

## Quality of Life upon Patients Undergoing Radio-Therapy Post-Pulmonary Lobectomy Surgery at Baghdad City

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### **Abstract:**

**Background:** Various types of thoracic surgical procedures are performed to relieve disease conditions such as lung abscesses, lung cancer, cysts, and benign tumors.

**Objectives;** The main aim of the studies are, to assess the quality of life for patients undergoing Radio-therapy post- lung lobectomy operation. & to identify the relationship between age, gender and level of education with the quality of life for patients undergoing Radio-therapy post- lung resection operation.

**Methodology;** A descriptive design of study was carried out at three setting, for the period of 1st September until last of February 2015, the sample of study was limited to 30 patients of lung cancer post-lobectomy surgery on chemo therapy (rare sample). A questionnaire check list was constructed by the researcher & related review of literature, it was consisting of two parts, second part list of items related to patients quality of life domains.

**Results;** the majority of the sample were at age group of 58-67 years, male with primary level of education. the physical domain showed that most of the sample all ways suffering from lacking of physical activity, and sometimes suffer of headache with experiencing of difficulty in swallowing, associated with skin irritation and infection due to radiation. the psychological domain presents the sample feeling or complaining of depression.

**Conclusion;** patients with lung cancer post-lobectomy surgery on chemo therapy suffering from lacking of physical activity, and sometimes suffer of headache with experiencing of difficulty in swallowing, associated with skin irritation and infection due to radiation & complaining of depression with feeling of loneliness.

**Recommendation;** establish special chemotherapy center for lung-cancer patients to provide them with treatment, health educational instructions.

**Keyword:** Lobectomy surgery, Radio-therapy, Quality of Life.

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### I. Introduction

Lobectomy is the surgical removal of one lobe. This also may be done for lung cancer, tuberculosis, or another localized problem(1). Lobectomy When the pathology is limited to one area of a lung, a lobectomy (removal of a lobe of a lung) is performed, which is more common than pneumonectomy, may be carried out for bronchogenic carcinoma, giant emphysematous blebs or bullae, benign tumors, metastatic malignant tumors, bronchiectasis, and fungus infections(2). The surgeon makes a thoracotomy incision: its exact location depends on the lobe to be resected. When the pleural space is entered, the involved lung collapses and the lobar vessels and the bronchus are ligated and divided. After the lobe is removed, the remaining lobes of the lung are reexpanded, Usually two chest catheters are inserted for drainage. The upper tube is for air removal; the lower one is for fluid(3.8). drainage. Sometimes, only one catheter is needed. The chest tube is connected to a chest drainage apparatus for several days(4). Lung cancer is a major public health concern worldwide. In Scotland, after non-melanoma skin cancer, lung cancer is the second most commonly diagnosed cancer in men. It is the third most commonly diagnosed cancer in women after non-melanoma skin cancer and breast cancer. In 2011, 2,591 men and 2,478 women were diagnosed with lung cancer in Scotland every year. Survival is generally poor with less than 9% of patients remaining alive at five years after diagnosis(5). Lung cancer is the most common cause of death from cancer in both men and women. Stage IV non-small cell lung cancer (NSCLC) is widespread when it is diagnosed. Because these cancers have spread to distant sites, they are very hard to cure.

**Types of lung surgery:** Different operations can be used to treat (and possibly cure) non-small cell lung cancer. These operations require general anesthesia and are usually done through a surgical incision between the ribs in the side of the chest (called a *thoracotomy*).

- **Pneumonectomy:** an entire lung is removed in this surgery.
- **Lobectomy:** an entire section (lobe) of a lung is removed in this surgery.
- **Segmentectomy or wedge resection:** part of a lobe is removed in this surgery.

Another type of operation, known as a **sleeve resection**, may be used to treat some cancers in large airways in the lungs.

With any of these operations, nearby lymph nodes are also removed to look for possible spread of the cancer(6). If cancer continues to grow during initial treatment such as radiation therapy, chemotherapy (chemo) may be tried. If a cancer continues to grow during chemo as the first treatment, second line treatment most often consists of a single chemo drug such as docetaxel or pemetrexed, the targeted therapy erlotinib (Tarceva), or chemo plus a targeted drug like ramucirumab (Cyramza). If the cancer is the squamous cell subtype, immunotherapy might be an option. If a targeted drug was the first treatment and is no longer working, another targeted drug or combination chemo might be tried.(16)

**Objective:**

1. To assess the quality Of life for patients undergoing Radio-therapy post- lung lobectomy operation.
2. To identify the relationship between age, gender and level of education with the quality Of life for patients undergoing Radio-therapy post- lung resection operation.

**II. Methodology**

Descriptive design of study was carried out to present the quality Of life for patients undergoing Radio-therapy post- lung loboectomy operation .The period of conducted study was ranged from of 1<sup>st</sup> September 2014 until 1<sup>st</sup> of February 2015, administrative arrangement & setting of the study; the requests for permission was obtained from Al- Amal national hospital for cancer management at Baghdad city to conduct the study.

**Sample of the study:** a purposive (non-probability) sample of (30) patients undergoing radiation therapy, They have been assigned for study according to the following criteria, sample undergoing radiation therapy ,must be post lung surgery .Respondents must have experienced at least sixth months after lung operation.

**Instrument of the stud:** In order to measure quality Of life for patients undergoing Radio-therapy post- lung operation, a well- designed and manageable questionnaire was constructed thorough literature review was conducted to guide the questionnaire construction process and ensure the inclusion of the questions that are relevant to the topic, this instrument consist of **three parts** namely; demographic, and quality Of life for patients undergoing Radio-therapy post- lung loboectomy operation.

**\* Part One** aimed to the demographical data and personal information include (age, gender, marital status, level of education, occupational status, income

**\*Part Two** was aimed to medical information about the patients include (radiation therapy, chemotherapy, past medical & surgical history for patients, past l history and past medical history for family ) .

**\*Part three:** this **part** includes paragraphs related to the quality of life and this **part** was divided into **six domains** which are including (86) items as revealed below:

**\*Physical Domain:** measured through (40) items.

**\* Psychological Domain:** measured through (18) items.

**\* Personal and social Domain:** measured through (12) items.

**\* Independent Domain:** measured through (11) items.

**\* Environmental Domain:** measured though (12) items.

**\* Spiritual and Religious Beliefs Domain:** measured through (5) items.

The questions in sex domains were scored as the follow:(1)for always, (2) sometimes ,& (3) never .

**Validity and reliability of the Questionnaire:** Constant validity determined for questionnaire through the use of panel experts who are (10) faculty members from the college of Nursing university of Baghdad & doctors in the felid the suggested modification were employed.

**Pilot study:** A pilot study was carried out for the period from October 16 , 2014 to October 30 , 1014 and conducted on 12 patients who were select randomly for the purpose of questionnaires reliability determination

**Reliability of the Questionnaire:** Internal consistency of the instrument was determined through the pilot study and computation of Alpha Correlation Coefficient (Cronbachs Alpha ) the result of reliability was ( R= 0.77) and such an estimation was statistically adequate which means that the questionnaire had adequate level of internal consistency and equivalence measured

**Data Collection:** The data collected with constructed questionnaire through an application of interviewing the respondent, it was taking about 10 -15 min for collection.

### III. Data Analysis & Descriptive Statistics

The statistical data analysis approach which includes the measurements of Inferential statistical data analysis approach was performed by application of the following T test, It was used to determine the difference between two mean analysis of variance (ANOVA) It was used to determine the significance of association between demographic characteristics and QOL for lung surgery.

### IV. Results of the study

**Table (4-1):** Demographical Characteristics of the Sample.

Variables	Frequency	Percent %
<b>Age(years)</b>		
38-47	2	6.7
48-57	7	23.3
58-67	11	36.7
68-77	8	26.7
78-87	2	6.7
Total	30	100.0
<b>Gender</b>		
Male	21	70.0
Female	9	30.0
Total	30	100.0
<b>Marital status</b>		
Single	2	6.7
Married	25	83.3
Widowed	3	10.0
Total	30	100.0
<b>Education level</b>		
No read and write	4	13.3
read and write	5	16.7
primary school graduate	7	23.3
intermediate school graduate	4	13.3
secondary school graduate	4	13.3
college and above	6	20.0
Total	30	100.0
<b>Occupation</b>		
Government officer	4	13.3
Retired	10	33.3
Free job	6	20.0
Unemployed	6	20.0
Housewife	4	13.3
Total	30	100.0

This table shows that distribution of age indicated that the majority 36.7% of age group were (58-67) years old with frequency 11 and percentage. The most of study sample ( 70%) were male with primary level of education ( 23.3%) , although most of them (83.3%) were married and ( 33.3%) were retired

**Table (4-2)** Distribution the rate of score of (physical, psychological, level of independence, social, environmental and spiritual) for sample

Variables	Frequency	Percent %	Cumulative Percent%
<b>Rate of physical score</b>			
Low	4	13.3	13.3
Moderate	26	86.7	100.0
Total	30	100.0	
<b>Rate of psychological score</b>			
Low	2	6.7	6.7
Moderate	16	53.3	60.0
High	12	40.0	100.0
Total	30	100.0	
<b>Rate of social score</b>			
low	4	13.3	13.3
Moderate	24	80.0	93.3
High	2	6.7	100.0
Total	30	100.0	
<b>Rate of level of independence score</b>			
Low	4	13.3	13.3
Moderate	24	80.0	93.3
High	2	6.7	100.0

<b>Total</b>	<b>30</b>	<b>100.0</b>	
<b>Rate of environmental score</b>			
<b>Moderate</b>	<b>29</b>	<b>96.7</b>	<b>96.7</b>
<b>High</b>	<b>1</b>	<b>3.3</b>	<b>100.0</b>
<b>Total</b>	<b>30</b>	<b>100.0</b>	
<b>Rate of spiritual score</b>			
<b>Moderate</b>	<b>22</b>	<b>73.3</b>	<b>73.3</b>
<b>High</b>	<b>8</b>	<b>26.7</b>	<b>100.0</b>
<b>Total</b>	<b>30</b>	<b>100.0</b>	

This table shows that low rate of score in level of independence, social score & high score to physical domain at moderate level.

**Table (4-3)** Mean of score for the items of the physical domain

Items	Always F	Sometime F	Never F	M.S	Severity
<b>Respiratory System</b>					
Suffer from infections of the tonsils, pharynx repeated	2	20	8	1.80	M
Suffer from recurrent chest Infections	4	12	14	1.33	L
Suffering from cough	8	18	4	2	M
Suffer frequent sputum	6	18	6	1.86	M
Experiencing difficulty in Breathing	12	13	5	1.67	M
<b>Nervous System</b>					
Suffer from a lack of physical activity	10	6	4	1.53	M
Suffering from mental Mixing	2	14	14	1.60	M
Suffer from numbness parties upper and lower	4	12	14	1.66	M
Suffering from a muscle Spasm	4	12	14	1.66	M
Suffer from chills	1	8	21	1.33	L
Suffer from headaches	2	20	8	1.80	M
Suffer from lack of ability to concentrate	2	14	14	1.60	M
<b>Gastrointestinal system</b>					
Suffer from gum thickening	2	6	22	1.33	L
Suffering from abdominal Pain	4	10	16	1.60	M
Suffer from burn in the Stomach	4	10	16	1.60	M
Suffer from mouth ulcers	2	6	22	1.33	L
Suffer from nausea	6	10	14	1.73	M
Suffering from diarrhea		4	26	1.13	L
Suffer from a lack of weight	14	8	8	2.2	M
Suffer from loss of appetite	12	12	6	2.2	M
Suffering from vomiting	4	16	10	1.86	M
Experiencing difficulty in Swallowing	4	14	12	1.73	M
Suffer from the change in Taste	14	2	14	2	M
Suffer from constipation	11	11	8	2.1	M
Suffer from back pain, bone and joints	7	15	8	1.96	M
Easily suffer from bone Fractures	0	10	20	1.33	L
Suffer from muscle weakness (fatigue)	6	14	10	1.73	M
Suffer from delayed wound Healing	0	8	22	1.26	L
Suffer from skin rash	2	2	26	1.20	L
Suffer from scars	0	4	26	1.13	L
Suffer from itching in the site of radiation	0	10	20	1.33	L
Suffer from skin infection	0	4	26	1.13	L
<b>Cardiovascular System</b>					
Suffer from palpitation	10	10	10	2	M
Suffer from hypertension	4	12	14	1.66	M
Suffer from the pain center of the chest and spread to the	6	18	6	1.86	M

neck, shoulder and arm					
Suffer from fatigue without effort	10	14	6	2.13	M
Suffering from bleeding in the nose (epitasis)	0	12	18	1.40	M
Ease suffering from bleeding	2	10	18	1.46	M
Suffering from congestion of the face	0	12	18	1.40	M
Suffer from exposure to infections easily	4	16	10	1.80	M

This table shows that 1.80 mean of score of the sample at frequency 20 complain and suffer from infections of the tonsils, pharynx repeated, 2 mean of score with moderate suffering sometime from cough and sputum with 1.53 mean of score of the sample suffer from lack of physical activity with headache and 1.60 of sample complaining from abdominal pain with back pain and joints, more over the sample suffer from itching at site of radiation and epistasis.

**Table (4-4) Mean of score for the items of the Psychological domain**

Items	Always	Sometime	Never	M.S	Severity
Feel pessimistic about the Future	14	6	10	2.13	M
Feel that life is difficult	22	2	6	2.53	H
Feel a desire to cry	14	8	8	2.20	M
Feel remorse for your actions the previous	12	10	8	1.80	M
Feel sorry for yourself	16	10	4	2.40	M
You feel you have become a secret passion	22	4	4	2.60	H
Bank is very concerned for the future of your family	16	8	6	2.33	M
Feel the loss your important when the other	4	2	24	1.33	L
Feel you are useless to your Family	6	10	14	1.73	M
Feel the fear of disease	12	4	14	1.93	M
Disturbed for no reason	18	4	8	2.33	M
Suffers from disturbing dreams	6	6	18	1.60	M
Concerned about the length of treatment	12	10	8	2.13	M
Is fragmented and confused	9	10	11	1.93	M
Feel uncomfortable	7	14	9	1.93	M
Having difficulty adapting to the disease	6	18	6	1.86	M
Suffer from sleep disturbances	6	18	6	1.86	M
Is terrified of the disease	12	10	8	2.13	M

The result of study at this table presents that the sample feel that life is difficult at mean of score 1.35 and feeling a secret passion, which indicating that patient have depression.

**Table (4-5) Mean of score for the items of the Personal and social domain**

No.	Items	Always	Sometime	Never	M.S	Severity
1.	Experiencing fear of the Future	10	6	14	1.86	M
2.	Attention to yourself experiencing difficulty	12	8	10	2.06	M
3.	Suffer from the impact of the disease on your work or study	16	6	8	2.26	M
4.	Suffer the loss of financial Security	8	8	14	1.8	M
5.	Stop experiencing the fear of family support	12	2	16	1.86	M
6.	Suffer change of family Responsibilities	6	16	8	1.93	M
7.	Changing family relationships suffer	6	8	16	1.66	M
8.	Experiencing lack of social Activities	11	19	0	2.36	M
9.	Experience to rely on family Members	12	12	6	2.20	M
10.	Treatment of people suffering a difference to you about other	4	12	14	1.66	M
11.	Experiencing unity	14	6	10	2.13	M
12.	Suffers from the difficulty of social integration	2	16	12	1.66	M

This table stated that 2.26 mean of score always the sample suffer from impact of the disease on there work and 2.36 sometimes they get lack of the social activity more over feeling of unity(loneliness') 2.13 mean of score.

**Table (4-6)** Mean of score for the items of Environmental domain

No	Items	Always	Sometime	Never	S.M	Severity
1	Feeling safe in her/his life	8	8	14	1.80	M
2	Feeling she/he live in safety environment and secure	10	8	12	1.93	M
3	Feeling her/his house is comfortable	20	6	4	2.53	H
4	Feeling she / he like your house	28	2	0	2.93	H
5	Gating heath care	8	8	14	1.80	M
6	Having enough money to cover health expenses	8	16	6	2.06	M
7	Centers providing health and social care is found	4	18	8	1.86	M
8	Quality of health and social care is satisfying	8	16	6	2.13	M
9	Participation in and opportunities for recreation	2	20	8	1.80	M
10	Spent her/his break in home	16	8	6	2.33	M
11	Favor going to garden with family	12	6	12	2	M
12	Favor watching T.V to exist outside home	14	8	8	2.20	M

The table shows that the sample of the study, sometimes 20.06 having enough money to cover health expenses, there is no Centers providing health and social care is found, which presents a financial problem of the sample of the study.

**Table (4-7)** Association between the domains (physical, psychological , level of independence, social and spiritual ) with occupation.

No	Items	Always	Sometime	Never	S.M	Severity
1	Feeling safe in her/his life	8	8	14	1.80	M
2	Feeling she/he live in safety environment and secure	10	8	12	1.93	M
3	Feeling her/his house is comfortable	20	6	4	2.53	H
4	Feeling she / he like your house	28	2	0	2.93	H
5	Gating heath care	8	8	14	1.80	M
6	Having enough money to cover health expenses	8	16	6	2.06	M
7	Centers providing health and social care is found	4	18	8	1.86	M
8	Quality of health and social care is satisfying	8	16	6	2.13	M
9	Participation in and opportunities for recreation	2	20	8	1.80	M
10	Spent her/his break in home	16	8	6	2.33	M
11	Favor going to garden with family	12	6	12	2	M
12	Favor watching T.V to exist outside home	14	8	8	2.20	M

This table presenting significant association between occupation with Environment domain 0.001& Psychological domain, which indicating that the occupation of the sample highly affected by the environment.

## V. Discussion

The result of the study shows that distribution of age indicated that the majority 36.7% of age group were (58-67) years old with frequency 11 and percentage. The most of study sample ( 70%) were male with primary level of education ( 23.3%) , although most of them (83.3%) were married and ( 33.3%) were retired, the most of them ( 46.7%) were insufficient monthly income.Lung cancer is the number-one cancer killer among men and women in the United States, accounting for 31% of cancer deaths in men and 25% in women (American Cancer Society, 2002;Greenlee et al., 2001). For men, the incidence of lung cancer has remained relatively constant, but in women it continues to rise(5). Lung cancer affects primarily those in the sixth or seventh decade of life; less than 5% of patients are under the age of 40. In approximately70% of lung cancer patients, the disease has spread to regional lymphatics and other sites by the time of diagnosis. As result, the long-term survival rate for lung cancer patients is low.(7)

Evidence indicates that carcinoma tends to arise at sites of previous scarring (TB, fibrosis) in the lung. More than 85% of lung cancers are caused by the inhalation of carcinogenic chemicals, most commonly cigarette smoke (8.9).

This table shows that 1.80 mean of score of the sample at frequency 20 complain and suffer from infections of the tonsils, pharynx repeated, 2 mean of score with moderate suffering sometime from cough and sputum with 1.53 mean of score of the sample suffer from lack of physical activity with headache and 1.60 of sample complaining from abdominal pain with back pain and joints , more over the sample suffer from itching at site of radiation and epistaxis.

Complementary methods refer to treatments that are used along with your regular medical care. Alternative treatments are used instead of a doctor’s medical treatment. Although some of these methods might

be helpful in relieving symptoms or helping you feel better, many have not been proven to work. Some might even be danger(6).

Because large shoulder girdle muscles are transected during a thoracotomy, the arm and shoulder must be mobilized by full range of motion of the shoulder. As soon as physiologically possible, usually within 8 to 12 hours, the patient is helped to get out of bed. Although this may be painful initially, the earlier the patient moves, the sooner the pain will subside. In addition to getting out of bed, the patient begins arm and shoulder exercises to restore movement and prevent painful stiffening of the affected arm and Shoulder(7)

With any of these operations, nearby lymph nodes are also removed to look for possible spread of the cancer. These operations require general anesthesia (where you are in a deep sleep) and are usually done through a surgical incision between the ribs in the side of the chest (called a thoracotomy)(8,13).

The type of operation your doctor recommends depends on the size and location of the tumor and on how well your lungs are functioning. Doctors often prefer to do a more extensive operation (for example, a lobectomy instead of a segmentectomy) if a person's lungs are healthy enough, as it may provide a better chance to cure the cancer(5,6). The result of study at this table presents that the sample feel that life is difficult at mean of score 1.35 and feeling a secret passion, which indicating that patient have depression(table 4). This table stated that 2.26 mean of score always the sample suffer from impact of the disease on there work and 2.36 sometimes they get lack of the social activity more over feeling of loneliness 2.13 mean of score. From the 1960s, the rates of lung adenocarcinoma started to rise relative to other types of lung cancer. This is partly due to the introduction of filter cigarettes. The use of filters removes larger particles from tobacco smoke, thus reducing deposition in larger airways. However, the smoker has to inhale more deeply to receive the same amount of nicotine, increasing particle deposition in small airways where adenocarcinoma tends to arise(8).

## VI. Conclusions

- 1) The physical domain shows the most of the sample all way suffering from lacking of physical activity, and sometimes suffer of headache with experiencing of difficulty in swallowing, associated with skin irritation and infection due to radiation.
- 2) The psychological domain presents the sample feeling or complaining of depression.
- 3) Social domain presents the sample suffering of difficulty in there work with loneliness feeling.
- 4) Environmental domain shows there is rarely or not available centers caring or providing care for lung cancer patients post-surgery.
- 5) There is a relationship between age and sample suffering during physical domain, also with psychological and independency.
- 6) There were moderate relationship between sample suffering through physical domain and gender.

## VII. Recommendation

- 1) Establish special chemotherapy center for lung-cancer patients to provide them with health education related to there disease.
- 2) To make more studies in this field.

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