Knowledge of Pulmonary Tuberculosis Dynamics among Family Caregivers at Ojha Institute of Chest Diseases, Dow University of Health Sciences (OICD, DUHS), Karachi, Pakistan

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ABSTRACT

Background: Pakistan being an under developed country encounters with a high burden of Pulmonary Tuberculosis (TB). The high incidence of TB is due to various reasons, such as knowledge deficit regarding the disease, non-compliance with TB treatment, low socioeconomic status of the patients' family, society's negative concept about TB, late diagnosis of the disease, extended treatment, and poor quality of available TB programs. This study assessed the level of knowledge regarding pulmonary TB among family caregivers at Ojha Institute of Chest Diseases (OICD), Karachi, Pakistan.

Method: This was a cross-sectional study carried out by non-probability, convenient sampling techniques at Ojha Institute of Chest Diseases. The sample size for this study was 55 participants (n=55). Demographic data such as gender, marital status, ethnic background, religion, employment status, and educational level was inquired by the participants prior to the questionnaire. McDonald's standard of learning outcome measurement criteria was used to categorize family care givers' level of knowledge regarding pulmonary tuberculosis. Pilot testing of the instrument was carried out to ensure its validity in the local context. Data entry and statistical analysis were performed using the SPSS for windows, version 16.0.0 (SPSS Inc. Chicago, IL, USA).

Results: Majority of the sample population (55%) was male, while most of the participants (51%) were of a mature age ranging between 30 to 44 years. 35% were uneducated or have not received any schooling. When evaluating the composite scores of the questionnaire, a significant number of participants exhibited a "very low" and "low" level of knowledge (38.1% and 21% respectively) regarding pulmonary TB, whereas the smallest percentage of the sample (1.8%) was categorized as having a "very high" level of knowledge.

Conclusion: As the study results revealed that knowledge of pulmonary tuberculosis dynamics among a significant fraction of the family caregivers at OICD is very poor, so there is an urgent need for initiation of educational programs and prompt actions by the authorities aimed at increasing public awareness regarding the dynamics of pulmonary TB.

Keywords—Pulmonary Tuberculosis; knowledge; family caregiver

INTRODUCTION

Pulmonary Tuberculosis (TB) is an infectious disease caused by *Mycobacterium* tuberculosis [1]. This disease is transmitted from infected individual to healthy individual through direct contact [2]. Primarily, *Mycobacterium* tuberculosis attacks the lungs; it also affects other organs of the body such as brain, kidneys, intestine, lymph nodes and bones [3]. It is estimated in 2014; about 9.6 million individuals contracted TB, while 1.5 million deaths occur due to this disease. More than 95% of these deaths happen in economically deprived countries, where public awareness sessions and educational materials are less reachable [4]. TB plays a major role in increasing global morbidity and mortality rate [5].

Pakistan stands in the queue of developing countries facing high burden of TB disease. Each year approximately half a million people are diagnosed with TB in Pakistan; the worldwide country rank is fifth among 22 countries where TB is considered a serious health issue [5, 6, 7]. Prevalence and Incidence of TB in Pakistan are 231/100,000 and 376/100,000, respectively. Nowadays Pakistan is faced with an increased magnitude of Multidrug Resistance Tuberculosis (MDR-TB) which adds a greater responsibility on the shoulders of the public health sector. It is difficult to estimate the numbers of Multidrug Resistance Tuberculosis (MDR-TB) cases in Pakistan because an approved international drug sensitivity protocol has recently been implemented in the country [8].

Hence, TB status is consistently worsening due to various reasons, such as knowledge deficit regarding the disease, non compliance with TB treatment, low socioeconomic status of the patient's family, society's negative concept about TB, late diagnosis of the disease, extended treatment, poor quality of

available TB programs, and the malnourished condition of the patient [3,5,8,9,10].

Numerous studies have reported that inadequate public awareness regarding TB and negative public concept are the foremost reasons of underutilization of the available health services. Other factors, furthermore, that contribute to the improper use of healthcare services include late identification of the disease and non-compliance with TB treatment [10]. It is understood from the literature that the individuals who have sufficient information about TB signs and symptoms as well as myths made a conscious effort to pursue early care and timely visited the TB center along with properly adhering with TB treatment. Early identification of the disease and being compliant with TB treatment may help to reduce the development of Multidrug Resistance Tuberculosis (MDR-TB) cases in Pakistan [5].

Caregivers play an essential role in maintaining medication compliance in active TB patients; therefore assessing and providing knowledge to caregivers not only prevents new cases of Multidrug Resistance Tuberculosis (MDR-TB) but also leads to more positive health outcomes in the patients, which ultimately reduces the positive cases of TB in the country [5]. Pakistani society's primary socialization revolves around the extended family collectively making health care decisions regarding the patient; hence, this study addresses the importance of the role of caregivers when caring for their loved ones with active pulmonary TB [8].

There are a small number of studies conducted regarding this subject matter in Pakistan. A study was conducted by Mushtaq et al (2011) which found a lack of knowledge regarding TB furthermore; the study reveals the urban population has better knowledge as compared to the rural population [10]. Another study was conducted by Gilani and Khurrum (2012) which found poor public knowledge and a generalized misunderstanding about TB disease [5]. The present study provides a unique exploration on the level of family caregivers' knowledge regarding tuberculosis; thereby, contributing a better understanding of the disease and providing insight of TB in a tertiary care hospital.

METHODOLOGY

The present design was Cross sectional and universal sampling technique was used in this study. This study was conducted at Ojha Institute of Chest Disease (OICD) Karachi. The Ojha Institute of Chest Disease (OICD) is public hospital runs under the management of Dow University of Health sciences, which is situated at Ojha campus SUPARCO road Karachi. The services of this hospital are not limited to Karachi city, but it caters all areas of Sindh province. All adult attendants of tuberculosis (Positive) patients regardless of gender admitted in Ojha Institute of Chest Diseases (OICD) were included in this study, while Male and female attendant's age below 15 years of tuberculosis positive patients admitted in Ojha Institute of Chest Diseases (OICD) were excluded. The study was carried out over a period of six weeks from November 2016 to December 2016.

The instrument comprised of following 2 sections.

Section 1: Demographic Questionnaire variables, such as age, gender, ethnicity, marital status, educational background.

Section 2: This section was used to assess the Family caregivers' knowledge about tuberculosis. It includes 16 multiple choice questions regarding Pulmonary Tuberculosis (TB). Of the three written multiple choices answers, participants were instructed to encircle the best answer.

Approval was taken from the Ojha Institute of Chest Disease (OICD) Director. Permission from Nursing Superintendent and ward In-charge (Head Nurse) of respective hospitals was obtained. Participants were selected by using the convenient sample method. Those willing to participate were

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required to sign a written consent form. The self-administered questionnaire was distributed among participants; those who were facing difficulties in filling the form were facilitated by the researcher by verbally reciting the question and encircling the participants answer choice.

RESULTS

The sample size for this study was 55 participants (n=55). Demographic data such as gender, marital status, ethnic background, religion, employment status, and educational level was asked by the participants prior to answering the questionnaire. Majority of the sample population was male comprising of 55%, while females who participated in this study were 44%. The participants of this study were of various age groups, with a majority 51% comprised of a mature population ranging between 30 to 44 years age group, followed by 38% of the participant population belonging to the 18 to 29 years age group. Only 11% of the sample population who filled the questionnaire were in the 45 to 59 years age group, however, no participants belonged to the above 60 age group. Mostly the participants involved in this study had a marital status with over 41% stating they were married, whereas only 14% of the participants were single. The ethnic background of the participants was asked as a part of the demographic data with a majority 36% of the sample population stated as being Sindhi, followed closely by 33% of the participants comprised of different ethnic backgrounds labeled as "Others." 15% of the participants in the study belonged to the Punjabi ethnic background, while 9 % belonged to the Balochi ethnicity. The Pashtu ethnicity comprised the least percentage at 7% of the total participants in the study. Religion was another demographic asked by the participants in the study; with a 100% of the participants belonged to the Islamic religion. Participants were also asked to state their employment status with a majority 49% of the participants expressed being employed and holding jobs, while 23% stated being unemployed at that time. In this study, 5%

of the participants stated as being of a student status. The participants educational level was also assessed for this study with a majority 35% stated as being uneducated or as not having received any schooling, for these participants the questions were asked verbally and their responses were documented by the data collector. Participants who received an education below grade 8 comprised of 27% of the participants. 25% of the participants stated as having received an education between grade 8 and 12. Lastly, 13% of the participants expressed as having accomplished an education status above 12 class. In your paper title, if the words "that uses" can accurately replace the word using, capitalize the "u"; if not, keep using lower-cased.

Table 1: Socio-demographic profile of study participants

Characteristics of Studied Population		
Character	**Specified Character**	**Percentage**
Gender	Male	56%
	Female	44%
Age	18-29 years	38%
	30-44 years	51%
	45-59years	11%
	60 & over	0%
Marital Status	Married	75%
	Single	25%
Ethnicity	Sindhi	36%
	Baluchi	9%
	Punjabi	15%
	Pashtu	7%
	Others	33%
Religion	Muslim	100%
	Others	0%
Employment Level	Employed	49%
	Unemployed	42%
	Students	9%
Educational Level	Uneducated	35%
	Below 8 standard	27%
	8-12 standard	25%
	Over 12 standard	13%

McDonald's standard of learning outcome measurement criteria was used to categorize family caregivers' level of knowledge regarding pulmonary tuberculosis. The level of knowledge was categorized into five groups: very low,

low, moderate, high, and very high. Participants categorized as having a "very low" knowledge level meant they achieved a composite score of less than 60% on the questionnaire, while a "low" level of knowledge is achieved when participants score a composite score between 60 to 69.99%. A "moderate" level of knowledge was achieved by a composite ranging between 70 to 79.99%. A "high" level of knowledge is categorized by participants who score above 80% as a composite score in the questionnaire, while a "very high" knowledge level was categorized as having above 90% composite score from the questionnaire. While After the analysis of the questionnaire, a majority of the participants were labeled as having very low or low level of knowledge. 38.1% of the participants in the study were classified as having very low level of knowledge regarding pulmonary TB, while approximately 27% were categorized as having a low level of knowledge. The smallest percentage of the sample size was categorized as having a very high level of knowledge with only 1.8 % of the participants. The participants classified as having a moderate and a high level of knowledge comprised of approximately 16% equally in each group out of the total participants in the study.
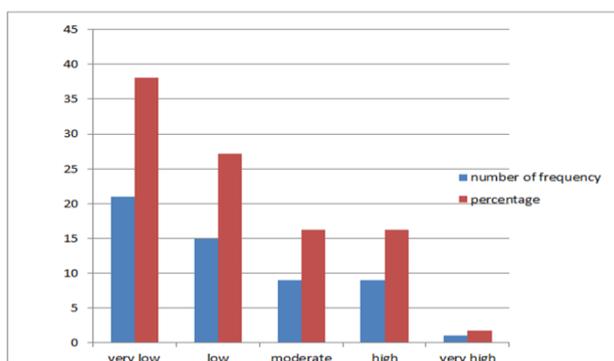

Figure 1: Level of Knowledge about Tuberculosis in studied population

Categories	Frequency	Percentage
very low	21	38.1
low	15	27.2
moderate	9	16.3
high	9	16.3
very high	1	1.8

Figure 2: Distribution of Pulmonary tuberculosis knowledge among Family Caregivers

CONCLUSION

Our study results revealed that level of knowledge regarding pulmonary TB dynamics among a significant fraction of the study participants was very poor. As 38.1% and 27% of the participants in the study were classified as having very low level and low level of knowledge about pulmonary TB respectively and only 1.8% of the participants were categorized as having a very high level of knowledge.

The study result necessitates a prompt action for the public awareness regarding the dynamics of pulmonary TB. The authors strongly suggest that the authorities should address this issue on priority basis and arrange sustainable remedies to the situation.

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