IBM Corp) Qualitative data were described using number and percent. Kolmogorov-Smirnov test was used to verify the normality of distribution.

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Quantitative data were described using range (minimum and maximum), mean, standard deviation, median. Significance of the obtained results was judged at the 5% level.

The used tests were

- 1-McNemar and Marginal Homogeneity Test.
- 2- ANOVA with repeated measures.
- 3- Wilcoxon signed ranks test.
- 4- Friedman test.
- 5- Chi-square test.
- 6- Fisher's Exact or Monte Carlo correction.
- 7-Spearman coefficient.

Results:

Table (1): Shows that, a total of (80) patients were enrolled in the current study with their mean age was (39.96 ± 9.92) and half (50%) of them ranged between 40 - 60years old. Regarding gender, more than half (56.3%) of the studied patients were female. According to their marital status, the most (81.3%) of the studied patients were married and nearly half of them (47.5%) are house wives. Finally, approximately two fifth (38.8%) of studied group had secondary level of education.

Table (2): Presents that, there was a statistical significance difference between pre and post implementing of evidence based nursing guidelines (post immediate, 7th days & one month) ($p = <0.001^*$).

Figure (1): Illustrates that, the mean percent score of patients' knowledge in pre implementing phase was (14.4%) of total mean score of knowledge and increased to (83.8% & 76.4.%) immediate & 7th day post implementing of evidence based guidelines, respectively. They had decline to (54.2%) of the total mean score after one month post implementing the evidence based nursing guidelines.

Table (3): Shows that, all the studied patient had incompetent level of practice in pre applied evidence guidelines while, three

quarters(75.0% & 73.8%) of them had competent level of practice post immediate & post 7th day of implementing evidence based nursing guidelines.

Figure (2): Illustrates that, 62.5 % of the studied patients' who practicing exercises had competent level and 37.5% had incompetent level of practice post applied of evidence based nursing guidelines. While all the studied patients' had incompetent level of practice pre applied of evidence based nursing guidelines.

Table (4): Shows mean score, standard deviation and significance difference pre and post implementing of evidence based nursing guidelines regarding neck pain and disability index. It illustrated that, the total mean score pre applying evidence based nursing guidelines was (12.91 ± 2.42), while their score was decline to (8.04 ± 3.15 , 3.28 ± 2.53 & 1.89 ± 2.19) on pre discharge, 7th day and one month post implementing of evidence based nursing guidelines with a statically significance difference from pre and post implementing guidelines ($p = <0.001$).

Table (5): Reveals that, all the studied patients had normal healing appearance pre implemented evidence based guidelines and post (pre discharge) and most (83.8% , 91.3%) of them had normal healing appearance post 7th days & one month, respectively.

Table (6): Shows correlation between patients' practice exercises and neck pain and disability Index pre and post implementing evidence based nursing guidelines. It revealed that, there was a negative correlation between patient practice with neck pain and disability Index ($p \leq 0.05$) pre and on immediate, 7th day & one month post implementing of evidence based nursing guidelines. While, there was no significant correlation between patient knowledge with neck pain and disability Index ($p > 0.05$) pre

and on immediate, 7th day & one month post implementing of evidence based nursing guidelines.

Table (1): Frequency distribution of the studied patients according to their demographic characteristic (n = 80)

Demographic data	No.	%
Age (years)		
20- < 30	10	12.5
30 - < 40	30	37.5
40- : 60	40	50.0
Mean ± SD.	39.96 ± 9.92	
Gender		
Male	35	43.8
Female	45	56.3
Marital status		
Single	15	18.8
Married	65	81.3
Occupation		
No work	3	3.8
Manual work	19	23.7
Written work	20	25
House wife	38	47.5
Level of Education		
Illiterate	15	18.8
Primary	13	16.3
Secondary	31	38.8
University	21	26.3

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Table (2): Distribution , mean score and significance difference of the patients' knowledge regarding thyroid disease, thyroidectomy diet, medication and exercise pre & post of evidence based nursing guidelines implementation (n = 80)

Variable	Pre test (pre-operative)		Post test						p ₁	P ₂	P ₃	p ₄	Fr
			Immediate (pre-operative)		7 days (post-operative)		1 Month (post-operative)						
	No.	%	No.	%	No.	%	No.	%					
- General information of thyroid disease and thyroidectomy													
Poor (<33.3%)	80	100.0	0	0.0	0	0.0	0	0.0	<0.001*	<0.001*	<0.001*	<0.001*	214.562*
Fair (33.3 %-<66.67%)	0	0.0	3	3.8	2	2.5	56	70.0					
Good (≥66.67%)	0	0.0	77	96.3	78	97.5	24	30.0					
Mean ± SD (TS :27)	3.89 ± 1.56		22.73 ± 2.44		22.13 ± 2.25		15.73 ± 3.02						1137.780*
- Diet information													
Poor (<33.3%)	68	85.0	0	0.0	0	0.0	2	2.5	<0.001*	<0.001*	<0.001*	<0.001*	196.876*
Fair (33.3 %-<66.67%)	12	15.0	5	6.3	23	28.8	66	82.5					
Good (≥66.67%)	0	0.0	75	93.8	57	71.3	12	15.0					
Mean ± SD (TS :24)	5.01 ± 2.38		19.58 ± 2.25		16.50 ± 2.52		12.56 ± 2.62						524.212*
Exercises													
Poor (<33.3%)	80	100.0	0	0.0	0	0.0	3	3.8	<0.001*	<0.001*	<0.001*	<0.001*	210.054*
Fair (33.3 %-<66.67%)	0	0.0	0	0.0	10	12.5	70	87.5					
Good (≥66.67%)	0	0.0	80	100.0	70	87.5	7	8.8					
Mean ± SD (TS:15)	1.38±1.21		12.76 ±1.59		12.31 ±1.75		8.08 ±2.25						739.319*
Medication :													
Poor (<33.3%)	80	100.0	0	0.0	0	0.0	8	10.0	<0.001*	<0.001*	<0.001*	<0.001*	640.108*
Fair (33.3 %-<66.67%)	0	0.0	0	0.0	18	22.5	59	73.8					
Good (≥66.67%)	0	0.0	80	100.0	62	77.5	13	16.3					
Mean ± SD (TS :15)	1.40 ± 1.23		12.85 ±1.45		10.96 ±1.93		7.53 ± 2.44						
Over all Knowledge													
Mean ± SD (TS :81)	11.68 ± 3.01		67.91 ± 5.04		61.90 ± 3.85		43.89 ± 5.90		<0.001*	<0.001*	<0.001*	<0.001*	2709.042*

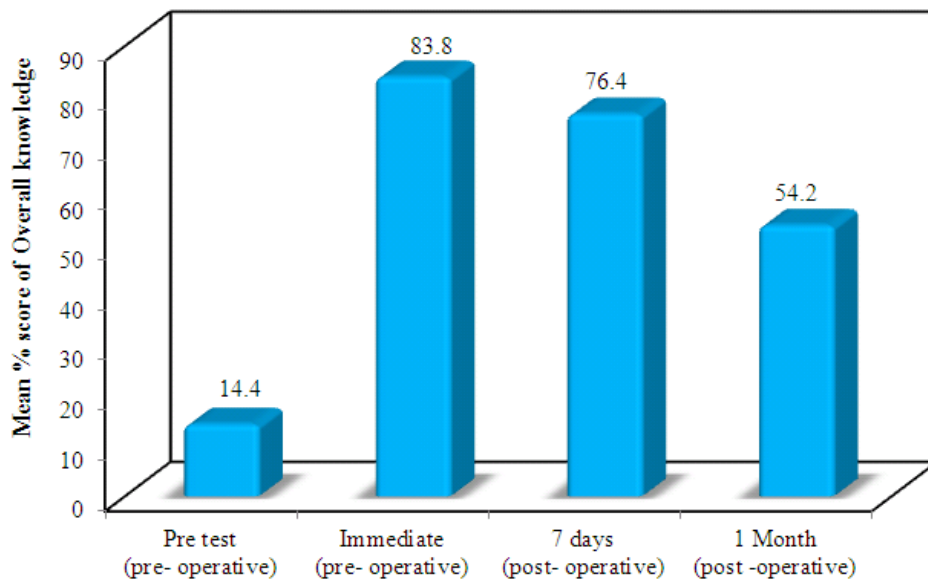


Figure (1): Mean % score of patients' knowledge about thyroid disease and thyroidectomy pre & post of evidence based nursing guidelines implementation (n = 80)

Table (3): Distribution of the studied patient practice and its significance difference according to their competent levels regarding neck , shoulder & arm exercises pre and post implementing of evidence based nursing guidelines (n = 80)

Practice items	Pre test (pre-operative)		Post test						P1	P2	P3	P4	Fr
			Immediate (pre-operative)		7 days (post-operative)		1 Month (post-operative)						
	No.	%	No.	%	No.	%	No.	%					
1-Head and neck exercises													
Competent ≥80%	0	0.0	60	75.0	59	73.8	7	8.8	<0.001*	<0.001*	=0.391	<0.001*	149.339*
Incompetent <80%	80	100.0	20	25.0	21	26.3	73	91.3					
Mean ± SD	5.70 ± 2.58		21.06 ± 4.86		20.65 ± 4.77		15.50 ± 2.60		<0.001*	<0.001*	<0.001*	<0.001*	
2- Shoulder exercises									<0.001*	<0.001*			
Competent ≥80%	0	0.0	60	75.0	59	73.8	31	38.8			<0.001*	<0.001*	107.422*
Incompetent <80%	80	100.0	20	25.0	21	26.3	49	61.3					
Mean ± SD	4.53 ± 2.13		17.36 ± 4.05		16.80 ± 3.30		13.84 ± 3.24		<0.001*	<0.001*	<0.001*	<0.001*	
3- Arm exercises									<0.001*	<0.001*	<0.001*		
Competent ≥80%	0	0.0	60	75.0	44	55.0	35	43.8			<0.001*	<0.001*	206.526*
Incompetent <80%	80	100.0	20	25.0	36	45.0	45	56.3					
Mean ± SD	1.31 ± 1.12		5.23 ± 1.28		4.46 ± 1.45		4.23 ± 0.98		<0.001*	<0.001*	<0.001*	<0.001*	
Overall practice (TS): 50									<0.001*	<0.001*	<0.001*	<0.001*	
Mean ± SD	11.54 ± 4.94		43.65 ± 10.12		41.91 ± 7.94		33.56 ± 5.58						

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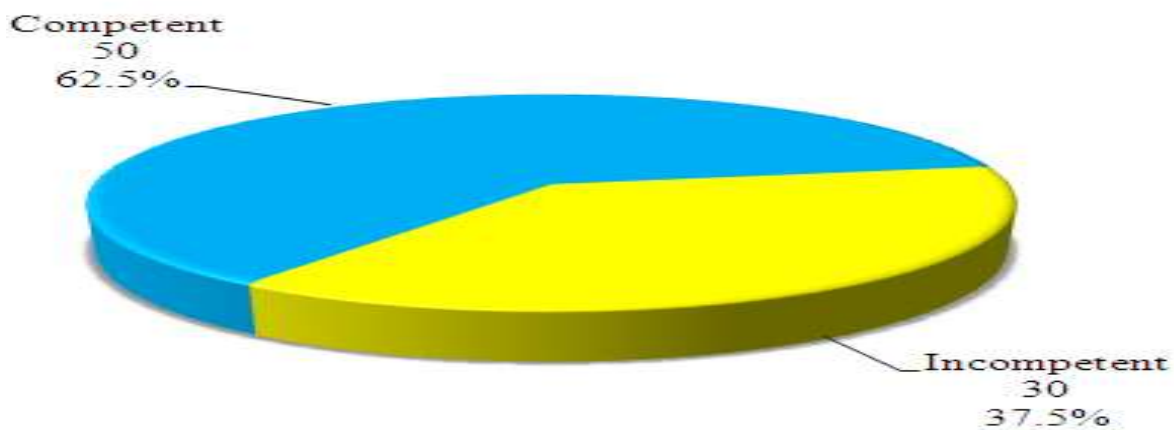


Figure (1): Total level of patients’ practicing exercises regarding to neck stretching exercises post implementing of evidence based nursing guidelines (n = 80)

Table (4): Mean score , standard deviation and significance difference pre and post implementing of evidence based nursing guidelines regarding neck pain and disability Index (n = 80)

Indicators (Total score)	Pre test (2 nd post-operative)		Post test						P1	P2	P3	P4	Fr
	Pre discharge		7 days (post-operative)		1 Month (post-operative)								
	No.	%	No.	%	No.	%	No.	%					
▪ No disability (0–5)	0	0.0	1	1.3	45	56.3	64	80.0					
▪ Mild disability (6–10)	8	10.0	57	71.3	35	43.8	16	20.0	<0.001*	<0.001*	<0.001*	<0.001*	
▪ Moderate disability (11–15)	70	87.5	22	27.5	0	0.0	0	0.0					195.181*
▪ Severe disability. (16–20)	2	2.5	0	0.0	0	0.0	0	0.0					
Mean ± SD.	12.91±2.42		8.04±3.15		3.28±2.53		1.89±2.19		<0.001*	<0.001*	<0.001*	<0.001*	210.504*
% Change			↓36.20±24.25		↓71.72±25.96		↓83.72±21.88						

Table (5):Frequency distribution of the studied patients according to Southampton Wound Assessment Scale pre and post implementing of evidence based nursing guidelines (n = 80)

Complication assessment:	Pre test		Post test					
	(2 nd post-operative)		Pre discharge		7 days (post-operative)		1 Month (post-operative)	
	No.	%	No.	%	No.	%	No.	%
- Southampton Wound Assessment Scale:								
▪ Normal healing appearance (0–1)	80	100.0	80	100.0	67	83.8	73	91.3
▪ Minor complications(2–3)	0	0.0	0	0.0	12	15.0	7	8.8
▪ Major complication (4–5)	0	0.0	0	0.0	1	1.3	0	0.0

Table (6):Correlation between overall patients’ knowledge, practice and neck pain and disability Index pre and post implementing of evidence based nursing guidelines .

Variable		Overall Knowledge				Overall Practice			
		Pre test	Post test			Pre test	Post test		
			Immedi-ate	7 th day	one Month		Immedi-ate	7 th day	one Month
Total Neck pain and disability Index	r _s	0.059	-0.108	-0.162	0.011	-0.226*	-0.240*	-0.278*	-0.251*
	p	0.605	0.341	0.151	0.921	0.044*	0.032*	0.013*	0.025*

Discussion

Implementation of evidence-based nursing guidelines for thyroidectomy patients can enhance their health outcomes by improving compliance and promoting healthy lifestyles. Nurses play a vital role in teaching patients about the signs and symptoms of potential complications plus written and verbal

information regarding reducing post-operative neck pain and disability by neck stretching exercises, wound care, medications, diet modification, activity and follow-up (Hashem et al.,2018).

Regarding to age, the present study revealed that, the half of the studied patients their age ranged from 40-60years old with the

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mean age 39.96 ± 9.92 years. It this may be related to the prevalence of thyroid disease in the oldest age group. This finding was consistent with a study by **Pan et al. (2021)**, about “Application effects of targeted nursing model in patients undergoing thyroid surgery and its influence on patients’ negative emotions” and stated that the mean age of the studied patients was 44.98 ± 4.49 years. This findings is in disagreement with **Eismontas et al. (2018)** study about “Predictors of postoperative hypocalcemia occurring after a total thyroidectomy: results of prospective multicenter study” and revealed that, the mean age of the studied group was 57.2 years.

As regarding to gender, the current study results revealed that, more than half of the studied patients were female. From the researcher point of view this may be due to female gender are as a risk factor thyroid disorder. This finding is agree with **El gammal et al. (2020)**, reported in their study titled “Evaluation of Post-Thyroidectomy Complications in Autoimmune Thyroid Diseases versus Nodular Thyroid Diseases” that the majority of the studied patients were female.

Regarding marital status, the findings of the present study revealed that, most of the studied patients were married. This result is in agreement with the study result by **Abd-El Mohsen & Ahmed (2018)**, titled “Effect of teaching patients neck stretching exercises on neck pain and disability following thyroidectomy” reported that, the most of the studied patients were married.

Concerning the occupation, the findings of the present study revealed that , near to half of the studied patients were house wives. From the researcher point of view, this findings due to that more than half of studied patients were female . This findings is in accordance with **Hashem et al. (2018)**, who reported in their study about “Effect of

Designed Nursing Guidelines on Minimizing Postoperative Complications for Patients Undergoing Thyroidectomy” that, more than half of the studied group were house wives.

In respect to the level of education, the present study revealed that, approximately two fifth of studied group were secondary level of education. This findings is in line with **Ibrahim et al. (2020)**, in their study titled “effect of health teaching handouts on patient’s outcome who undergoing thyroidectomy in general Surgical Departments at Mansoura University Hospitals” and reported that, more than half of the studied patients were at secondary level of education. On the other hand , this result disagree with **Algaid et al. (2019)**, whose study about “Effect of Nursing Instructions on Life Style of Patients Receiving Radioactive Iodine Therapy for Thyroid Disorders” and stated that one third of studied patients are illiterate.

Regarding to total knowledge, about thyroid disease and thyroidectomy the present study indicated that, the most of studied patients had poor knowledge pre applied of evidence based guidelines regarding of thyroid disease and thyroidectomy , diet ,medication & exercise .It may be attributed to low of educational level and lack of communication between health team with patient. While the majority of studied patients had good level of knowledge in post (immediate , 7 days & 1month). This findings compatible with the findings of **Ibrahim et al. (2020)**, it revealed that, the majority of the studied patients had poor level of knowledge about thyroidectomy pre using of the health teaching handouts, while more than half of them had good level of knowledge immediately post using of the health teaching handouts, and fair level of knowledge during follow up phase.

Regarding to their competent levels of practice, all the studied patient had incompetent level of practice pre implemented of evidence based nursing guidelines. From the researcher point, of view this result may be related to two fifth of them at secondary level of educations .While ,three quarters of them had competent level of practice post immediate & post 7th day of implementing evidence based nursing guidelines. It may be attributed to the effectiveness of evidence based nursing guidelines implementation. This result is in agreement with **Saeed et al. (2021)**, that they revealed to, the studied patients had good level of practice after implementing the program compared to pre the program. On the other hand it is disagree with **Al-Metyazidy et al. (2019)**, whose reported that, all the study group had unsatisfactory level of total practice post implanting the training program, who justified that this result could be because the training program was limited to one day.

Regarding to neck pain and disability index, the findings of the present study indicated that , the most of studied patients had moderate disability as a base line assessment regarding neck pain and disability Index while , approximately, three quarters had mild disability in post implement evidence based nursing guidelines (pre discharge) and approximately three fifth and most of studied patients hadn't pain on post 7 days & 1month. From the researcher point of view this improvement could be related to the effect of practicing head , neck , shoulder and arm exercises. This result in the same line with a study supported by **Al-Metyazidy et al. (2019)**, who showed that, there was a positive correlation between the total knowledge and total practice mean scores pre and post program implementation.

Regarding to southampton wound assessment scale, the present study indicated that, all of the studied patients had normal healing appearance on discharge and pre implementing the instructions. And most of the studied patient had normal healing appearance on 7th days & one month post implemented of evidence based nursing guidelines. From the researcher point of view, this result could be was possibly related to the studied patients received instructions about wound care, and had done follow compliance instruction after 7th days & gradual improvement in compliance during one month.

This findings is in the same line with the finding for **Hashem et al. (2018)**, revealed that, significant difference was found in post discharge between the studied patients regarding normal healing and wound infection.

Regarding to correlation between patients overall practice and neck pain and disability Index, the present study revealed that, there was a negative correlation between patient practice with neck pain and disability index pre and on immediate, 7th day & one month post implementing of evidence based nursing guidelines. It could be related to regular practicing the neck stretching exercises which reduced the neck pain and disability. This result is in the line with the study by **Ayhan et al. (2016)**, it illustrated that there was a significant relation between patients practice and neck pain index , that neck stretching exercises significantly reduced both neck pain and disability for one week after the total thyroidectomy.

Conclusion

Based on the results of the current study, it concluded that an improvement was found among the thyroidectomy patients concerning

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their knowledge and practice with high significance difference post immediate, on 7th day and one month post implementing of evidence-based nursing guidelines compared with pre implementing. As well as, an improvement was found in relation to their compliance to discharge instructions with high statistically significant difference on 7th day and one month post implementing of discharge instructions.

Recommendations

1-Apply Evidence-based nursing guidelines for all patients that should be undergoing surgical intervention reaching the high quality of nursing care based on evidence.

2-Integrated Evidence-based nursing practice into the education of nursing curriculum by the committee in the field of nursing reaching for competence in the nursing students' practice clinical skills.

3-Applying evidence-based nursing guidelines in the field of surgical nursing care including pre & postoperative management, especially for thyroidectomy patients with considering including a larger probability sample from different geographical areas for generalization.

4-For future research, the period of follow-up after thyroidectomy need to be longer than 6 months, it is suggested to be 6-12 month, to follow the patients with hypothyroidism and hypocalcemia.

5-Developing and designing an in-service training program for nurses' staff members on applying the evidence-based nursing practice in the field of surgical nursing care including pre and postoperative management, especially for thyroidectomy patients.

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تأثير الإرشادات التمريضية المبنية على الأدلة على المخرجات الصحية لمرضى استئصال الغدة الدرقية في أقسام الجراحة العامة

رحاب رشوان - حنان جابر محمد - أمل سعيد طه - ايمان صبحي عمران

ظهر مفهوم الممارسات المبنية على الأدلة في مطلع الألفية الحالية كأحد المفاهيم التي تؤكد على أهمية اتخاذ القرارات بناء على نتائج البحث العلمي الحديث، مما يقلل التحيز ويؤدي للوصول لممارسات تمتع بكفاءة وفعالية. لذلك ، فإن تنفيذ الارشادات التمريضية المنية على الأدلة لرعاية المرضى الذين تم اجراء جراحة استئصال الغدة الدرقية لهم سيحسن نتائجهم الصحية من خلال تحسين معلوماتهم وممارستهم وأيضا من خلال اتباع تعليمات وارشادات الخروج المتعلقة بالنظام الغذائي، العناية بالجروح، الأدوية، الحركة والنشاط والمتابعة بعد الخروج من المستشفى. لذا هدفت هذه الدراسة إلى تقييم تأثير الإرشادات التمريضية المبنية على الأدلة على المخرجات الصحية لمرضى استئصال الغدة الدرقية في أقسام الجراحة العامة. وقد أجريت هذه الدراسة في قسم العيادات الخارجية للجراحة وأقسام الجراحة العامة بمستشفى بنها الجامعي على ٨٠ مريض من المرضى الواعين والقادرين على التواصل والذين دخلوا أقسام الجراحة العامة لاستئصال الغدة الدرقية خلال تسعة أشهر والذين وافقوا على الانضمام للدراسة. وأسفرت نتائج هذه الدراسة على ان غالبية المرضى الخاضعين للدراسة يتمتعون بمستوى جيد من المعرفة، و مستوى كفاء من الممارسات و ما يقرب من ثلاثة أرباعهم كانت الالام الرقبة والإعاقة لديهم خفيفة قبل الخروج من المستشفى وبعد تنفيذ الارشادات التمريضية المبنية على الأدلة. واوصت الدراسة بتطبيق الإرشادات التمريضية المبنية على الأدلة في مجال الرعاية التمريضية الجراحية بما في ذلك رعاية ما قبل الجراحة وبعدها ، وخاصة لمرضى استئصال الغدة الدرقية مع مراعاة تضمين عينة احتمالية أكبر من مناطق جغرافية مختلفة للتعميم.