HEALTH RELATED QUALITY OF LIFE AND IT'S ASSOCIATION WITH MEDICATION ADHERENCE FOR PATIENTS WITH PULMONARY TUBERCULOSIS

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ABSTRACT

Background: Tuberculosis (TB) has been ranked to be one of the top ten causes of global mortality worldwide. The concept of health-related quality of life (HRQOL) might be of a multi-dimensional nature, it includes psychological, physical and social aspects. The effectiveness of medical interventions is influenced by adherence. ***Aim:*** This study aims to assess the correlation between health related quality of life (HRQOL) and medication adherence for Patients with pulmonary tuberculosis. ***Subjects and Method:*** A design based on descriptive correlational research was utilized. Convenient sample of pulmonary tuberculosis patients (56) at Almasaha Albahary at Port Said City and Chest Hospital at Damietta City. Three structured interviews were utilized to gather the required data**. *Data collection tools: Tool I:*** structured interviewing questionnaire, ***Tool II:*** Health Related Quality of life for patients with chronic illness, ***Tool III:*** Morisky Medication Adherence Scale (MMAS-8). ***Results:*** this study showed that 67.9% of the subjects were high psychological domain of health related quality of life and moreover, 75% of them were highly adhered to medications. ***Conclusion:*** it can conclude that three fifth of the studied patients had high QOL and three quarters of the patients had high adherence to medication. This study showed that there was statistically positive correlation between HRQOL domains (Physical, psychological, social) of HRQOL and drug adherence. ***Recommendation:*** the study recommended the event of program for patients with TB to enhance the patients' knowledge, care management and modify their wrong beliefs associated with TB.

Keywords: Health related quality of life, Medication adherence, Tuberculosis.

INTRODUCTION

Tuberculosis became a global crucial public health issue; it is considered a significant public health issue worldwide and a serious cause for mortality and morbidity. Although there is a major development in diagnosis and therapy, as thanks to such development approximately 10 million incident cases were reported, however, it has been estimated that TB caused 1.6 million deaths worldwide. Further, latently, nearly quarter of the world's humans is infected with tuberculosis (Hosseini, Shakerimoghaddam, Ghazalibina, Khaledi, 2020). Globally, great portions of patients die due to TB infection despite good control programs in a lot of countries. WHO estimated that up to 10.0 million people developed TB disease in 2018, and up to 1.2 million mortality from TB. (Hawrot, 2019).

The definition of the health-related quality of life concept is mainly related to the definition of health, which is defined by the World Health Organization (WHO) as "a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity". The concept of Health-related quality of life might be of a multi-dimensional nature, as it involves social, physical and psychological domains. Every domain itself is multi-dimensional (for instance, it could include physical functioning, emotional distress and social interactions). Such domains, individually and collaboratively, assess the impact of health conditions and their treatment on the lifestyle as well as the patient's understanding of health (Darvishpoor & Masjedi, 2015).

The evaluation of Health-related quality of life for Patients with pulmonary tuberculosis leads to integrated treatments' assessment that goes beyond clinical parameters. The concept of physical health involves aspects such as physical functioning, self-care, mobility and usual activities. Psychological health composes of aspects such as emotional distress, cognitive functioning, anxiety and depression. As for social health, the standard quantity of social interactions and contacts are the main focus (Jaber, Khan, Sulaiman, Ahmad & Anaam, 2016, Theron, et al., 2015).

The phenomenon of medication adherence might be complex, multi-dimensional and dynamic, which is based on the patients with pulmonary tuberculosis's behavior in terms of taking a medication at the prescribed interval, dosing regimen, and dose and on the quality of taking the medication (Hilka, et al., 2016). Medication adherence is defined as

"the processes by which patients take their medications as prescribed". It includes treatment initiation (first dose), prescribed dosing regimen implementation, therapy discontinuation, and persistence (Lam & Fresco, 2015).

Medication adherence is quite significant in achieving clinical goals; therefore, the reasons for non-adherence are multi-factorial. Even though the effectiveness of medical interventions is influenced by adherence, yet, efficient and effective treatment may require the identification of things that leads to non-adherence. Moreover, the main factors the affects medication adherence behavior are determined to consist of therapy, condition, health system and patient-related factors (Hilka, et al., 2016).

Medication adherences are often linked with the patient's self-awareness of health status (such as functioning on physical and social level and also general health). Considering the potential correlation between poor HRQOL and non-adherence, the development of medication adherence might be achieved through a quite better perception of HRQOL and the way of boosting HRQOL of patients diagnosed with specific diseases. Further, it is expected that a robust medical adherence coexists with an honest HRQOL and it goes both ways. Yet, the relation between HRQOL and drugs adherence has rarely been studied (Lam & Fresco, 2015).

Significance of the study:

Consumption can cause poor health related quality of life among patients with pulmonary tuberculosis during long periods of treatment and due to several agents' usage. Furthermore, treatment on irregular basis can cause drug resistance, thereby leading to untreated patients who can turn into a source of infection transmission that cause the infection to spread, or in some cases to even breakout. Health related quality of life reflects the traditional functions of life. Reduction of health related quality of life might lead to depression and non-adherence of drugs that can in turn cause lead to degraded medical condition. Thus, it's vital to assess the correlation between health related quality of life and medication adherence for patients with pulmonary tuberculosis.

There are quite rare studies on the relation between HRQOL and drugs adherence. Therefore, it's been recommended to witness the link between HRQOL and medication adherence through implementing a self-reported PRO measure (Louw, Mabaso & Peltzer, 2016).

Patients affected by tuberculosis and therefore the public will enjoy the study in various ways. The society is going to be empowered to acknowledge the symptoms and signs of TB early and seek assistance from the health facilities. They're going to even be educated on the rational use of medicine especially the importance of adherence to therapy, recognizing and responding to adverse effects. This might reduce the disease related stigma. Risk factors associated with TB are going to be identified, and then the public will be notified to reinforce prevention (Ahmad, et al., 2016).

AIM OF THE STUDY :

This study aims to assess the relation between health related quality of life (HRQOL) and medication adherence for pulmonary tuberculosis patients at Almasaha Albahary of Port Said City and Chest Hospital of Damietta City.

This will be achieved through the following research objectives:

- Assess health related quality of life scopes for patients with pulmonary TB.
- Assess behaviors related to medication adherence of patients with pulmonary TB.
- Assess the correlation between health related quality of life and drugs adherence for patients with pulmonary TB.

Research question

What is the relation between health related quality of life (HRQOL) and medication adherence for pulmonary tuberculosis patients at Almasaha Albahary of Port Said City and Chest Hospital of Damietta City?

SUBJECTS AND METHOD:

Subjects and method shall be implemented according to four main designs as next:

I. Technical design.

II. Operational design.

III. Administrative design.

IV. Statistical design.

I. Technical design:

The technical design revolves around research design, setting, subjects of the study and tools of data collection.

Research design:

The used design in this study is the descriptive research design.

Setting:

The study was conducted in context of Almasaha Albahary in Port Said City which includes 40 beds for males and females. Chest Hospital in Damietta City which includes 4 rooms with 16 beds and 2 isolated rooms (2 beds); and the outpatient clinics of both hospitals which include one room. Patients attend these clinics twice weekly for examination.

Subjects:

Convenient sample of adult patients with pulmonary tuberculosis and free from other diseases admitted to Almasaha Albahary in Port Said City and Chest Hospital in Damietta City in sex months. The total number of studied patients was 56 (40 male and 16 female).

Data collection Tools:

Throughout the study the data were collected based on the following tools:

Tool (I): structured interview:

The researcher developed this tool after reviewing the recent literature *(Aggarwal et al., 2013, Atif et al., 2014, Brown et al., 2015)* to evaluate the medical and family history of the patients. It consists of two parts**:**

Part (1): **Patient's demographic characteristics as:**

It revolves around subject's demographic characteristics of the with regard to age, level of education, sex, marital status, and occupation, residence and family income in seven questions..

Part (2): patients' medical and family history:

It included patients' past medical and family history related to TB, duration of present illness, effect of current illness on patients' Work following doctor instruction in taking medication regularly.

Tool (II): Health Related Quality of life for patients with chronic illness:

It was adopted from ***King and Hinds (2003)*** and includes (thirty nine questions**)** . it used to evaluate health related quality of life in following domains; physical (fourteen

questions), psychological (fifteen questions) and social domain (ten questions) for patients with pulmonary TB.

Scoring system for Health Related Quality of life domains:

Health Related Quality of life: Items were scored on a scale from 0 to 10 for responses "absent" to "always present", respectively for positive items, while they were reversed for negative items (14, 16,17,18,19, 20, 21, 29, 33, 34, and 39). For each domain of HRQOL, the scores of the items were summed-up and the total divided by the number of the items, giving a mean score for the domain. These scores were converted into a percent score based on cut point 60%. The patient was considered as high quality of life if the percent score was equal or more than 60%, and as low quality of life if less.

Tool (III): Morisky Medication Adherence Scale (MMAS-8):

It was adopted from ***Morisky (2008)*** to assess medication adherence behaviors in patients with pulmonary tuberculosis. MMAS is highly sensitive in terms of identifying low adherences and is considered simple regarding identifying and monitoring adherences. The scale was translated into Arabic and in total it ranges from (0) to (8).

Coding Instructions for the Morisky Medication Adherence Scale (8-Item):

It was noted that the response direction of the code was a positive one for item number 5, and the code is standardized for item number 8 (0-4), which creates a scale from low to high adherence. Moreover, when calculating a summated score for item number 8 it is divided by 4. The 5-point Likert scale is standardized by this procedure. The total scale has a range of 0 to 8.

➢ **Adherence Level** :

- Low adherence ($<$ 6)
- Medium adherence (6 $<$ 8)
- High adherence ($=$ 8)

II. Operational Design:

In order to complete the study, it had to go through various phases such as preparatory phase, reliability, content Validity, pilot study and fieldwork.

A- Preparatory phase:

Throughout this phase, the researcher inspected related recent, past, local, international literature that cover the different aspects of the matter using articles, books,

periodicals, magazines and internet explorer as PubMed, as well as Nursing Centre so as to assist the researcher to be more familiar with the matter and develop the tools for data collection.

B- Content Validity:

It had been ascertained by (9) expertise from nursing and medical staff members. Their opinions were elicited as regards clarity and comprehensiveness of questions.

Reliability:

Tools' reliability were tested through Cronbach's Alpha test, however, the Arabic version of health related quality of life for chronic illness patients questionnaire score was = 0.794 indicating that the Arabic version demonstrated excellent scale reliability. In addition, the tool of the Arabic version of Morisky Medication Adherence Scale was tested for reliability using Cronbach's Alpha test was and it scored = 0.838 indicating that the Arabic version demonstrated excellent scale reliability.

Pilot Study:

It was conducted to check the tools' accuracy and applicability, and to estimate the time required to fill in the tools. Health Related Quality of life assessment tool was applied on 10 patients with pulmonary tuberculosis. All pilot study participant patients has been excluded from the studied subjects.

C- Field Work:

This study's data collection was administered through six months, within the period from the start of November, 2018 and completed by April, 2019. The researcher attended at chest clinic from 9.00 a.m. to 1.00 p.m., twice weekly, and attended at the chest departments during morning and afternoon shifts. Patient consent for participation was obtained after illustrating the purpose of the study. Then the researcher started the interviewing process, which lasted for about 25-30 minutes. About 6- 8 subjects were interviewed per time by using the info collection tools. After completing the filling of the tool, the researcher reviewed every point within the tool ahead of the patient to make certain that no points are missed.

III. Administrative design:

An official letter containing the title and the aim of the study was sent from the Dean of the Faculty of Nursing - Port Said University to director of each setting to obtain their approval for data collection at the chest clinics and chest departments of the hospitals.

Ethical Consideration:

An approval had been obtained from hospital administrators or directors to conduct the study after illustrating the purpose and process of the study. Further, patient's consent of participation in the study had been obtained from patients after clearing out all about of the study. The researcher informed the study patients that they can withdraw from the study at any time they wish to do so without any problem. Moreover, the patients have been assured about the discretion regarding the collected information, and that they shall be only used for study purposes.

V.   Statistical design:

Epi-Info 6.04 computer software package was used to conduct data entry, while through utilizing the statistical Package for science (SPSS) version 11.0, statistical analysis was achieved. Descriptive statistics were used to present data within the sort of frequencies and percentages for qualitative variables, and means and standard deviations for quantitative variables. Further, no test might be applied in larger than 2x2 cross-tables, in case the arithmetic mean in 10% or more of the cells was but 5. Pearson correlation analysis was utilized for interrelationships evaluation among quantitative variables, as for ranked ones Spearman rank correlation were used. Statistical significance was considered at p-value <0.05 in order to evaluate the correlation between HRQOL scores as dependent factors on one hand, and medication adherence factors as independent factors on the other.

RESULTS:

Figure (1): represents that 67. 9% of studied patients were high psychological domain of health related quality of life while 42.9% of them were low physical domain of health related quality of life.

Figure (2): reveals that 60.7 % of patients were scored high health related quality of life domains.

Figure (3): illustrates that 75% of patients were high adherence to medications.

Table (1): Reveals that no statistically significant relation has been found that links patients' socio-demographic characteristics and their total quality of life except for marital status, and residence with p value 0.000 and 0.008 respectively

Table (2): Reveals that there were highly statistically significant relation between patients' family, medical history and their total quality of life regarding to return to work, following doctor instructions in taking medication regularly and changing work after had TB with p value 0.000 , 0.011 and 0.00 respectively.

Table (3): Shows that no statistically significant relation has been found that links patients' age, educational level, occupation, marital status, gender, income level and total treatment adherence, while there was statistically significant relation between residence and total treatment adherence with p value 0.026.

Table (4): Shows that there were highly statistically significant correlation between patients' family, medical history and their total medication adherence regarding returning to work, following doctor instructions in taking medication regularly and changing work after had TB with p value 0.004 , 0.000 and 0.005 respectively.

Table (5): Reveals that there were highly statistically positive correlations between the physical, psychological and social domains of health related quality of life and medication adherence in all of the rest of research (p < .01).
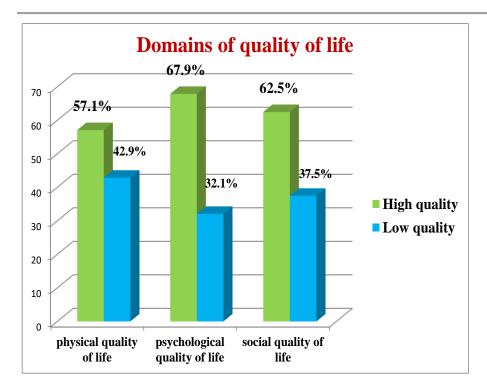
Figure (1): Distribution of the studied patients according to their domains of health related quality of life of the studied patients (n=56).

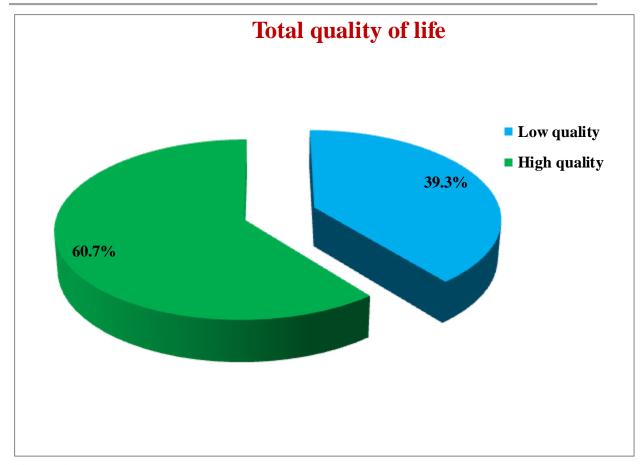**Figure (2):** Distribution of the studied patients according to their total health related quality of life (n=56).
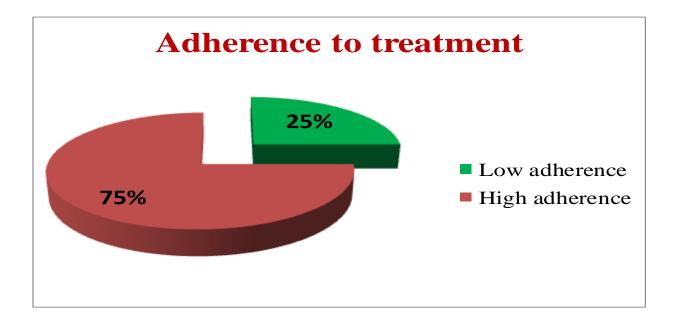
Figure (3): Distribution of the studied patients according to their total adherence to medication (n=56).

Table (1): Relation between patients' socio-demographic characteristics and their total health related quality of life:

Item	Low quality N=22		High quality N =34		X^2	p- value
	No.	%	No.	%		
Age / years						
20 – 30	7	31.8	4	11.8	5.54	.236
31 – 40	2	9.1	7	20.6		
41 – 50	7	31.8	8	23.5		
51 – 60	4	18.2	12	35.3		
>60	2	9.1	3	8.8		
Educational level						
Illiterate	4	18.2	5	14.7	3.30	.654
Read and write	1	4.5	4	11.8		
Primary	5	22.7	5	14.7		
Preparatory	7	31.8	8	23.5		
Secondary	3	13.7	4	11.8		
University	2	9.1	8	23.5		
Occupation						
Work	15	68.2	29	85.3	3.61	.164
Not work	7	31.8	5	14.7		
Marital status						
Single	7	31.8	0	0.0	18.26	.000*
Married	11	50.0	33	97.1		
Divorced	1	4.5	0	0.0		
Widowed	3	13.7	1	2.9		
Gender						
Male	18	81.8	22	64.7	1.91	.139
Female	4	18.2	12	35.3		
Residence						
Rural	12	54.5	6	17.6	8.33	.008*
Urban	10	45.5	28	82.4		
Income level						
Enough	2	9.1	1	2.9	.996	.318
Not enough	20	91.9	33	67.1		

X^2- Chi square test   * significant level at p < 0.05

Table (2): Relation between patients' family, medical history and their total quality of life:

Item	Low quality N = 22		High quality N = 34		X^2	p- value
	No.	%	No.	%		
Family history with TB						
Yes	8	36.4	4	11.8	1.43	.231
No	14	63.6	30	88.2		
Duration of disease/ years						
< 1	12	54.5	26	76.5	4.31	.116
1 < 3	10	45.5	7	20.6		
3 < 5	0	0.0	1	2.9		
Return to work						
Yes	4	18.2	27	79.4	20.26	.000*
No	18	81.8	7	20.6		
Changing work after had TB					6.66	.014*
Yes	7	31.8	2	5.9		
No	15	68.2	32	94.1		
Following doctor instructions in taking medication regularly					17.56	.000*
Yes	11	50.0	33	97.1		
No	11	50.0	1	2.9		

X^2- Chi square test   *significant level at $p < 0.05$

Table (3): Relation between patients' socio-demographic characteristics and their total medication adherence

Item	Low adherence N = 14		High adherence N = 42		X^2	p- value
	No.	**%**	**No.**	**%**		
Age / years						
20 – 30	2	14.3	9	21.4	4.043	.400
31 – 40	2	14.3	7	16.7		
41 – 50	6	42.8	9	21.4		
51 – 60	2	14.3	14	33.4		
>60	2	14.3	3	7.1		
Educational level						
Illiterate	2	14.3	7	16.7	1.35	.929
Read and write	1	7.1	4	9.5		
Primary	3	21.4	7	16.7		
Preparatory	5	35.7	10	23.8		
Secondary	1	7.1	6	14.3		
University	2	14.3	8	19		
Occupation						
Work	13	92.9	31	73.8	2.79	.247
Not work	1	7.1	11	26.2		
Marital status						
Single	2	14.3	5	11.9	1.83	.607
Married	10	71.4	34	81		
Divorced	0	0.0	1	2.4		
Widowed	2	14.3	2	4.8		
Gender						
Male	11	78.6	29	69	.467	.376
Female	3	21.4	13	31		
Residence						
Rural	8	57.2	10	23.8	5.34	.026*
Urban	6	42.8	32	76.2		
Income level						
Enough	1	7.1	2	4.8	.117	.732
Not enough	13	92.9	40	95.2		

X^2- Chi square test   *significant level at $p < 0.05$

Table (4): Relation between patients' family, medical history and their total medication adherence.

Item	Low adherence N = 14		High adherence N = 42		X^2	p-value
	No.	%	No.	%		
Family history with TB					.369	.544
Yes	5	35.7	6	14.2		
No	9	64.3	36	85.8		
Duration of disease/ years					.545	.762
< 1	9	64.3	29	69.0		
1 < 3	5	35.7	12	28.5		
3 < 5	0	0.0	1	2.5		
Return to work					8.69	.004*
Yes	3	21.4	28	66.6		
No	11	78.6	14	33.4		
Changing work after had TB					9.92	.005*
Yes	6	42.8	3	7.1		
No	8	57.2	39	92.9		
Following doctor instructions in taking medication regularly					27.71	.000*
Yes	4	28.5	40	95.2		
No	10	71.5	2	4.8		

X^2- Chi square test   *significant level at $p < 0.05$

Table (5): Correlation between patients' total medication adherence and total health related quality of life.

Quality of life	Total medication adherence	
	R	p- value
Physical domain	.667**	.000
Psychological domain	.574**	.000
Social domain	.575*	.000
Total quality of life	.718**	.000

r- Pearson test   **. Correlation is significant at the 0.01

DISCUSSION:

Mycobacterium tuberculosis (TB) may be a bacterial organism liable for 2 million deaths every annum widely. As long as it deploys via aerosol transmittable, it usually infects the lungs, but also affect lymph nodes, the bones (Pott's disease), lymph nodes, central system nervous, gastrointestinal tract, alimentary canal and skin, showing caseous necrosis and characteristic granulomatous inflammation. Signs and symptoms of infection often involve shortness of breath, cough, hemoptysis and muscle weakness, and a number of which our patient ridden from before his death. (Kodati, Tadepalli, Chandana, 2019).

The present study aim was to evaluate the association between health- related quality of life (HRQOL) and drugs adherence for pulmonary tuberculosis patients.

Regarding socio-demographic characteristics of the studied patients, the results of this study illustrated that more than one quarter of studied patients were at age category from 50 to but 60 years old, but one third of them were preparatory education, more than three quarters of them were working and married, but three quarters of them were male, more than two thirds of them were living in urban and therefore the majority of them had not enough income.

In related to medical and family history of the studied patients, all patients had not previous history of pulmonary tuberculosis and the minority of them had family history of TB. These findings come in line with Hayward et al., (2018) who reported that risk of progression to active TB disease is increased in those with conditions that impair immunity, such as diabetes mellitus (DM), human immunodeficiency virus (HIV) and chronic kidney disease (CKD). Also, this in agreement with Mukherjee et al., (2015) who stated that low vitamin D levels are associated with active TB, with sunlight exposure in sanatoria and direct administration of vitamin D commonly used as treatments prior to the advent of antibiotics. Today, evidence supporting a link between TB and vitamin D deficiency is accumulating, although the association is complex. There is evidence that a drop in serum vitamin D compromises the immune response and can lead to reactivation of LTBI. Vitamin D deficiency may also be a risk factor for pulmonary TB.

These results are inconsistent with Gounder et al., (2015) who demonstrated that history of the previous contact with TB patient was significantly associated with the disease and most of the cases had prior contact with an infected person. TB is an infectious disease and the more close and intense contact with a sufferer is, the greater the intensity of the organisms that can be inhaled with the subsequent manifestation of the clinical disease.

Also, this in agreement with Kirenga et al. (2015) who reported that the magnitude of TB risk factors in decreasing order was overcrowding, alcohol consumption, HIV infection, poverty, smoking, family history, close contact, and diabetes mellitus.

For adherence to medications among the studied patients, three quarters of them didn't forget taking TB medications, didn't stop from take medication without told doctor because feeling that condition go to pot , didn't forget taking medication of TB when traveling, didn't stop taking medication when feeling improved and TB in check , didn't feel trouble during decision with taking medication of TB and no times the patient faced problems in remembering to require medication of TB. This may be due to they found good progression with disease that enhance them to possess good medication adherence. They found less signs and symptoms with good medication adherence.

This results agreeing with Hilka et al. (2016) they stated that elevated the effect of adherence intervening can have a great effect on the health of the peoples than any improving in medical treatment. Both adherence and HRQOL are associated with the illness people. Any impact on medication adherence dictate by an impact on HRQOL and a relationship between them existed. In addition to, Bauer et al. (2015) they stated that at the starting of treatment, total scores on all HRQOL domains refer to major impairment in HRQOL. The results revealed that HRQOL recovered bigly by treatment time, improving in psychological domain was the best improving observed through the intensive stage of treatment. These results are inconsistent with Dujaili, Sulaiman, Hassali, Awaisu, Blebil, and Bredle, (2015) they found that Patients revealed that the amount of pills led to indigestion, vomiting and nausea. Many patients repine of fatigue, increased appetite and seamy after-taste lasting get to few days after took the pills. Participants mentioned that they were unable to kiss their partner. Health care providers mentioned that side effects included: loss of appetite, malaise, loss of appetite, rash and itching. The providers stated that when stopping the medications, many symptoms improve.

For relation between patients' socio-demographic characteristics and their total health related quality of life, we found that no statistical significantly relations between patients' socio-demographic characteristics and their total quality of life apart from legal status, and residence. This may be due to patients be married make them strong and encourage them to require medication. These results agreeing with Louw et al. (2016) who stated that age and gender had no prediction for positive changes on HRQOL through the period of treatment and non-effect of age and gender on HRQOL in tuberculosis patients after six month. According to Jaber, & Ibrahim, (2019) who found that the QOL scores for patients in rural

areas were less than those live in urban areas thanks to lower economic status, a coffee level of data , and inadequate level of nutrition. These results are inconsistent with Kirenga et al. (2015) who found that Age was found to be related to tuberculosis where those below thirty years were more susceptible this is often according to findings from other studies. A possible explanation is that they need a strong social interaction which exposes them to infected people.

As regard to relation between patients' family, medical history and their total quality of life , there were highly statistically significant relation between patients' family, medical history and their total quality of life regarding to return to work, following doctor instructions in taking medication regularly and changing work after had TB. These findings come in line with Malik, Nasir, and Hussain, (2018) who stated that patients with tuberculosis suffer from illness for more than 2 years had poor bodily health. Patients with tuberculosis had lowest HRQoL ensued patients undergoing initial stage of treatment. Moreover, Patients with tuberculosis take treatment for less than one month stated that poor HRQoL as compared to Patients with tuberculosis take treatments for long period of time. Tuberculosis patients take treatment for 4–6 months had best mental state while, tuberculosis patients take treatment for 7–9 months had best physical state. This result might due to reduce symptoms and positive effect of therapy on HRQoL of Tuberculosis patients.

These results are inconsistent with Krasniqi et al. (2017) who found that the former involves sex, age, education level, marital status, income, types of housing, working environment as well as lifestyle habits such as smoking and use of alcohol among others. These factors affect perceptions about life and feelings of self-worth. Comorbidities often have a passive effect in health thereby decreasing the quality of life of peoples.

Regarding relation between socio-demographic characterizations of patients and their total drug adherence, study revealed that no statistical significantly relation between educational level, patient's age, occupation, marital state, gender, income level and total drug adherence, while there was statistically significant relation between residence and total drug adherence. This may be due to people live in urban have , more knowledge, more medical services, more experience so that reflect on medication adherence. These results agreeing with Karimi, et al. (2017) who found that all age categories revealed that medium and good adherence to therapy without major difference. Employment status, level of education and marital status have a passive effect on adherence. Other attributes that had no statistically significant relationship were; HIV infection, previous TB infection,

malnutrition. In addition to Dujaili, et al., 2015, who stated that life in poor ventilation dwellings, overcrowding and being in direct contact with an infected people are the risk for acquiring infection of tuberculosis. Poor nutrition and suppression of immunity prepare cases to develop active disease.

These results are inconsistent with Tola (2015) who reported that economic barriers in access medical facilities increase the risk of non-adherence of medications. Insufficient of primary medical centers and measures of social protection for tuberculosis patients must be marked as priorities for strategies controlling disease to decrease the effect of barriers on drug adherence. According to Wolters Kluwer (2015) who found that spending more time travel to the medical center or higher travelling costs were risk of medication non-adherence.

For relation between patients' family, medical history and their total medication adherence, there were highly statistically significant relation between patients' family, medical history and their total medication adherence regarding to return to work, following doctor instructions in taking medication regularly and changing work after had TB. These results agreeing with Krasniqi et al. (2017) who stated that drug adherence is a phenomenon that influenced by several categories of sociocultural, medical and behavioral factors. Additionally, Jaber, et al. (2016) who stated that identity of illness was linked with delay so financial barriers was linked with decreased drug adherence.

These findings are inconsistent with Jaber & Ibrahim (2019) who reported that drug non-adherence was affectionate to poverty, an unaided work and social environment, HIV co-infection, stigma and feelings of hopelessness.

Regarding correlation between patients' total drug adherence and total health related quality of life, there were highly statistically positive correlations between domains (Physical, psychological, social) of HRQOL and drug adherence. This may be due to good medication adherence enhance HRQOL. The more cases take their medications and follow doctor's instructions, the more that reflect in HRQOL positively. These results agreeing with Hilka et al. (2016) who revealed that HRQOL and medication adherence were differentiated concepts that need to consideration and management of the patient. Tuberculosis has a passive effect on domains of HRQOL includes the psycho-social, physical, mental and financial domains. Drug adherence is important for succession treatment of the patient; and may be affected by the perception of patients on their HRQOL. In addition, Jaber et al.

(2016) reported that there was a link between HRQOL and drug adherence based on data which were collected.

These results are inconsistent with Theron et al. (2015) who evaluate psychological distress in patients with tuberculosis and found a major association between increase levels of psychological distress and drug non-adherence. While good drug adherence improve depression and anxiety. According to Agh (2015) who reported that there's a statistical significantly, but basically weak association between HRQOL and drug adherence. Finally, we found a positive relation between drug adherence through the first weeks of cure and good HRQOL in lower levels of depression and anxiety and overall HRQOL at 6 month treatment. So we found no relation between HRQOL at start of treatment and drug adherence.

CONCLUSION:

According to the findings of the current study, it can conclude that three fifth of the studied patients had high QOL and three quarters of the patients had high adherence to medication. There was statistically positive correlation between HRQOL domains (Physical, psychological, social) of HRQOL and drug adherence.

RECOMMENDATIONS:

The following recommendations based on result were:

1. Implementation of educational program to improve HRQOL for to patient with tuberculosis, Involved patients with tuberculosis in develop strategies to enhance medication adherence , Health education to patient with tuberculosis , especially at the start of treatment, with reinforcement at each visit using the language locally used.

2. Assessment of health related quality of life among patients on treatment of TB should be integrated as part of management. This will enable the service providers to holistically manage the patients with consequent better outcomes.

3. Adequate drug information should be given to patients concerning the side effects and measures to be taken to reduce their severity, especially gastrointestinal disturbances.

Further Research:-

1- A prospective cohort study must be carried to establish the association between health-related quality and time. This can form a basis for developing a protocol mentioned above since it can show the trend of the effects of therapy. The finding may enable healthcare providers to anticipate and intervene in a timely and effective manner.

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جودة الحياة الصحية و علاقتها بمدي الإلتزام العلاجي لمرضي الدرن الرئوي

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أستاذ مساعد التمريض الباطني والجراحي1ـ أستاذ مساعد التمريض الباطني والجراحي2ـ مدرس التمريض الباطني والجراحي3 ـ معيد التمريض الباطني والجراحي4

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الخلاصة

يُعد الدرن الرئوي او السل سبباً من أهم عشرة أسباب للوفاة في العالم. حيث ان ثُلث سكان العالم مصابون بالسل الكامن، أي أنهم حاملون للعدوى ببكتريا السل ولكنهم ليسوا مرضى بالسل ولا يُمكنهم نقل المرض. تقييم جودة الحياة الصحية يشمل عمل دراسة متكاملة عن العلاجات خارج الحدود السريرية مثل الصحة البدنية : تركز علي مدي قدرته علي الحركة والرعاية الذاتية في انشطته المعتادة؛ وتشمل الصحة النفسية: تركز علي حجم القلق و الاكتئاب و الادراك الانفعالى ؛ والصحة الاجتماعية ، التزام المريض بالعلاج امر حيوي جدا الوصول الي الاهداف المرجوة و بالتالي رفع جودة الحياة الصحية لمرضي السل بينما عدم التزام المريض بالعلاج يؤدي الي عواقب وخيمة علي الصحة كذلك جودة الحياة لدي المريض. **هدف البحث:** تقييم العلاقة بين جودة الحياة الصحية ومدى التزام مرضي الدرن الرئوي بالعلاج. **طرق وادوات البحث:** أجريت الدراسة الوصفية علي 56 مريض درن رئوى من المترددين علي العيادات الخارجية بمستشفى المصح البحري ببورسعيد و مستشفي الصدر بدمياط . تم تجميع البيانات عن طريق المقابلة الشخصية لكل مريض باستخدام ثلاث أدوات وهي استمارة مقابلة شخصية عن جودة الحياة الصحية ، استمارة تقييم جودة الحياة الصحية لمرضي الدرن الرئوي ، استمارة تقييم الالتزام العلاجي لمرضي الدرن الرئوي. **النتائج:** أظهرت هذه الدراسة أن 67.9٪ من الأشخاص كانوا من المجالات النفسية العالية لجودة الحياة المتعلقة بالصحة ، و 42.9٪ من المرضى الذين تمت دراستهم كانوا من المجالات البدنية المنخفضة لنوعية الحياة المتعلقة بالصحة ، علاوة على ذلك ، 75٪ منهم كانوا ملتزمون بشدة بالأدوية. **الاستنتاجات:** يمكن أن نستنتج أن ثلاثة اخماس من المرضى الذين شملتهم الدراسة لديهم جودة حياة صحية عالية وثلاثة أرباع المرضى لديهم التزام عال بالأدوية. أظهرت هذه الدراسة أن العلاقة بين المجالات (المادية والنفسية والاجتماعية) المتعلقة بجودة الحياة المرتبطة بالصحة والالتزام بالدواء كانت مباشرة إحصائياً. **التوصيات :** يمكن استنتاج أن معظم المرضى الذين شملتهم الدراسة يعانون من ضعف عام ، والخوف من الانبثاث ، وأدى المرض إلى وجود عبء على الأسرة ، وكان لدى الأقلية منهم تاريخ عائلي من مرض السل. أوصت الدراسة بتطوير برنامج تعليمي لمرضى السل لتحسين معرفة المرضى وإدارة الرعاية وتعديل معتقداتهم الخاطئة المتعلقة بالسل.

الكلمات المرشدة : الألتزام بالعلاج، ا الدرن الرئوي، جودة الحياة الصحية.