

## Knowledge and Attitude of Tuberculosis Patients and Their Family Caregivers about Tuberculosis in Minia Governorate

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### Abstract:

**Background:** Tuberculosis continues to pose serious public health problem threats, especially in developing countries. It is a common and often deadly infectious disease caused by mycobacteria, usually *Mycobacterium tuberculosis* in humans. Tuberculosis usually attacks the lungs but can also affect other parts of the body. Each year, approximately 2 million persons worldwide die of tuberculosis and 9 million become infected. **Aim of this study:** to assess knowledge and attitude of TB patients and their family caregivers about TB in Minia governorate. **Subject and Methods:** Cross sectional research design was utilized in the present study. This study was carried out in Minia governorate; three districts namely Beni-mazar, Minia and Mallawy that were selected randomly. The study sample included 125 patients' and 173 family caregivers. Two tools were used in this study. First tool: consists of three parts: Part I; included sociodemographic characteristics , Part II; included environmental assessment sheet. Part III; included Knowledge of patient and their families about Tuberculosis disease. Second tool: Likert scale used to assess attitude of patients and their families about tuberculosis. **Results:** This study illustrated that the age of TB patients and their family caregivers ranged between (18-60) years with the mean age ( $34.8 \pm 13.7$ ,  $38.8 \pm 13.9$ ), respectively. Concerning the educational level, it was found that the highest percentage in both groups were illiterate, it represents 43.2% in the TB patients and 43.9% in the family caregivers, respectively. Also, the present study showed that the majority of TB patient and their families had poor knowledge and negative attitude about TB. **Conclusion:** the findings of this study illustrated that more than half of patient and their families had poor knowledge about TB and more than three quarters of them had negative attitude especially in rural areas. **Recommendation:** there is a strong need for increasing patients and family caregiver's awareness about TB transmission and prevention.

**Key Words:** *Tuberculosis, prevention and family*

### Introduction:

Tuberculosis (TB) is "an airborne infectious disease caused by various strains of *mycobacteria*, usually *Mycobacterium tuberculosis* (M.TB) in human or *Mycobacterium bovis* in cattle or other animals. It most commonly affects the lungs, but can infect other parts of the body". It is the most common fatal infectious disease in the world: one-third of the world's population is currently infected and more than 1.5 million people die each year due to tuberculosis. (Konstantinos, 2010; Kyle & Carman, 2013).

It spreads through the air, when people who have the disease cough, sneeze, or spit; they propel TB germs, known as bacilli, into the air. A person needs only to inhale a small number of these to be infected. They can remain suspended in the air for several hours, depending on the environment. When a person breathes in M. TB, the bacteria can settle in the lungs and begin to grow. From there, they can move through the blood to other parts of the body. TB in the lungs can be infectious because the bacteria

are easily spreading to other people. TB in other parts of the body, such as the kidney or spine, is usually not infectious. (Sillah et al, 2007; CDC, 2009b).

Poor air quality and overcrowding within homes as a result of inadequate ventilation and the presence of mold and smoke contribute to poor respiratory health in general and have been implicated in the spread and/or outcome of tuberculosis (TB). (Wanyeki, et al., 2006)

Treatment requires the use of multiple drugs for several months. With appropriate antibiotic treatment, TB can be cured in most people. and usually combines several different antibiotic drugs that are given for at least 6 months, sometimes for as long as 12 months. However, many M. tuberculosis strains are resistant to one or more of the standard TB drugs, which complicates treatment greatly (Goodman & Lipman, 2008). TB is a preventable and curable disease, prompt diagnosis and treatment remain the most effective means of controlling the disease. (Roseanne, 2012)

Nurses are responsible for educating and supporting patients at home, through follow-up clinics, and, where appropriate, running telephone help lines to

detect medication side effects, and screening those who have been in close contact with infectious TB patients and perhaps running clinics for patients taking prophylactic TB treatment. Because of their frontline presence in all health-care facilities and their diversity of skills, nurses are the natural ally in the fight against TB. However, nurses in many countries lack adequate training in TB detection and management. (Alwan & Hornby, 2002).

## Subjects and Methods:

### Research design

Cross sectional research design was used in this study.

### Study sample:

After visiting the directorate of health and knowing the total number of TB patients (220) that were registered in the out patient clinics of chest hospitals in nine districts in Minia Governorate. By simple random sample three of them were chosen, then the researcher got their telephone numbers and their addresses from each health district, the total number of sample were 125 TB patients and 173 family caregivers. After that, the researcher contact with family in their home to complete the structured interview questionnaire sheet.

### Inclusion criteria:

All adult TB patients and their family caregivers who are present during home visits, and willing to participate in the study, aging 18 years and above were included.

### Exclusion criteria:

Children under 18 years, elderly above 60 years with severe health problems, patients in critical cases, severely ill and comatosed patients.

### Tools:-

Two tools were used in this study

#### Tool 1:

Interview questionnaire sheet was constructed after reviewing the relevant literature to assess knowledge of TB patients and family caregivers about TB and it consists of three parts:

##### Part 1:

This part covered the following information socio-demographic characteristics of patients and their families which include (age, sex, address, occupation, income..etc) according to (Abd El-Tawab, 2004).

##### Part 2:

Which include environmental assessment sheet which was developed by the researcher, to assess home sanitation such as (Ventilation, presence of sewage sanitation and home facilities and crowding by estimation of crowding index ....etc).

##### Part 3:

It includes questions to assess knowledge of TB patients and their family caregivers about tuberculosis disease such as (seriousness of TB, signs & symptoms, modes of transmission, high risk group, dangerous of disease, investigations, treatment and prevention and source of information) These information were quoted from survey of knowledge, attitude and practice enhanced response to TB, Egypt (WHO, 2008).

##### Tool 2:

A rating scale used to assess attitude of patients' and their families about tuberculosis and their stigma in community. It was included (13) items for patients and their families. The response were on a three-point Likert scale ranging from (I don't know, agree and disagree). Items were scored (0, 1, 2), respectively (WHO, 2008) in English form and translated into Arabic. The validity of this tool was checked and revised by panel of seven experts from nursing and medical staff who reviewed the instrument for clarity, relevance, comprehensiveness, understanding and applicability. The reliability of the questionnaire was assessed using cronbachs alpha with an overall internal consistency of 0.75.

## Methods:

### I- Administrative design

An official approval letter to conduct the study was obtained from the Dean of the Faculty of Nursing, Minia University to the Managers of the previous mentioned chest hospitals to facilitate the study; this letter included the title and the aim of the study.

The first contact between the researcher and the study participants was at the outpatient clinic. During this interview the personal characteristics of patients were obtained that include address and telephone numbers then the second interview were carried out with the study participants by visiting them at home.

### II- Ethical consideration

The purpose of the study were explained for every TB patient and their family caregivers and the investigator promised them for confidentiality of information and that they have ethical right to agree or refuse participation in the study, an oral consent was taken from those who agreed to participate in the study.

### III- Pilot study

A pilot study was done on (10%) patients and their family caregivers from the total sample and excluded from the study sample. The aim of pilot study was to test the clarity of the tools and to estimate the required time to fill the questionnaire. Based on the result of this pilot study, some modifications in the tools were done.

#### IV- Data Collection

Data were collected through interviewing patients and their families at their homes. The estimated time to complete each interview was 20-30 minutes, depending on the response of participants. Data collection was started from (February 2012 to June 2012), three days per week, and the average number of interviews was 4-5 per day.

#### V- Statistical design and scoring system

The collected data were tabulated and statistically analyzed to evaluate the difference between the groups under study as regards the various variables. The statistical analysis was done using SPSS program version 16, descriptive and inferential data were carried out including; frequency, percentage, chi-square and ANOVA test.

A scoring system was designed for the assessment of knowledge, 1 grade was given for each correct answer and zero was given for an incorrect answer and I don't know. The grade of each item summed-up and then converted into a percent score. Poor knowledge: score less than 50%, Fair knowledge: if score is 50-70% and Good knowledge: if score more than 70% (Solliman et al, 2012)

Regarding to total scoring of attitude scale, it consists of (13) questions. Each question is scored using a three point Likert scale. It was calculated by summing-up and then converted into a percent score. Patient and their families attitude were considered positive attitude if the score was more than 60 % and negative attitude if the score less than 60 %. (Ibrahim et al, 2009)

#### Results:

**Table (1)** shows Sociodemographic characteristics of the studied sample. Around half (49.6%) of patients aged ranged between 20-39 years, with mean age of  $34.8 \pm 13.7$ . while 47.4% of family caregivers were in age group 40-60 years with mean age  $38.8 \pm 13.9$ . Regarding sex, the study sample revealed that female patients are more than male 54.4% versus 45.6%, while in the family caregivers male gender are more involved than female (52.6% versus 47.4%).

Regarding to education, it was found that less than half of patients and their family caregivers (43.2% and 43.9%) were illiterate, while only 4.8% and 2.9% of them had university education. Concerning residence, the majority (80.8%) of the studied sample lived in rural, while (19.2%) were from urban. As regard to social score, about two thirds (61.6%) of patients were from middle social class, while (16.8%) had high social class.

**Table (2)** shows the knowledge of patient and their families about mode of transmission of TB, it was observed that more than half of both TB patients and

their families ( 59.2% and 54.3%) respectively did not know the mode of transmission of TB. While more than one third (37.6% and 33.5%) respectively of studied sample stated that smoking is the mode of transmission of TB followed by air, when TB patient coughs or sneezes (11.2% and 16.2%), respectively.

**Table (3)** illustrates the knowledge of patient and their families about high risk groups for TB. It was observed that (57.6% and 62.4%) respectively of studied sample did not know the high risk group of TB. While 23.2% of patients stated that drug users is highest people risk to TB infection and 21.4% of family caregivers stated that alcoholics is high people risk to TB.

**Table (4)** shows the knowledge of TB patients and their families about sign & symptoms of TB, it was observed that more than half (58.4%) of the studied TB patients stated cough that last more than 3 weeks is the main sign & symptoms of TB followed by shortness of breath, coughing blood, and fever without clear cause that last more than 7 days 56%, 50.4%, 48% respectively. While it was observed that around half ( 49.7%) of family of studied sample stated that cough that last more than 3 weeks and coughing blood is the main signs & symptoms of TB followed by Shortness of breath and fever without clear cause that last more than 7 days 46.2%, 24.8% respectively.

**Table (5)** shows the knowledge of TB patients and their families about different types of investigations of TB, it was observed that the majority (88.8%, 84.4%) of studied sample stated that Chest x-ray is the main type of investigation followed by sputum analysis (78.4%, 57.8%) respectively.

**Table (6)** shows the knowledge of TB patients and their families about prevention of TB, it was observed that nearly half of the studied sample (44.8%) did not know preventive measure of TB. While more than one third of studied sample (38.4%) state that good nutrition is the best mode of prevention of TB.

**Table (7)** illustrate the relation between knowledge of TB patients and their sociodemographic characteristics, as regard to age, it was observed that around three quarter (73.8%) of patient had poor score in the age group between 40-60 years. While good score was observed in 17.7% their age from 20-39 years with no statistically significant difference ( $P = 0.2$ ). As regard to patient education, more than three quarter (79.6%) of illiterate had poor knowledge, while good knowledge was observed in 50% of university education with high statistically significant difference ( $P = 0.0001$ ). Also (100%) of widowed patients had poor knowledge, versus to (19.4%) of single had good knowledge with no statistically significant difference ( $P = 0.264$ ).

**Table (8)** shows the relation between knowledge of family caregivers and sociodemographic characteristics, as regard to age it was observed that two third (66.7%) had poor score of knowledge in age group less than 20 years, while (11%) were good knowledge between age group 40-60- years. With statistically significant difference ( $P = .002$ ). Regarding education, three quarter (75%) of illiterate had poor score of knowledge, while 80% of university education had good score of knowledge. with high statistically significant difference ( $P = 0.0001$ ).

**Table (9)** shows the total knowledge score of the TB patients and their families about TB, it was observed that about two thirds (64.8%) of patient had poor knowledge, 23.2% had fair knowledge and 12% had good knowledge, while more than half (54.3%) of family had poor knowledge, 29.5% had fair knowledge and 16.2% had good knowledge

**Table (10)** shows that more than two third (66.4%) of TB patients agree that he had ashamed from TB and 71.2% hide that he had infection. While the majority of patients agree that TB affect family responsibilities, work performance, breast feeding and lead to serious complications during pregnancy. (98.4%. 97.6%. 84.8% and 82.4%) respectively. Also (50.4%) disagree that TB cause female infertility.

**Table (11)** shows that more than three quarter (76.9%) of patients agree that they would be ashamed from TB and 78% hide that they had a patient with infection. While the majority of patients (95.4%) agree that TB affect family responsibilities, work performance, breast feeding and lead to serious complications during pregnancy. (95.4%, 92.5%, 79.2% and 75.1%) respectively Also 49.1% disagree that TB cause female infertility

**Table (12)** shows the total attitude score of the TB patients and their families about TB, it was observed that more than three quarter (77.6%) of patients and ( 78% ) of family caregivers had negative attitude and 22.4% and 22% respectively of them had positive attitude.

**Table (1) Sociodemographic characteristics of the TB patients and their family caregivers, Minia Governorate, 2013**

Variables	Patients (n= 125)		Families (n= 173)	
	No.	%	No.	%
<b>Age( years ):</b>				
Less than 20	21	16.8	18	10.4
20-39	62	49.6	73	42.2
40-60	42	33.6	82	47.4
Mean $\pm$ SD	34.8 $\pm$ 13.7		38.8 $\pm$ 13.9	
<b>Sex:</b>				
Male	57	45.6	91	52.6
Female	68	54.4	82	47.4
<b>Educational level:</b>				
Illiterate	54	43.2	76	43.9
Read and write	8	6.4	13	7.5
Primary education	21	16.8	29	16.8
Secondary education	36	28.8	50	28.9
Universal education	6	4.8	5	2.9
<b>Residence:</b>				
Rural	101	80.8	140	80.9
Urban	24	19.2	33	19.1
<b>Social score:</b>				
Low	27	21.6	37	21.4
Middle	77	61.6	106	61.3
High	21	16.8	30	17.3

**Table (2) Knowledge of TB patients and their family caregivers about mode of transmission of TB, Minia Governorate, 2013**

Variables	Patients (n= 125)		Families (n= 173)	
	No.	%	No.	%
<b>Don't know</b>	74	59.2	94	54.3
<b>Smoking</b>	47	37.6	58	33.5
<b>Air, when TB patient coughs or sneezes</b>	14	11.2	28	16.2
<b>Sharing Sheesha pipes</b>	14	11.2	18	10.4
<b>Eating in same dishes</b>	8	6.4	20	11.6

There is more than one answer

**Table (3) Knowledge of TB patients and their family caregivers about high risk groups of TB, Minia Governorate, 2013**

Variables	Patients	Families
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	(n= 125)		(n= 173)	
	No.	%	No.	%
Don't know	72	57.6	108	62.4
Alcoholics	29	23.2	37	21.4
Drug users	34	27.2	29	16.8
Anybody	21	16.8	22	12.7
Homeless people	4	3.2	10	5.8
Close contacts with infected patients	7	5.6	10	5.8
Smokers	6	4.8	4	2.3

There is more than one answer

Table (4) Knowledge of TB patients and their family caregivers about signs & symptoms of TB, Minia Governorate, 2013

Variables	Patients (n= 125)		Families (n= 173)	
	No.	%	No.	%
Cough that last more than 3 weeks	73	58.4	86	49.7
Shortness of breath	70	56.0	80	46.2
Coughing blood	63	50.4	86	49.7
Fever without clear cause that last more than 7 days	60	48	43	24.8
Weakness	34	27.2	28	16.2

Variables	Patients (n= 125)		Families (n= 173)	
	No.	%	No.	%
Chest pain	29	23.2	23	13.3
Weight loss	25	20.0	32	18.5
Pain in different site of the body	24	19.2	21	12.1
Severe headache	7	5.6	11	6.4

There is more than one answer

Table (5) Knowledge of TB patients and their family caregivers about diagnostic methods of TB, Minia Governorate, 2013

Variables	Patients (n= 125)		Families (n= 173)	
	No.	%	No.	%
Chest x-ray	111	88.8	146	84.4
Sputum analysis	98	78.4	100	57.8
Blood analysis	30	24.0	20	11.6
CT scan & MRI	19	15.2	13	7.5
Urine analysis	6	4.8	7	4.0
TB skin test	5	4.0	2	1.2
ECG	3	2.4	1	0.6
Ultrasound	3	2.4	5	2.9
Sputum culture	1	0.8	4	2.3

There is more than one answer

Table (6) Knowledge of TB patients and their family caregivers about preventive measures of TB, Minia Governorate, 2013

Variables	Patients (n= 125)		Families (n= 173)	
	No.	%	No.	%
Don't know	56	44.8	78	45.1
Good nutrition	48	38.4	62	35.8
Stop smoking	31	24.8	27	15.6
Avoid sharing TB patients utensils	19	15.2	45	26.0
Taking complete treatment	12	9.6	9	5.2
Covering mouth and nose when coughing or sneezing	5	4.0	4	2.3
Good ventilation	3	2.4	3	1.7
Washing hands after touching items in public places	4	3.2	7	4.1

There is more than one answer



**Table (7) Relationship between sociodemographic characteristics of TB patients and their knowledge about the disease, Minia Governorate, 2013**

Variables	Knowledge						P-value (X <sup>2</sup> )
	Poor (n= 81)		Satisfactory (n= 29)		Good (n= 15)		
	No.	%	No.	%	No.	%	
<b>Age:</b>							
Less than 20	13	61.9%	7	33.3%	1	4.8%	0.2 (5.5)
20-39	37	59.7%	14	22.6%	11	17.7%	
40-60	31	73.8%	8	19.1%	3	7.1%	
<b>Sex:</b>							
Male	27	47.4%	19	33.3%	11	19.3%	0.001* (14.202)
Female	54	79.4%	10	14.7%	4	5.9%	
<b>Education level:</b>							
Illiterate	43	79.6%	10	18.5%	1	1.9%	0.0001* (28.786)
Read and write	5	62.5%	2	25%	1	12.5%	
Primary education	15	71.4%	6	28.6%	0	.0%	
Secondary education	17	47.2%	9	25%	10	27.8%	
Universal education	1	16.7%	2	33.3%	3	50%	
<b>Marital status:</b>							
Single	18	58.1%	7	22.6%	6	19.4%	.264 (5.232)
Married	57	64.8%	22	25%	9	10.2%	
Widowed	6	100%	0	.0%	0	.0%	
<b>Occupation:</b>							
Not work	57	76%	13	17.3%	5	6.7%	0.0001* (25.036)
Manual Worker	16	64%	7	28%	2	8%	
Professional	7	46.7%	5	33.3%	3	20.0%	
Employee	1	10%	4	40%	5	50%	
<b>Social score:</b>							
Low	21	77.8%	5	18.5%	1	3.7%	0.192 ( 6.092)
Middle	50	64.9%	16	20.8%	11	14.3%	
High	10	47.6%	8	38.1%	3	14.3%	
<b>Residence:</b>							
Rural	68	67.3%	21	20.8%	12	11.9%	0.3 (1.83)
Urban	13	54.2%	8	33.3%	3	12.5%	

\* Statistical significant difference (P &lt; 0.05)

**Table (8) Relationship between sociodemographic characteristics of TB patients family caregivers and their knowledge, Minia Governorate, 2013**

Variables	Knowledge						P-value (X <sup>2</sup> )
	Poor (n= 94)		Satisfactory (n= 51)		Good (n= 28)		
	No.	%	No.	%	No.	%	
Age:							
Less than 20	12	66.7%	2	11.1%	4	22.2%	0.02* (11.16)
20-39	30	41.1%	28	38.4%	15	20.5%	
40-60	52	63.4%	21	25.6%	9	11%	
Sex:							
Male	46	50.5%	26	28.6%	19	20.9%	0.2 (3.17)
Female	48	58.5%	25	30.5%	9	11%	

Variables	Knowledge						P-value (X <sup>2</sup> )
	Poor (n= 94)		Satisfactory (n= 51)		Good (n= 28)		
	No.	%	No.	%	No.	%	
<b>Education level:</b>							
Illiterate	57	75%	16	21.1%	3	3.9%	0.0001* (46.02)
Read and write	5	38.5%	6	46.2%	2	15.4%	
Primary education	16	55.2%	10	34.5%	3	10.3%	
Secondary education	16	32%	18	36%	16	32%	
Universal education	0	0.0%	1	20%	4	80%	
<b>Marital status:</b>							
Single	13	43.3%	11	36.7%	6	20%	0.2 (4.88)
Married	77	55.4%	40	28.8%	22	5.8%	
Widowed	4	100%	0	0.0%	0	0.0%	
<b>Occupation:</b>							
Not work	54	60%	25	27.8%	11	12.2%	0.0001* (28.79)
Manual Worker	25	54.4%	18	39.1%	3	6.5%	
Professional	11	55%	5	25%	4	20%	
Employee	4	23.5%	3	17.7%	10	8.8%	
<b>Degree of kinship:</b>							
Father / Mother	28	58.3%	13	27.1%	7	14.6%	0.5 (6.8)
Brother / Sister	8	50%	6	37.5%	2	12.5%	
Son / Daughter	16	45.7%	11	31.4%	8	22.9%	
Husband / Wife	42	56.8%	21	28.4%	11	14.9%	

\* Statistical significant difference (P < 0.05)

**Table (9) Total knowledge score of the TB patients and their family caregivers, Minia Governorate about TB, 2013**

Total knowledge	Study participants		X <sup>2</sup>	P-value
	Patients	Families		
<b>Poor</b>	81 (64.8%)	94 (54.3%)	3.3	0.2
<b>Fair</b>	29 (23.2%)	51(29.5%)		
<b>Good</b>	15 (12%)	28 (16.2%)		
<b>Total</b>	125 (100%)	173 (100%)		

**Table (10) Distribution of TB patient's attitude about tuberculosis, Minia Governorate, 2013**

Variables	Agree		Disagree		Don't know	
	No.	%	No.	%	No.	%
1- In case you had TB, would you be ashamed for having TB?	83	66.4	27	21.6	15	12
2- Would you want to hide that you have TB?	89	71.2	25	20	11	8.8
3- TB affect relationship with others	83	66.4	22	17.6	20	16
4- Would you prefer to live isolated in case you had TB?	60	48	35	28	30	24
5- TB affect your work performance	122	97.6	2	1.6	1	.8
6- TB affect your marital relationship	84	67.2	14	11.2	27	21.6
7- TB affect your family responsibilities	123	98.4	2	1.6	0.0	0.0
8- There are less chances of getting married due to TB diagnosis	60	48	10	8	55	44
9- TB can affect female fertility	14	11.2	63	50.4	48	38.4
10- TB leads to serious complication during	103	82.4	3	2.4	19	15.2

Variables	Agree		Disagree		Don't know	
	No.	%	No.	%	No.	%
pregnancy						
11- TB can affect breast feeding	106	84.8	1	.8	18	14.4
12- TB can affect pregnancy outcome	62	49.6	6	4.8	57	45.6
13- Females get difficulty in deciding to be treated for TB	59	47.2	10	8	56	44.8

Table (11) Attitude of TB patient's family caregivers about tuberculosis, Minia Governorate, 2013

Variables	Agree		Disagree		Don't know	
	No.	%	No.	%	No.	%
1- In case of patient had TB, would you be ashamed for having TB?	133	76.9	22	12.7	18	10.4
2- Would you want to hide that the patient had TB from the family?	135	78	26	15.1	12	6.9
3- TB affect patient relationship with others	133	76.9	18	10.4	22	12.7
4- Would you prefer the patient live isolated in case you had TB?	77	44.5	53	30.6	43	24.9
5- TB affect your work performance	160	92.5	4	2.3	9	5.2
6- TB affect your marital relationship	125	72.3	20	11.5	28	16.2
7- TB affect your family responsibilities	165	95.4	1	.6	7	4
8- There are less chances of getting married due to TB diagnosis	81	46.8	11	6.4	81	46.8
9- TB can affect female fertility	19	11	85	49.1	69	39.9
10- TB leads to serious complication during pregnancy	130	75.1	6	3.5	37	21.4
11- TB can affect breast feeding	137	79.2	5	2.9	31	17.9
12- TB can affect pregnancy outcome	72	41.6	19	11	82	47.4
13- Females get difficulty in deciding to be treated for TB	66	38.2	16	9.2	91	52.6

Table (12) Total attitude score of the TB patients and their family caregivers about TB, Minia Governorate, 2013

Total attitude	Studied groups		X <sup>2</sup>	P value
	Patients	Families		
Negative	97 (77.6%)	135 (78%)	0.9	1
Positive	28 (22.4%)	38 (22%)		
Total	125 (100%)	173 (100)		

### Discussion:

Tuberculosis is one of the most serious health problems globally. About one third of the global population is estimated to be infected with mycobacterium tuberculosis which kills an estimated two million of the approximately eight million people who develop the disease each year (Nkulu et al, 2010). It is spread through the air when people who have an active TB infection cough, sneeze, or otherwise transmit their saliva through the air. (Kethireddy, 2010)

In agreement with (Mohamed et al, 2007) showed that around half of patients were in age group 20-39 years old. But in family caregivers the present study showed (47.4%) of family caregivers ranged between 40-60 years. Contradicted with (Ige & Iasebikan, 2011) who found more than two fifth (42%) of age group 40-54. Regarding sex the present study show that about more than two fifth (45.6%) of patients were male and more than half (54.4%) were female. This contradicted with (Hashim et al., 2003) in Iraq reported that about (66.6%) males and (33.4%) females. And consistent with (Hoa et al, 2009) in a rural community in Vietnam reported that



the majority (75%) were female and (25%) were male.

Regarding education level the present study showed that about more than two fifth (43.2%) illiterate, (6.4%) read and write, (16.8%) primary education, (28.8%) secondary education and (4.8%) university education. This consistent with (**Abd El-Hameed et al, 2012**) at Benha University reported that (29%) illiterate, (21%) read and write (13%) primary education, (30%) secondary education and (7%) university education.

Regarding mode of transmission the present study show that more than one third of patients and their family caregivers stated that smoking is the most common mode of transmission of TB, this result contradicted with (**Kar & Logaraj, 2010; Legesse et al, 2010**) were found air when cough or sneeze is the most common mode of the transmission of TB.

In agreement with (**Mushtaq et al, 2010**) the present study illustrated that drug users is the first high risk group of TB disease stated by patient, but in family caregivers stated that alcoholics is the first high risk group of TB, this contradicted with (**Gilpin et al, 2011**) who found the poor is the first high risk group of TB disease.

In agreement with (**Yadav et al., 2006; Agboatwalla et al, 2003**) the present study showed that more than half of patients and their family caregivers stated that cough last more than 3 weeks was the commonest symptom of TB.

Regarding diagnosis the present study showed that majority of patients stated that chest x-ray is the most common diagnostic method of TB, this consistent with (**Bacay-Domingo, 2009**) and in family caregivers stated that chest x-ray is the most common diagnostic method of TB, this contradicted with (**Baldwin et al, 2010**) who found that sputum sample is the most common diagnostic method of TB.

Regarding duration of treatment the present study showed that the majority (97.6%) of patients and their families knew the correct duration for the treatment of tuberculosis. this contradicted with (**Koay, 2004. Needhan et al, 2004**) in Kudat District, Sabah reported that about 33% of the respondents knew the correct duration for the treatment of tuberculosis.

The current study shows that more than one third of patients were mentioned that good nutrition is the most common prevention of TB, this contradicted with (**Anjum et al, 2009**) who reported that use of medicines is the most common prevention of TB, and more than one third of family caregivers were mentioned that good nutrition is the most common prevention of TB, this contradicted with (**Mfinanga et al, 2003**) who reported that covering the mouth and nose while coughing and sneezing is the most common prevention of TB.

Regarding source of information the present study showed that majority ( 96.8%) considered doctor is the most source of information. This contradicted with (**Rahman et al, 2012., Jaramillo, 2001**) in Bangladesh reported that about 46.8% stated that they get information about TB from television (46.8%), In agreement with (**Aryal et al, 2012; Rintiswati et al, 2009**) the present study showed that the majority of patients and their family caregivers wanted to hide disease from others. The present study shows that less than half (44.5%) of patients and their family caregivers were agreed to isolate the TB patients from the family. This contradicted with (**Kelly, 2010; Storla et al, 2008**).

In conclusion, the present study concluded that the majority of patient age groups were (20-39) years. The majority of patients and their families had poor knowledge and negative attitude toward TB. So the present study recommended that health education for the public through campaigns about TB (Causes, mode of transmission, Sign and symptoms, complication, and prevention) through announcement on radio, TV and newspapers, magazines and pamphlets, posters in public places.

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