

# Knowledge, Attitude, and Practices of latent TB Infection among Health Care Workers, Aljazeera State TB Centers, Sudan

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**Abstract:** Health care workers (HCW) are at increased risk of latent tuberculosis infection (LTBI) from occupational exposure to *Mycobacterium tuberculosis*. The objective was to study the knowledge, attitude and practices among LTBI at primary HCW in Aljazeera state Sudan. We conducted an analytical study, among HCW in TB treatment center using a structured questionnaire and an evaluated for LTBI by using the tuberculin skin test among 367 HCW, the percentage of knowledge represented 35.5%, and the majority of (64.5%) they don't heard about latent tuberculosis. The majority of participants (94.8%) don't usually wear mask to protect themselves, and irregular use of masks represent 95%, so this study demonstrated a substantial occupational risk of LTBI among HCW Sudan. According to education level of HCW were at better personal protective equipment used to prevent acquiring of new TB infection our study recommended implementation of sound TB infection control measures in all health care facilities with patients suspected of having infectious.

**Keywords:** Health care workers (HCW), latent tuberculosis infection (LTBI).

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## 1. INTRODUCTION

Tuberculosis infection control a practical manual for preventing ,TB This manual provides up-to-date information about the guidelines and regulations pertaining to TB infection control, methods of reducing the risk of TB infection, and facility-specific guidelines for reducing the risk and dealing with potential exposure. <sup>(1)</sup>

Most knowledge, attitudes and practice (KAP) surveys on LTBI have focused on health professionals, on high-risk populations (such as, the immigrants, the homeless, and the African-Americans and on difficulties in adherence to treatment and side effects of medications, to our knowledge, no studies have explored this issue from the contacts' perspective and only two from the perspective of health services users (herein called users). <sup>(2)</sup>

A practical manual for preventing TB contains information, forms, signs, and user-friendly tools for clinics, hospitals, homeless shelters, and other parties interested in the prevention and control of tuberculosis. <sup>(3)</sup>

Previous studies demonstrated that spatial clustering of TB data when associated to genetic clustering of TB cases more easily allows to focus on adequate settings to distinguish most vulnerable populations and reactivation versus recent transmission cases. <sup>(4)</sup>

By Jennifer A. Whitaker in has study (Determinants of Tuberculosis Infection Control-Related Behaviors among Healthcare Workers in the Country of Georgia) the total, 240 HCWs (48% physicians; 39% nurses) completed the survey. The overall average TB knowledge score was 61%. Only 60% of HCWs reported frequent use of respirators when in contact with TB patients. Only 52% of HCWs were willing to undergo annual LTBI screening; 48% were willing to undergo LTBI treatment. <sup>(5)</sup>

By Bassano (42%) practice among HCWs are at higher than average risk for TB , Sound TB infection control measures should be implemented in all health care facilities with patients suspected of having infectious TB. <sup>(7)</sup>

Life of TB patients was stigmatized due to miserable economic conditions as well as bad attitude of family and colleagues. Loss of job, malnutrition, highly populous housing and treatment costs were the distressful economic constraints confronted by TB patients, Lack of knowledge poor attitude of society and predominance and misconceptions about the disease also accounted for the emergence of non-compliance.<sup>(8)</sup>

## 2. METHODOLOGY

This was TB centers based analytical study conducted in Aljazeera state, Sudan in 2017.

Aljazeera is the second largest city in Sudan at distance about 550 km; it has 45 TB Centers, estimated population of over five million people.

The population study involves all health care workers in TB centers. A representative sample of 367 health care workers were drawn from the study population .

The desired sample size was determined by applying the formula for previous prevalence estimation with the following considerations:-

- The estimated prevalence of latent TB in Sudan in 2012 was (18%).
- Confidence of (95%).
- Error allowed of (4%).

$$n = \frac{K(PQ)}{E^2} = \frac{(1.96)(0.18 \times 0.82)}{(0.04)^2} = 367$$

The main variables collected were:-

Knowledge, mask use, vaccine, routine checking.

## 3. DATA COLLECTION

Self-administered questionnaire were distributed together which included information on possible risk factors of socio demographic. In this study, a diagnosis of LTBI was made if the respondent was tested positive by tuberculin skin test, The test was administered by a trained nurse using the Montoux method i.e. 0.1 ml of 2 T.U. of Tuberculin PPD RT 23 SSI was injected intra dermal at the velar aspect of the forearm of respondents. The test was read 48 to 72 hours after application using the palpation method. Two cut off points for a positive TST (10 and 15 mm of in duration) were evaluated.

Also we collected the data regarding their knowledge, attitude and practices.

The ethical considerations were obtained approval from the department of epidemiology, Alzaiem Alazhari University, and ministry of health.

Also we took permission from everyone who participated in this study prior to collect the needed data; also we followed the standards guide lines for LTB.

## 4. RESULTS

The aim of this study to assess the knowledge, attitude and practices of latent TB infection among health care workers in Aljazeera state at TB centers, Sudan 2017.

Table 1: data regarding knowledge, attitude and Practices toward latent LTBI.

Question	Count	Percentage (%)
Have you ever had tuberculosis?		
Yes	136	37.1
No	231	62.9
Did you do the skin test for TB?		
Yes	91	24.8
No	276	75.2
Is a TB patient risk to those around him?		
Yes	133	36.2

No	234	<b>63.8</b>
Have a member of your family or friends contracted tuberculosis?		
Yes	254	<b>69.2</b>
No	113	<b>30.8</b>
Do you think tuberculosis is related to the genetic factors?		
Yes	182	<b>49.6</b>
No	185	<b>50.4</b>
If you know that your colleague or one of your relatives is infected with tuberculosis?		
advise him to meet with a doctor	236	<b>64.3</b>
just stay away from him	57	<b>15.5</b>
notify his work	40	<b>10.9</b>
I do not know	34	<b>9.3</b>
What do you think about using the tools of patient tuberculosis?		
Infection	174	<b>47.4</b>
Yes, not dangerous	85	<b>32.2</b>
After washing	40	<b>10.9</b>
Use normal	68	<b>18.5</b>
Do you accept to give care for tuberculosis patient?		
Yes, I do my work	163	<b>44.4</b>
Better to be carried out by another colleague	58	<b>15.8</b>
I am afraid	71	<b>19.3</b>
I do not know	75	<b>20.4</b>
What do you do to protect yourself from tuberculosis?		
Wear the mask	166	<b>45.2</b>
Keep away from the patient	109	<b>29.7</b>
Wash my hands with soap and water	57	<b>15.5</b>
I do not know	35	<b>9.5</b>
Do you wear a mask it call N95?		
Yes	19	<b>5.2</b>
No	348	<b>94.8</b>
Educating the patient and accompanying patients with tuberculosis in the hospital?		
Necessary	274	<b>74.7</b>
Not necessarily	16	<b>4.4</b>
Patient only	42	<b>11.4</b>
I do not know	35	<b>9.5</b>
If you feel any symptoms of tuberculosis, what to do?		
go to the doctor	221	<b>60.2</b>
I take the medicine on my own	46	<b>12.5</b>
I am absent from work	54	<b>14.7</b>
I do not know	46	<b>12.5</b>
Have you been asked to have test for tuberculosis before starting work at the beginning of your appointment?		
Once	147	<b>40.1</b>
Twice	78	<b>21.3</b>
did not check	134	<b>36.5</b>
do not remember	8	<b>2.2</b>
When you are testing tuberculosis to make sure it is not infected?		
Once a year	94	<b>25.6</b>
When feeling a symptom	186	<b>50.7</b>
When hiring only	14	<b>3.8</b>
I do not	73	<b>19.9</b>
If the hospital has an infection management department, do you think that isolating TB patients is among their tasks?		
Yes	270	<b>73.6</b>
No	97	<b>26.4</b>

## 5. DISCUSSION

An important result in this part is related to participants knowledge about latent TB, more than half of the participants never heard about latent tuberculosis (64.3%), and don't know the difference between tuberculosis and latent TB (57.8%) it agree with NEBAL RESULT only half of them (54.7%) could differentiate between TB infection and TB disease.

75.2% of the participants didn't do the skin test and it not available but it Conflicts with this recommended by CDC testing activities should be conducted only among at-risk groups, certain individuals may be required to have testing for employment (health care worker) or school attendance independent of risk. Health care institutions' policies and procedures should include routine symptom screening as part of a comprehensive TB screen for employees and volunteers.<sup>(20)</sup>

On this study the majority of participants (94.8%) don't usually wear N95 mask to protect themselves. But this against for by JAE ALLEN her study The N95 Mask it very important for HCW because it Protect Against Tuberculosis Wearing an N95 mask is a safety precaution if your work brings you in contact with a person have active TB.

And when they asked about how to protect themselves from tuberculosis participants think that washing their hands will protect them from being infected (15.5%), it Correct According corner of the program is to decrease HCAs through improving hand hygiene among healthcare workers.<sup>(15)</sup> While the WHO campaign has outlined a framework, hand hygiene adherence continues to be problematic even though it is a simple and highly effective measure to reduce HCAs. While adherence with hand hygiene is poor in both developed and developing nations, barriers to implementation of a successful hand hygiene program may be different in resource-limited settings<sup>(21)</sup>

Very few HCWs reported wearing a mask or respirator when caring for patients with active TB disease (5%) and a low proportion of HCWs reported patients with active TB disease were, including those infected with HIV (10%).<sup>(27)</sup>

The majority of study participants admit the necessity of educating the patient and his companions with tuberculosis (74.7%) it really in with NEBAL study Nearly one-third of the HCWs (32.2%) reported that they had received some level of training or orientation on TB and most of them were clinical staff (25.3%) followed by lab/X-ray staff (5.3%). Of those who reported receiving TB training and/or orientation, only 12% had received TB IC specific training.

Among our HCW they see that proper TB infection control can prevent nosocomial transmission (92%) it agree practices By Bassano (42%) practice among HCWs are at higher than average risk for TB (KAP) among health care workers is a key first step in developing a successful infection control program.<sup>(27)</sup>

Tuberculosis continues to be an important disease both in humans and animals as it causes mortality and economic losses worldwide, it correct if we comber with our study with our result (89%) almost of HCW are low income the social economic impact of LTBI.

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