

**EFFECT OF HEALTH TEACHING HANDOUTS ON PATIENT'S
OUTCOME WHO UNDERGOING THYROIDECTOMY IN
GENERAL SURGICAL DEPARTMENTS AT MANSOURA
UNIVERSITY HOSPITALS**

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Abstract

Background: About 200 to 800 million people in the world have some form of thyroid disease (Vanderpump, 2011). **Aim:** The current study aimed to examine the effects of health teaching handouts on patients' outcome who undergoing thyroidectomy in General Surgical Departments at Mansoura University Hospitals. **Design:** A quasi experimental research design was used. **Setting:** This study was conducted at the General Surgical Departments at Mansoura University. **Subjects:** Purposive sample was used and consist of forty-two patients. **Tools: Assessment Questionnaire Sheet.** It was consisted of three parts to measure the following; general characteristics, the past and present history, and patient knowledge about discharge care. **Findings:** The majority of the studied patients have poor knowledge about thyroidectomy care pre using of the health teaching handouts, whereas, more than half of the studied patients have fair knowledge about thyroidectomy care post using of the health teaching handouts. There is a highly significant relation between patient's knowledge post using health teaching handouts on thyroidectomy care. **Recommendations:** Simple handouts as booklets and brochures about thyroidectomy care should be developed and distributed at the surgical units. Evidence-based thyroidectomy care guidelines should be integrated in medical surgical courses curriculum for nursing students.

Key words: *Thyroid, endocrine, thyroidectomy, hormonal*

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I. Introduction

Thyroid gland is one situated at the front and sides of the neck, opposite the lower cervical and first thoracic vertebrae. It consists of two lobes, one on either side, joined by a narrower portion called the isthmus, which crosses in front of the trachea just below larynx (Albasri et al, 2013; Watson 2011). There are many variants in the size and shape of the thyroid gland, and the position of the

embedded parathyroid glands. Approximately 50% of thyroid glands may have pyramidal lobe. In rare cases, the Pyramidal Lobe may be the site of primary thyroid disease such as follicular carcinoma (Srikanth et al, 2018). Thyroid disorders are common endocrine disorders encountered in the African region. Environmental and nutritional factors are often implicated in the occurrence of some

thyroid disorders that occur in this part of the world (Anthonia Ogbera , Kuku, 2011; Ogbera and Kuku, 2011). Thyroid disorders are common endocrine disorders encountered worldwide. About 200 to 800 million people in the world have some form of thyroid disease. (Vanderpump, 2011).

According to a study done in Colombia (2018) the prevalence of thyroid stimulating hormone (TSH) was 24.5%, 19% of people had a high prevalence of this hormone, being higher in women (Carmona Carmona et al, 2018). Moreover, Indian study for the prevalence of thyroid disorders in 2015 reported that, almost one-third of the world's population lives in areas of iodine deficiency and account for an estimated 200 million cases worldwide and 42 million cases in India itself (Shukla et al, 2015).

Furthermore, the prevalence of different types of thyroid disease varied between the studies in the Arab World. In Saudi-Arabia, there is a high frequency of comorbid hypothyroidism among rheumatoid arthritis (RA patients), which suggests a high prevalence of Hashimoto's thyroiditis or other auto-immune thyroid dysfunctions with RA patients (Mosli and Attar, 2014), while the study conducted in Libya (2011) reported the prevalence of subclinical hypothyroidism was 2.3% and the prevalence of goiter was reported by many studies conducted in Egypt as 25.25%, and Bahrain (1.7%) (Ghawil et al, 2011). Thyroidectomy is an operation in which one or both lobes of the thyroid gland are removed (Docimo et al, 2013; Kandil et al, 2013).

The extent of thyroid surgery should be discussed by the patient and thyroid surgeon and can generally be classified as a partial thyroidectomy or a total thyroidectomy. Removal of part of the thyroid can be classified as an open

thyroid biopsy, a hemi-thyroidectomy or thyroid lobectomy, an isthmusectomy and finally, a total or near-total thyroidectomy (American Thyroid Association, 2018).

One of the major indications is a diagnosis of thyroid cancer, a large mass in the thyroid gland, difficulties with breathing related to thyroid mass, difficulties with swallowing and hyperthyroidism (Goyal, 2018). Thyroidectomy has been considered the primary initial surgical treatment option that based on patient's history, the results of a physical examination and tests. The most common tests to determine whether a thyroidectomy is necessary include a fine needle aspiration biopsy, thyroid scan, ultrasound, X-rays and/or CT scan, and assessment of thyroid hormone levels (Karamanakos et al, 2010; Weiss et al, 2015, Tufano et al, 2017).

Many complications may occur due to the surgical procedure itself, or the secondary metabolic disturbances. Frequently seen complications include postoperative bleeding, infection, and parathyroid deficit. Complications that occur less frequently are thyroid storm, and recurrent laryngeal nerve injury (Hassan-Smith et al, 2011). Complications following surgical removal of the thyroid gland can often be life-threatening. The consequences of thyroid surgery require patients to understand the post-operative follow up and compliance (Hassan et al, 2012; Dhillon et al, 2017). Each patients must be equipped by enough knowledge regarding post thyroidectomy management, such knowledge are provided by the health team specially nurse (Oxford University Hospital,2018).

Nurses play an important role in patient's education either preoperative or post-operative. They must be alert to post-anesthetic priorities, carefully monitoring the patient's cardiopulmonary status,

neurological status, comfort level, surgical wound condition, monitor the patient's level of consciousness, vital signs, pulse oximetry, assess the patient's pain level, and metabolic state. Any surgical procedure involves risks. Thyroid surgery can cause potentially fatal complications during the early post-operative phase. It is essential that nurses have the knowledge and skills to detect early signs and symptoms of potential complications and take appropriate action. Early detection and rapid response are key to maintaining patient safety and minimizing harm (Soria-Aledo et al, 2008; Furtado, 2011; Yang et al, 2014).

Significance of the study

About 200 to 800 million people in the world have some form of thyroid disease. In Egypt; reviewing the medical records and statistical data of the general surgical departments revealed that there is a continuous increase in percentage of patients who were admitted for thyroidectomy in relation to general surgical patients. During the last five years from 2010 to 2015, a total of 681 patients had total thyroidectomy according the statistical analysis and medical records of the surgery department of Mansoura University Hospital which resemble 30.6% of the total thyroidectomy surgeries during this period.

Aims of the study:

The aim of this study is to examine the effects of health teaching handouts on patients outcome who undergoing thyroidectomy in General Surgical Departments At Mansoura University Hospitals.

Research questions:

The first question: what is the effects of health teaching handouts on patients outcome who undergoing thyroidectomy in General Surgical

Departments at Mansoura University Hospitals?

The second question: what is the nurse role for thyroidectomy patients?

Operational definitions

Health Teaching Handouts

Health Teaching Handouts is a written document contains information and instructions to be followed by patient pre and post-operative thyroidectomy.

Patient's Outcome

It is the possible results of using the health teaching handout that contain information and instructions to be followed by thyroidectomy patient pre and postoperatively.

II. Materials & Method

Materials:

Research design:

A quasi experimental research design was used in this study.

Subjects:

A Purposive sample was used to select the study subjects as they consisted of forty two patients admitted to the General Surgical Departments at Mansoura University from the first of May 2017 till the end of August 2017 for the purpose of total thyroidectomy surgery and include patient scheduled for total thyroidectomy and their age between 20 to 60 years old and they have no hindering factors to communicate with psychiatric disorders, and patients with other health diseases as coronary artery disease and hepatic diseases.

Sample Size

The study includes forty-two patients who undergo thyroidectomy. They were selected based on inclusion and exclusion criteria and according to Epi info sample size estimation program using the following parameters:

Total population: 50 patients (during the last 3 months pre the study).

Expected frequency: 50%

Margin of error: 10%

Confidence co. efficient: 90%

Minimum sample size: 42 patients

Setting:

This study was conducted in the General Surgical Departments at Mansoura University. They constituted of 6 units(6,7,8)units located in the second floor and are for male patients.(9,10,15)units located in the third and are for female patient, and the capacity of each unit from (24-30) bed and providing surgical interventions for patients affiliated to Mansoura city and other near cities

Data Collection Tool:

Assessment questionnaire sheet was developed by the researcher after reviewing of up to date literature (Hassan et al. (2012) it consists of 3 parts:

Part I: Demographic questionnaire: Demographic data that include sex, age, education level, occupation and marital status.

Part II: Medical checklist including: Present history including diagnosis and laboratories, past history and family history of comorbid and genetic diseases.

Part III: The third part is a knowledge questionnaire to evaluate the patient's knowledge of discharge care including medication, method of drug administration, lifestyle modifications and proper thyroid nutrition.

Knowledge about medications type and methods of administration

Knowledge about the use of prescribed a narcotic pain medicine.

Proper nutrition: drinking more liquids, eating less goiterogenic foods,

Eating high-fiber foods, avoid eating fast foods, canned foods, salt and smoking.

Life style modifications: Knowing that physical activity helps the mind as well as the body. Avoid smoking and alcohol use. Avoid doing any strenuous activities, such as heavy lifting, jogging, or swimming for the first few weeks. After 1 month, exercising for 30 min. per day.

Scoring system

The knowledge assessment tool was composed of 5 domains that contain a total of 26 questions. The first domain assesses patients' knowledge regarding immediate postoperative care; it contains 6 questions, the second domain is related to patient's knowledge regarding follow-up care and covered by 3 questions. The third domain related to activity of daily living and it contains 3 questions. The fourth domain medication use and contains two questions. Finally, the fifth domain related to lifestyle pattern and contains 12 questions. Each patient asked to answer the 26 questions then a score of (1) given to the correct answer where a score of (0) given for the incorrect/ don't know answers. Levels of knowledge among the patients are divided into three levels; poor, fair, and good based on quartiles classifications according to the following;

25th quartile to less than 50th quartile indicates poor knowledge.

50th quartile to less than 75th quartile indicates fair knowledge.

75th quartile and more indicates good knowledge.

The Preparatory Phase:

After extensive review of literature, the instruments mentioned above were carefully elected. Preparatory phase lasted three months from May 2017 till the end of August 2017.

Development of Study Tools Validity:

Tools used in the study were developed by the researcher after reviewing of the current local and international related literatures using books, articles and scientific magazines. This helped to be acquainted with the problem, and guided in the process of tools' designing. Tools were reviewed by five jury from experts tested the content validity. According to expert's suggestions the tools were modified.

Health Teaching Handouts Development Phase

Health teaching handout was developed by the researcher after reviewing the recent literature. It was developed in Arabic language and according to level of understanding of the patients. Pictures and graphs were used for more clarification and to be ready to be understood by illiterate patients.

Handout content was outlined and written to cover the following SMART objectives:

General objectives:

Patients who use the health teaching handout will have full information they need regarding pre and post-operative care related to thyroidectomy.

Specific objectives:

- At the end of using this handout the patients will be able to:
- Define thyroidectomy.
- Illustrate follow-up schedule for thyroidectomy.
- Discuss pre-operative care for thyroidectomy.
- Discuss post-operative care for thyroidectomy.
- List thyroidectomy complications.
- Demonstrate the interventions required to deals with each complication.

- Discuss the preventive measures to minimize post-operative complications.
- Identify community resources and referral system.

The Pilot Study:

Pilot study carried out at general surgical department at Mansoura University Hospital on 10% of the sample size (5 patients) to test the applicability & relevance of the research tools & the clarity of the designed questionnaire and the required modification were made. The pilot sample excluded from the study.

Field of Study:

- Data were collected using a sample from general surgical department at Mansoura University Hospital to conduct the current study.
- The researcher obtained the written approval from research ethics committee of the Nursing Faculty of Mansoura University and from the director of general surgical department at Mansoura University Hospital.
- The study carried out in a period of three months period beginning on May 2017 & finished on August 2017 to gather the data required for assessment of patients' knowledge pre and after interview guided by the handout.
- Every patient handled an Arabic handout and interviewed individually every day for 3 consecutive days for half an hour to fill up the questionnaire and to assess their knowledge.
- The researcher introduced herself to patients who are selected according to inclusion and exclusion criteria, took written consent of them to be included

within the study after clarification of study aim.

- During the interview, the researcher read every item of the data collection sheet & handout clarified its meaning to the patients, the patients were permitted to ask for any interpretation, elaboration or explanation.
- Researcher collects data regarding general characteristics, and personal data and history of thyroid problem.
- The researcher informing each patient if they have any questions calls the researcher telephone to answer them about.
- The collected data are coded then stored.
- The results were then assessed and analyzed.

Administrative Design:

An official approval letter to conduct the study taken from the dean of nursing faculty and the director of general surgical department at Mansoura University Hospital in Mansoura city.

The researcher introduced herself to the patients and the study aim clarified before their participation to get their approval & cooperation as written consent.

Statistical Design:

After data collection, the data were coded and transferred into a specially designed format so as to be suitable for computer feeding. Following data entry, checking and verification process were carried out to avoid errors during data entry.

All statistical analyses were performed using SPSS for windows version 20.0 (SPSS, Chicago, IL). All data were categorical data and were expressed in number and percentage. Descriptive statistics as frequency,

distribution, mean, and standard deviation were used to describe different characteristics. Pearson's chi-squared and Fisher Exact test were used for testing relationships between categorical variables. Statistical significance for this study was at p level ≤ 0.05 based on the test result.

Human right and ethical considerations:

Prior to the study, oral consent was obtained from each participant enrolment into the study, after clarification of the nature and the purpose of the study.

The investigator emphasized participation is voluntary and confidential.

Anonymity, privacy, safety and confidentiality for personal data were absolutely assured throughout the whole study.

Each participant has the right to withdraw from the study at any time without any explanation.

Limitation of the study

There is no limitation faced by the researcher except time constrain since some patients need extra time to collect data.

III. Results

Table (1): This table showed that the studied sample of patients regarding their demographic characteristics. Slightly less than half (45.2%) of the patients aged 40 to less than 50 years old. Around two third (61.9%) of them were female. Regarding level of education around two fifth (38.1%) illiterate compared to the minority (9.5%) of them were university educated. The majority (83.3%) of them were married. Finally, the table shows that slightly less than two third (61.9%) of the studied patients were not work.

Table (1) Distribution of the studied sample of patients according to their demographic characteristics

Demographic characteristics	Frequency n(42)	Percent
Age (Years)		
30 to less than 40	6	14.3
40 to less than 50	19	45.2
50 to less than 60	12	28.6
60 years old	5	11.9
Sex		
Male	16	38.1
Female	26	61.9
Level of Education		
Illiterate	16	38.1
Secondary level	22	52.4
University	4	9.5
Marital status		
Single	3	7.1
Married	35	83.3
Widow	4	9.5
Occupation		
Working	16	38.1
Not work	26	61.9

Figure (1) showed the distribution of the studied sample of patients according to their health complains. More than half (52.4%) of them reported that they have a health complain. All of those who have a health complain reported that they have tachycardia and increased appetite (100% for both). Regarding respiratory problems slightly less than

three quarters of the studied sample of patients reported that they have shallow and difficult breathing (72.7% and 68.2% respectively). In relation to musculoskeletal system problems; the studied sample of patients reported that they suffering from fatigability (68.3%). Finally, the figure shows that around two fifth (40.9%) of the studied sample of patients have weight gain.

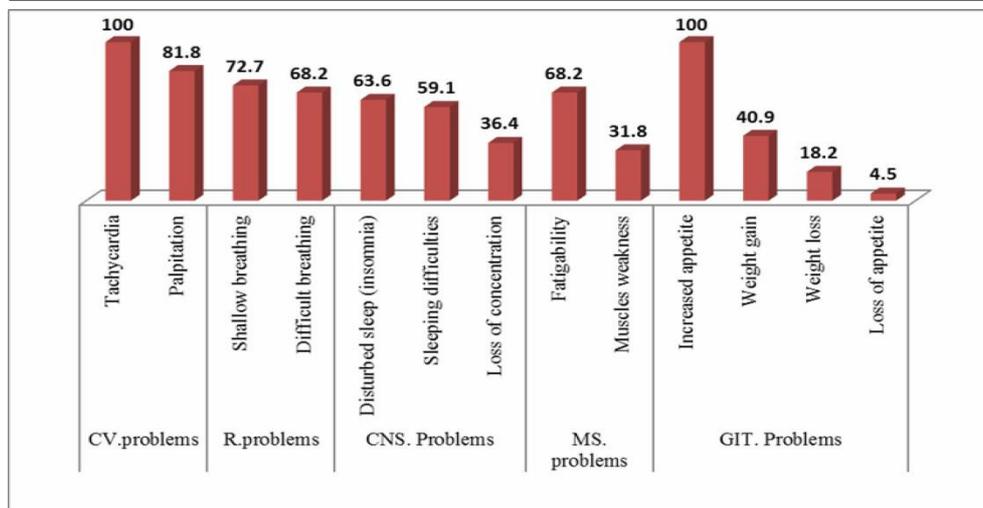


Figure (1) Distribution Of The studied sample of patients According To Their Health Complains

Table (2) portrayed the distribution of the studied sample of patients according to their knowledge about thyroidectomy care pre using of the health teaching handouts where the majority (88%) of them have poor knowledge.

Table (2) Distribution Of The studied sample of patients According To Their Knowledge about Thyroidectomy Care Pre Using of the Health Teaching Handouts

Patient's knowledge pre using of the health teaching handouts on thyroidectomy care	Frequency n(42)	Percent
Poor	37	88.1
Fair	3	7.1
Good	2	4.8

Table (3) and Portrayed the distribution of the studied sample of patients according to their knowledge about thyroidectomy care post using of the health teaching handouts where the more than half (52.4%) of them have fair knowledge. Around two fifth (40.5%) of them have good knowledge compared to the minority (7.1%) who have poor knowledge.

Table (3) Distribution Of The studied sample of patients According To Their Knowledge about Thyroidectomy Care Post Using of the Health Teaching Handouts

Patient's knowledge post using of the health teaching handouts on thyroidectomy care	Frequency n(42)	Percent
Poor	3	7.1
Fair	22	52.4
Good	17	40.5

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Table (4) Showed that there is a highly significant relation between patient's knowledge pre and post using of the health teaching handouts on immediate post thyroidectomy care, where P value (0.048).

Table (4) The relation between the studied sample of patients knowledge pre and post using of the health teaching handouts on immediate post thyroidectomy care

Patient's knowledge pre using of the health teaching handouts	Patient's knowledge post using of the health teaching handouts on immediate post thyroidectomy care								Test of significance	
	Poor n(8)		Fair n(13)		Good n(21)		Total n(42)		FET	P value
	No	%	No	%	No	%	No	%		
Knowledge on immediate post thyroidectomy care										
Poor	8	100.0%	1	100.0%	16	76.2%	37	88.1%	5.676	0.048*
Fair	0	0.0%	0	0.0%	3	14.3%	3	7.1%		
Good	0	0.0%	0	0.0%	2	9.5%	2	4.8%		

FET: Fisher exact test P: P value of test of significance * Significant P value at ≤ 0.05

Table (5) Showed that there is no significant relation between patient's knowledge pre and post using of the health teaching handouts on follow-up care post thyroidectomy care, where P value (0.367).

Table (5) The relation between the studied sample of patients knowledge pre and post using of the health teaching handouts on follow-up post thyroidectomy care

Patient's knowledge pre using of the health teaching handouts	Patient's knowledge post using of the health teaching handouts on follow-up care post thyroidectomy								Test of significance	
	Poor n(15)		Fair n(7)		Good n(20)		Total n(42)		FET	P value
	No	%	No	%	No	%	No	%		
Knowledge on follow-up care										
Poor	14	93.3%	5	71.4%	16	80.0%	35	83.3%	1.954	0.367
Fair	1	6.7%	2	28.6%	4	20.0%	7	16.7%		

FET: Fisher exact test P: P value of test of significance * Significant P value at ≤ 0.05

Table (6) Showed that there is no significant relation between patient's knowledge pre and post using of the health teaching handouts on activity of daily living care post thyroidectomy care, where P value (0.766).

Table (6) The relation between the studied sample of patients knowledge pre and post using of the health teaching handouts on activity of daily living post thyroidectomy care

Patient's knowledge pre using of the health teaching handouts	Patient's knowledge post using of the health teaching handouts on Activity of Daily Living post thyroidectomy								Test of significance	
	Poor n(9)		Fair n(13)		Good n(20)		Total n(42)		FET	P value
	No	%	No	%	No	%	No	%		
Knowledge on Activity of Daily Living post thyroidectomy										
Poor	9	100.0%	12	92.3%	18	90.0%	39	92.9%	1.833	0.766
Fair	0	0.0%	1	7.7%	1	5.0%	2	4.8%		
Good	0	0.0%	0	0.0%	1	5.0%	1	2.4%		

FET: Fisher exact test P: P value of test of significance * Significant P value at ≤0.05

Table (7) Showed that there is a significant relation between patient's knowledge pre and post using of the health teaching handouts on medication use post thyroidectomy care, where P value (0.036).

Table (7) The relation between the studied sample of patients knowledge pre and post using of the health teaching handouts on medication use post thyroidectomy care

Patient's knowledge pre using of the health teaching handouts	Patient's knowledge post using of the health teaching handouts on medication use post thyroidectomy								Test of significance	
	Poor n(7)		Fair n(15)		Good n(20)		Total n(42)		FET	P value
	No	%	No	%	No	%	No	%		
knowledge on medication use post thyroidectomy										
Poor	7	100.0%	14	93.3%	14	70.0%	35	83.3%	5.320	0.036*
Fair	0	0.0%	1	6.7%	4	20.0%	5	11.9%		
Good	0	0.0%	0	0.0%	2	10.0%	2	4.8%		

FET: Fisher exact test P: P value of test of significance * Significant P value at ≤0.05

Table (8) Showed that there is a highly significant relation between patient's total knowledge pre and post using of the health teaching handouts on thyroidectomy care, where P value (0.044).

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Table (8) The relation between the studied sample of patients total knowledge pre and post using of the health teaching handouts on thyroidectomy care

Variable	Patient's knowledge post using of the health teaching handouts on thyroidectomy care								Test of significance	
	Poor n(3)		Fair n(22)		Good n(17)		Total n(42)		FET	P value
	No	%	No	%	No	%	No	%		
Patient's total knowledge pre using of the health teaching handouts on thyroidectomy care										
Poor	3	100.0	21	95.5	13	76.5	37	88.1	4.296	0.044*
Fair	0	0.0	1	4.5	2	11.8	3	7.1		
Good	0	0.0	0	0.0	2	11.8	2	4.8		

FET: Fisher exact test P: P value of test of significance * Significant P value at ≤ 0.05

Table (9) Showed that there is a significant relation between patient's knowledge pre using of the health teaching handouts on thyroidectomy care and their education , where P value

(0.047), while there is no significant relation between patient's knowledge and other demographic characteristics (age, sex, marital status and occupation).

Table (9) The relation between the studied sample of patients knowledge pre using of the health teaching handouts on thyroidectomy care and their demographic characteristics

Demographic characteristics	Patient's knowledge pre using of the health teaching handouts on thyroidectomy care								Test of significance	
	Poor n(37)		Fair n(3)		Good n(2)		Total n(42)		FET	P value
	No	%	No	%	No	%	No	%		
Age (Years)										
30 to less than 40	6	16.2	0	0.0	0	0.0	6	14.3	2.415	0.530
40 to less than 50	16	43.2	2	66.7	1	50.0	19	45.2		
50 to less than 60	10	27.0	1	33.3	1	50.0	12	28.6		
60 years old	5	13.5	0	0.0	0	0.0	5	11.9		
Sex										
Male	14	37.8	1	33.3	1	50.0	16	38.1	0.576	0.548
Female	23	62.2	2	66.7	1	50.0	26	61.9		
Education										
Illiterate	16	43.2	0	0.0	0	0.0	16	38.1	8.698	0.047*
Secondary level	19	51.4	1	33.3	2	100.0	22	52.4		
University	2	5.4	2	66.7	0	0.0	4	9.5		
Marital status										
Single	3	8.1	0	0.0	0	0.0	3	7.1	1.591	0.688
Married	30	81.1	3	100.0	2	100.0	35	83.3		
Widow	4	10.8	0	0.0	0	0.0	4	9.5		
Occupation										
Working	13	35.1	3	100.0	0	0.0	16	38.1	5.238	0.548
Not work	24	64.9	0	0.0	2	100.0	26	61.9		

FET: Fisher exact test P: P value of test of significance * Significant P value at ≤ 0.05

Table (10) Showed that there is a highly significant relation between patient's knowledge post using of the health teaching handouts on thyroidectomy care and their education , where P value (< 0.001), while there is no significant relation between patient's knowledge and other demographic characteristics (age, sex, marital status and occupation).

Table (10) The relation between the studied sample of patients knowledge post using of the health teaching handouts on thyroidectomy care and their demographic characteristics

Demographic characteristics	Patient's knowledge post using of the health teaching handouts on thyroidectomy care								Test of significance	
	Poor n(3)		Fair n(22)		Good n(17)		Total n(42)		FET	P value
	No	%	No	%	No	%	No	%		
Age (Years)										
30 to less than 40	0	0.0	4	18.2	2	11.8	6	14.3	2.069	0.391
40 to less than 50	2	66.7	10	45.5	7	41.2	19	45.2		
50 to less than 60	1	33.3	5	22.7	6	35.3	12	28.6		
60 years old	0	0.0	3	13.6	2	11.8	5	11.9		
Sex										
Male	1	33.3	9	40.9	6	35.3	16	38.1	0.326	0.545
Female	2	66.7	13	59.1	11	64.7	26	61.9		
Education										
Illiterate	2	66.7	14	63.6	0	0.0	16	38.1	21.808	< 0.001*
Secondary level	1	33.3	8	36.4	13	76.5	22	52.4		
University	0	0.0	0	0.0	4	23.5	4	9.5		
Marital status										
Single	1	33.3	1	4.5	1	5.9	3	7.1	6.316	0.555
Married	2	66.7	17	77.3	16	94.1	35	83.3		
Widow	0	0.0	4	18.2	0	0.0	4	9.5		
Occupation										
Working	2	66.7	8	36.4	6	35.3	16	38.1	1.210	0.342
Not work	1	33.3	14	63.6	11	64.7	26	61.9		

FET: Fisher exact test P: P value of test of significance * Significant P value at ≤0.05

Table (11) Showed the distribution of the studied sample of patients according to the relation between their health complains and the duration of suffering of thyroid dysfunction. There is a positive significant relation between the duration of suffering of thyroid dysfunction and the presence of health complains, where P value (0.009). Furthermore, there is an observed significant relation between tachycardia, palpitation, shallow breathing,

difficult breathing, increased appetite and weight loss and the duration of suffering of thyroid dysfunction, where P value (0.014, 0.048, 0.015, 0.040, 0.014, and 0.001 respectively). Finally, there is no significant relation between weight gain, loss of appetite, fatigability, muscle weakness, insomnia, sleeping difficulties and loss of concentration and the duration of suffering of thyroid dysfunction.

Table (11) The relation between the studied sample of patients health complains and the duration of suffering of thyroid dysfunction

Health complains	Duration of suffering of thyroid dysfunction								Test of significance	
	Less than one year n(17)		1 to less than 2 years n(16)		Two years and more n(9)		Total n(42)		FET	P value
	No	%	No	%	No	%	No	%		
Presence of health complain										
Yes	5	29.4	10	62.5	7	77.8	22	52.4	6.362	0.009*
No	12	70.6	6	37.5	2	22.2	20	47.6		
Types of health problem#										
Cardiovascular problems										
Tachycardia	5	29.4	10	62.5	7	77.8	22	52.4	6.362	0.014*
Palpitation	4	23.5	9	56.2	5	55.6	18	42.9	4.344	0.048*
Respiratory problems										
Shallow breathing	2	11.8	9	56.2	5	55.6	16	38.1	8.637	0.015*
Difficult breathing	4	23.5	5	31.2	6	66.7	15	35.7	4.656	0.040*
Central nervous system problems										
Disturbed sleep (insomnia)	3	17.6	7	43.8	4	44.4	14	33.3	3.242	0.101
Sleeping difficulties	4	23.5	6	37.5	3	33.3	13	31.0	0.883	0.349
Loss of concentration										
Loss of concentration	3	17.6	3	18.8	2	22.2	8	19.0	0.304	0.502
Musculoskeletal problems										
Fatigability	4	23.5	6	37.5	5	55.6	15	35.7	2.633	0.073
Muscles weakness	1	5.9	5	31.2	1	11.1	7	16.7	3.603	0.342
Gastrointestinal problems										
Increased appetite	5	29.4	10	62.5	7	77.8	22	52.4	6.362	0.014*
Weight gain	2	11.8	4	25.0	3	33.3	9	21.4	1.953	0.149
Weight loss	0	0.0	0	0.0	4	44.4	4	9.5	10.741	0.001*
Loss of appetite	1	5.9	0	0.0	0	0.0	1	2.4	1.591	0.418

FET: Fisher exact test P: P value of test of significance * Significant P value at ≤ 0.05

Table (12) Portrayed that there is a significant relation between the studied women history of disturbed menses and the duration of suffering of thyroid dysfunction, where P value (0.029).

Table (12) The relation between the studied sample of female patients gynecological history and the duration of suffering of thyroid dysfunction

Gynecological history	Duration of suffering of thyroid dysfunction								Test of significance	
	Less than one year n(8)		1 to less than 2 years n(12)		Two years and more n(6)		Total n(26)			
	No	%	No	%	No	%	No	%	FET	P value
Disturbed menses										
Yes	2	25.0	7	58.3	5	83.3	14	53.8	4.580	0.029*
No	6	75.0	5	41.7	1	16.7	12	46.2		
Delay in getting pregnancy										
Yes	2	25.0	6	50.0	2	33.3	10	38.5	1.341	0.457
No	6	75.0	6	50.0	4	66.7	16	61.5		

FET: Fisher exact test

P: P value of test of significance

* Significant P value at ≤ 0.05

IV. Discussion

Diseases of thyroid gland are of great importance because they are a challenge for medical or surgical management. Total thyroidectomy is considered as the usual surgical procedure to treat thyroid diseases. The principal diseases of the thyroid gland are goiter, hypothyroidism, hyperthyroidism, thyroiditis, and neoplasms. The percentage of total thyroidectomies being performed for various thyroid diseases has increased significantly in recent years (Padur et al, 2016). Appropriate plan of care and strict patient's instruction are necessary postoperatively (Stöppler and Ferry, 2018). It is vital that healthcare professionals can identify the signs and symptoms of each disorder and begin timely interventions to prevent serious and life-threatening complications (Furtado, 2011). In this regards the current study aims to examine the effects of health teaching handouts on patient's

outcome who undergoing thyroidectomy in General Surgical Departments at Mansoura University Hospitals. The current study revealed that slightly less than two third of the studied cases were female (Table 1). This result goes in line with the National Women's Health Resource Center Team (2018) report where about 20 million Americans are affected by a thyroid disease or disorder. The higher number of cases reported among women than men with ratio 1:1.6. In fact, an estimated one in eight women will develop a thyroid disorder at some time in her life. Additionally, Walsh (2016) added that thyroid dysfunction occurs in up to 10% of women in the first year postpartum. Also Vanderpump (2011) declared that the greatest prevalence of thyroid disorders occur in pre-menopausal women, and the ratio of women to men is at least 4:1. So, from the researcher point of view it is highly important to consider sex difference in relation to thyroid and provide adequate health teaching for women

especially those who have a positive family history for thyroid disorders. It's important to help women to understand what the thyroid does in their body and what symptoms they may develop when it doesn't function properly.

In relation to the age of the studied patients in the current study it was observed that more than one tenth of the studied patients aged 60 years and more (Table 1). This finding was supported by Valenti and Ceresini (2018) as they stated that the prevalence of hyperthyroidism in the elderly is higher than in younger adults, with frequencies of about 3% in individuals older than 60 years of age.

Furthermore, the current study documented that there is an observed significant relation between tachycardia, palpitation, shallow breathing, difficult breathing, increased appetite and weight loss and the duration of suffering of thyroid dysfunction (Table 11). All of these complain known by the researcher as the signs and symptoms of hyperthyroidism. In fact, nearly all of the references which discuss these signs and symptoms approving that these are a classical complain of the patients and nearly all of these complains will subside postoperatively (American Thyroid association, 2018, Mayo Clinic Team, 2018, ROSDAHL and KOWALSKI, 2012). So, nurses must be aware by all of these complains and orient the patients the progress that will be gained postoperatively and the importance of compliance with medication and follow-up. In this regards, Atasayar and Demir (2017) reported that their research found that more than half of the patients experienced sleeping problems. One of the definite consequences of thyroid dysfunction is menstrual disturbance in this regards the current study reported

that there is a significant relation between the studied women history of disturbed menses and the duration of suffering of thyroid dysfunction (Table 12). This finding confirmed by a study done by Kakuno et al (2010) revealed that a round one third of the studied patient suffering from menstrual disturbance. These findings may be attributed to the fact that thyroid hormones play an important role in achieving and maintaining reproductive functions. Thyroid function influences the menstrual cycle and affects reproductive activity, fertility, and pregnancy outcomes (Güngör et al, 2010). For these reasons, investigation of thyroid function in women with abnormal menstrual activity should be performed.

In relation to patient's knowledge and the effect of the handout used in the current study, the majority of the study patients have poor knowledge about thyroidectomy care pre using of the health teaching handouts (Table 2). Whereas, more than half of the studied patient have fair knowledge about thyroidectomy care post using the health teaching handouts, and around two fifth of them have good knowledge compared to the minority who have poor knowledge (Table 3). These findings similar to the findings of the study done in Egypt (2012) by Hassan who study the impact of nursing educational program on patients' outcome among patients undergoing thyroidectomy at general surgical departments El-Manial university hospital and found that, total post knowledge mean score was higher than total pre knowledge mean score.

Additionally, Hassan (2012) reported that there was a statistical significant difference between total discharge compliance instructions and post discharge knowledge. Moreover, Abd-El Mohsen and Ahmed (2018) reported that teaching and applying neck stretching exercises significantly improved the neck condition of

patients in their study. In this regards, Hailemariam (2015) confirmed that inadequate management will result in suffering, increased risk of morbidity and mortality, longer stay in hospital and higher cost. These findings confirmed by the current study findings where there is a highly significant relation observed between patient's knowledge pre and post using of the health teaching handouts on thyroidectomy care (Table 4). So, the researcher highlights that the implementation of the educational program for patients undergoing thyroidectomies improved patient acquisition of knowledge, compliance to the prescribed instructions and will decrease the complications and length of hospital stay.

Furthermore, the current study reported a significant relation between patient's knowledge pre and post using of the health teaching handouts on thyroidectomy care and their education (Table, 9 and 10). This result was accepted since more than 60% of the studied patients were educated to some extent that simplifies the applicability of using the handouts (Table 1). In contrast, Temiz et al (2016) found that there was no statistically significant difference between level of education and the patient learning needs (PLNS) and subscales total mean scores. From the researcher point of view it may be attributed to that the general health awareness of population is generally low that shed the light on the importance of such education.

Additionally, the current study revealed that there is no significant relation between patient's knowledge and other demographic characteristics (age, sex, marital status and occupation) neither pre nor post teaching (Table, 9

and 10). The same finding was reported by Abd-El Mohsen and Ahmed (2018).

There is a positive significant relation between the duration of suffering of thyroid dysfunction and the presence of health complains (Table 11). The same findings were reported by Neto et al (2012) in their Study for the factors influencing thyroidectomy complications and found that the persistence of complication was directly associated with the length of exposure to thyroid dysfunction. From the researcher point of view these findings seems logic, since the longer exposure for dysfunction means longer exposure to hormonal disturbance and interruption of all body functions.

V. Conclusion

The current study concluded that:

The majority (88%) of the studied patients have poor knowledge about thyroidectomy care pre using health teaching handouts. Whereas, more than half (52.4%) of the studied patients have fair knowledge about thyroidectomy care post using of the health teaching handouts. Around two fifth (40.5%) of them have good knowledge compared to the minority (7.1%) who have poor knowledge.

Furthermore, there is a highly significant relation between patient's knowledge pre and post using health teaching handouts on thyroidectomy care, where Fisher Exact Test is 4.296 with P value (0.044), and a significant relation between patient's knowledge pre using health teaching handouts on thyroidectomy care and their education, where Fisher Exact Test is 8.698 with P value (0.047), while there is no significant relation between patient's knowledge and other demographic characteristics (age, sex, marital status and occupation).

Finally, there is a highly significant relation between patient's knowledge post

using health teaching handouts on thyroidectomy care and their education , where Fisher Exact Test is 21.808 with P value (< 0.001), while there is no significant relation between patient's knowledge and other demographic characteristics (age, sex, marital status and occupation).

VI. Recommendations

Based on the results of the present study, the following recommendations are suggested:

1. Simple handouts as booklets and brochures about thyroidectomy care should be developed and distributed at the surgical units.
2. Evidence-based thyroidectomy care guidelines should be integrated in medical surgical courses curriculum for nursing students.
3. Thyroid dysfunction management enhancing educational session should be applied at the general hospitals.

Further researches are proposed to

1. Evaluate the effect of complementary therapy protocol on the thyroid dysfunction and pregnancy outcomes.
2. The relationship between women with infertility and thyroidectomy.
3. The effect of applying screening program on level of thyroid dysfunction and patient satisfaction.

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