



ORIGINAL ARTICLE

Nurses' Experiences of Caring for Patients with Tuberculosis - An Interview Study in Indonesia

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Abstract

Background: Tuberculosis, TB is an infectious disease affecting millions of people each year and Indonesia have the second highest prevalence in the world. The cure of TB is already existing but hence to factors such as long treatment with severe side-effects results in low compliance. The aim of the study was to describe nurse's conceptions of caring for patients suffering from tuberculosis in Yogyakarta, Indonesia.

Method: Individual interviews were conducted with ten nurses at different hospitals and primary health centers. The material was analysed with a phenomenographic approach.

Findings: Three categories were described; "The conceptions of tuberculosis as a contagious disease", "The conceptions of the nurse's role" and "The conceptions of the patient's situation". Results showed that precautions and protection of transmission was the most prominent conception related to tuberculosis-care. Another point of view was nurse's role as an educator to improve patient's knowledge regarding precautions and treatment plan.

Conclusion: To perform nursing, precautions and protection is significant even though medication for TB is free of charge. However, other economic factors remain as well as manage the complexity of TB for example multidrug-resistance (MDR), calls for further research.

Keywords

Indonesia, Nursing, Tuberculosis, Phenomenography, Patient education

Introduction

Out of all infectious diseases tuberculosis (TB) is the deadliest of them all, in 2016 1.7 million people were killed. In high-income countries, TB is considered as a disease from the past, therefore people in the west are unaware of the magnitude of which tuberculosis still exists in the world [1]. Moreover, the United Nations [2] have declared global goals for a sustainable development, Agenda 2030 where goal number 3 focus on healthy lives and well-being for all and states that year 2030 should epidemics as tuberculosis be ended. In Indonesia year 2016, the incidence of TB was 1,020,000, why Indonesia have the second highest amount of TB-infections in the world [3]. Broadening the knowledge of caring for people with TB is one way to reach the United Nations goal. The treatment of TB exists; however, the disease has been closing to eradicated in large parts of the world. Therefore, this study indent to broaden the knowledge regarding TB as treatment as well as possible obstacles to improve healthcare for all.

Background

Tuberculosis is a contagious and infectious disease caused by the bacteria mycobacterium tuberculosis, and take place in different parts of the body, most-



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ly common areas are the lungs. Only a few inhaled germs are needed for a primary infection in the lungs spread through the air person to person due to sneezes or coughs with incubation around three to twelve weeks. Moreover, about one third of the world's population estimates to carry TB-bacteria without being ill as long as the individual has a well-functioning immune system. However, it is important to detect and treat latent infection in order to minimize spreading of the disease [3].

Existing TB treatment is effective; however, the long duration of treatment makes medication-compliance a problematic issue due to treatment for a period of at least six months [4]. Non-compliance to TB-treatment increase multidrug resistance making the treatment even more problematic [5]. One strategy to improve compliance is directly observed therapy (DOT), every dose is observed and documented by health worker or family member. However, there are low evidence in reducing non-compliance to anti-TB treatment according to a Cochrane review [5]. In addition, there are comorbidity between TB and HIV, for example in 2016, 40 percent estimates death with HIV were caused by a TB-infection [1].

Research has shown that delay in receiving TB-diagnosis occur when healthcare professionals in countries with low number of TB as United Kingdom, do not reflect upon TB as a possible diagnose. Patients had to visit their general practice several times before being diagnosed with TB [6]. The same study also showed difficulties making right diagnosis when patients had different symptoms than those mostly associated with TB, such as coughing, which also are in line with a survey conducted in Russia [7]. In this study, fatigue, night sweats and weight loss were the most common symptoms reported. According to Southeast Asia and Africa, this are the two continents with the majority of people infected by TB. By the year of 2016 10.4 million new cases were noted around the world and 1.7 million people died, on the other hand between years 2000-2016 estimates 53 million lives being saved thanks to diagnosis and treatment [1].

Nurses play an important role in the outcome of healthcare to promote health and ease suffering for all people involved and require ability to offer best possible care to all patient. The International Council of Nurses, ICN [8] has stipulated an ethic code which declares guidelines for all nurses to follow. One aspect ICN states is around information, lack of correct information, or ability to offer information gives consequences as social stigma which is highly associated with TB, and why ignorance might lead to social isolation due to fear of transmission [9]. Correct information about symptoms, contagiousness and treatment, stigma can be reduced, a part where the nurse's pedagogical role in treatment is of highest importance, for example patients valued

support given from TB specialist nurses [6]. By creating partnership with the patient [10], the chance of a positive outcome increases. Partnership is an important content in person-centred care which is one of six core competences of healthcare professionals. The other five core competences are teamwork, evidence-based care, knowledge in improvement, safe care and information [11]. In summary, non-adherence, social stigma, poor health and death are consequences of insufficient healthcare. Therefore, it is relevance to explore nurses' experiences regarding caring for people with TB to improve healthcare by decrease infection diseases as TB. The aim of the study was to describe nurse's conceptions of caring for patients suffering from tuberculosis in Indonesia.

Method

Settings

Being a former Dutch colony since the 18th century, Indonesia declared independence in 1949. Indonesia is the world's fourth most populated country, and consists of more than 17000 islands. Therefore, the availability to healthcare is diverse. Moreover, two continental plates meet in this area which makes natural disasters such as earthquakes and eruptions a common issue to manage. Around 10 to 25 percent of the population is living in poverty, why healthcare is an important matter. A new social insurance was introduced in 2014 including free healthcare in Indonesia. The reformation of healthcare system has been made comprising raised compensation for providing healthcare and a higher number of midwives in remote areas resulted in decrease of infant mortality in Indonesia [12]. The life expectancy is plus 20 years compared to 50 years ago, for males it is 67 years and for females 71 years [3].

Healthcare is provided at hospitals as well as health centres and offers a variety of services such as preventive and curative treatment, family planning, childbirth, dental service etc. Wards in hospitals in Indonesia are divided in different levels of comfort, class 3 offers patients shared room with no air condition and the most expensive level is VIP-rooms with facilities equipped with private bathroom, TV and sofa for example. However, treatment and care are the same in all levels [12].

Study approach and design

The study has a qualitative design using a phenomenographic approach. Marton & Booth [13] described phenomenography as suitable when the aim is to describe the qualitatively different ways a group of people make sense of, experience and understand phenomenon in the world around them. The result of the approach consists of the participants individual descriptions of their understanding of the phenomenon under study [14]. In this study the phenomenon under study was caring for patients suffering from tuberculosis.

Table 1: Characterization of the participants.

Characteristic	N = 10
Sex	
Female	7
Male	3
Age	
30-39	5
40-49	2
50-59	3
Education	
Diploma nurse	7
Registered nurse	3
Place of work	
Hospital	8
Health center	2
Median of years working as a nurse	16

Participants

Totally 10 individual interviews with nurses were conducted at three different hospitals and two primary health centers (puskesmas) in a larger city in Indonesia in 2018. Participants in this study were recruited by a contact person at the University, which makes this a convenience sample. An inquiry was sent out to three different hospitals and two health centres, and the first ten nurses that were interested in participation were included due to the inclusion criteria; registered nurse, either with a bachelor in nursing or a diploma in nursing and working experience as a nurse minimum two years. Ten individual interviews with nurses (7 female, 3 male) were conducted with a length of working experience between 8 to 34 years. Characterizations of the participants are described in [Table 1](#).

Data collection

The method of using individual interviews is chosen to enable a variety of individual answers [15]. The interviews were conducted at the participants' workplace in a variety of settings depending on the access to locations. Some took place in a closed room in offices shared with other co-workers or in the waiting area of the health centre. All interviews had translators present, such as a teacher from the University (8), or senior students (2) from the nursing program at the same university. One pilot interview was conducted to test the interview questions and recording device, no changes were made due to the pilot interview. The interviews (n = 10) lasted between 29 and 49 minutes. The main first research question asked in the interview was: Can you please describe your experiences of caring for patients with TB. Two (LB, KV) of the authors took part in all interviews with no specific division of roles. The transcriptions were made individually by the same authors (LB, KV) and then controlled by the other authors (ML, KR).

All the transcriptions combined reached approximately 58 pages.

Data analysis

After transcription of the interviews, the analysis took place in four steps, as described by Alexandersson [16]. Starting with getting to know the material with an overview of all data. This was made by reading all the data several times to get to know the material and establish an overall impression. The second phase was to distinguish similarities and differences in the participants statements of their experiences of caring for patients suffering from tuberculosis. The statements were grouped into descriptive categories. Finally, in the fourth phase the categories and attending sub-categories were organized into a logical structure.

Trustworthiness

In research using a phenomenographic approach, concepts like trustworthiness, reliability and transferability is used to evaluate quality and scientific soundness. The question to be asked is whether the categories and the subcategories presented in the result, really is a reflection of the participants (nurses) statements and not a construction made by the researcher. One way of clarifying how the categories have been identified is by using citations from the interviews [16]. By this kind of transparency, the reader can judge on its own if the assumption is relevant or not and thereby its quality.

Ethical considerations

According to the Declaration of Helsinki [17], voluntarily participation is followed throughout the study. The participants received a written informed consent form with information about the aim of the study, that participation is voluntarily and that withdrawal is possible at all time without further explanation. The form also granted anonymity. All signed and handed in a consent form.

Findings

The data analysis results in three categories; "The conceptions of tuberculosis as a contagious disease", "The conceptions of the nurse's role" and "The conceptions of the patient's situation", with attendant seven subcategories ([Table 2](#)).

Category: The conceptions of tuberculosis as a contagious disease

The conceptions of TB as a contagious disease is described as the importance of universal precautions as proper protecting clothing as well as follow the basic hygiene routines for all healthcare professionals. The fact that TB is a contagious disease is a recurring subject in the statements. The participants conceptions are showed in the following categories; "Precautions and

Table 2: Presentation of the categories and subcategories.

Categories	Subcategories
The conceptions of tuberculosis as a contagious disease	Precautions and protection are important Reduction of transmission within the family
The conceptions of the nurse's role	The nurse as an educator The nurse as a motivator
The conceptions of the patient's situation	Social stigma related to wearing the mask Social consequences for the patient Socioeconomic factors related to compliance

protection are important” and “Reduction of transmission within the family”.

Sub-category: Precautions and protection are important

The subcategory includes conceptions about the importance of precautions and protection. The statements show that some participants are afraid of transmission of TB, while some talking in terms of reducing the risk of transmission in general. Others seem to have a fear of catching the disease themselves, to get infected, one participant puts it like this:

Be careful! Be careful! Because it's an infectious disease. I use 95 masker and then washing hands before we touch and after. (...) We have to have a very complete universal precautions including mask, special mask for TB patients. And then cape, like hat and special coat. (Participant 1)

The statement above is described by a participant working in a ward not specialized in TB or other airborne diseases. Compared to a specialized ward, general ward does not have all the same technical equipment, for example to clear the air. Moreover, routines are not so well implemented due to caring for patients with TB when caring is not performed on daily basis. The differences of working in a specialized ward are demonstrated in the following statement:

And I feel happy and more secure working in this ward. Because any patient that complaining about coughing will be suspected TB and the universal precaution that we wear is very complete. Compare to the other ward for instance, they suspect the patients as lung cancer but eventually the patient is a TB-patient and they don't know where or not been precautions. So, I feel happy and more secure here. (Participant 2)

When patients are diagnosed with TB, routines regarding precautions will be performed. By doing so, participants describe that they are secured in the sense that they won't be transmitted by the disease. One participant highlighting the universal precautions, not in relation to her own fear, but in relation to the patient. The participants worry toward the patient not being able to give care to patients when they need it, i.e. delay in nursing due to precautional procedures.

Because this is a special ward different from the other ward. The universal precaution of this ward is very important. So, it's very challenging for me you know to taking care of patients in this ward. For instance, if the patient needs a help, I can't come directly to the patient because I have to wear a very complete precaution and it takes time. (Participant 3)

Sub-category: Reduction of transmission within the family

The subcategory “reduction of transmission within the family” focusing on inpatient wards where family members in some way considered to be an issue. The regulation of visiting hours is not followed and why nurses are worried of transmission of the infection due to close relationship. The statement below shows difficulties to educate patient and the family about the contagious disease and how to use universal precaution.

...only one family member can stay around the clock but then still there are so many family members that accompany the patient in the room. (...) there will be a lot of visitor to come. Even though the nurses and also the regulation of the hospital has been declared that they cannot do that. (Participant 2)

In addition, statement below is showing that the family needs to be close to the patient even though he or she is having a contagious disease, as a part of the culture. One example is that relatives still hug and kiss their family member in order to show respect:

Because Indonesian people they really respect the family they will care for the family even though the family is sick.” (Participant 3)

Therefore, participants investigate if the patient with TB has spread the disease further to family members.

So, nurses also play an important role in case tracing, for instance in one family the patient is the father so we have to also have to examination of the family member in one house for instance the children or the wife. So, they will do the medication together. (...) They will also check the baby under five if there is one in their home. (Participant 10)

Category: The conceptions of the nurse's role

The conceptions of the nurse's roles are stressed as an educator and motivator for patients with TB. Participants describe that motivation to medical compliance and education about the universal precautions are of highest value. Moreover, they also highlight need for increased motivation by giving repeated information and by emphasizing the consequences of non-compliance due to treatment of TB and why relationship is needed.

Sub-category: The nurse as an educator

The statements indicate that the most important thing is to educate about precautions in order to avoid transmission of the disease. Another participant thinks education regarding the treatment to obtain medical compliance is the most important thing. The majority of the participants said that it's the nurse's role to educate about the medications and their side-effects. The participants describe the use of methods such as repeating, explaining and reminding the patient about important information:

Every time the patient hospitalized in this ward, they will be given information regarding how to cough in a good way and wearing the mask. And the other thing is to wash the hand after coughing. And every time they will be remind about this, regarding this. (Participant 2)

One participant describes that she uses posters and images to make information easier to understand. The education is given to the patients as well as to their families. According to DOT, other health-care professionals are educated in the hospital. The participants state that they educate patient about improvements that can be done in their home environment to reduce transmission. The statement below shows how participants educate patients how to manage their work situation when they have a contagious disease as TB. For example, the significant of wearing mask during the first phase of the treatment, otherwise patient are recommended not to work at all.

...the patient, some of them, are teacher and will teach like elementary students so I will really encourage the teacher to wearing the mask. Unless the children and the students can get infected by the TB. Or I will recommend the teacher to stop being a teacher. (Participant 2)

The participants highlight the significant of informing and educating patients about the fact that TB, in contradiction to many other diseases, is curable. They highlight that TB can be effectively cured when medical treatment is followed and finished, and why they stress the meaning of motivation work to fight non-compliance due to treatment for TB.

Sub-category: The nurse as a motivator

The nurse's role as a motivator to the patient with TB is describe by the participants in the statements as the significance of the relationship between the nurse and the patient. The participants explain that information is a contributing factor to higher motivation among the patients. The statement below shows that even though the proper information has been given repeatedly to the patient, they don't always comply. This is described as a challenge that calls for the skill of motivation.

But when they come in the Puskesmas (health centres) and saw the staff they put the mask on as soon as possible. But when they are in the house, they didn't use the mask. Something like this makes the caring of TB patients challenging. To control the patient when they are in the house is the challenge. (Participant 6)

The statement below shows that the relationship between the nurse and the patient is important when it comes to motivation. The importance of the nurse's role, being the closest link to the patient is also stated. If the patient misses an appointment or decides to drop of the treatment plan, several participants describe that they will try to contact the patient to motivate them to continue the treatment.

The nurses will give motivation to the patient, then give a support. Then make sure that "I am your friend". Yeah. So, the patient can tell all the complications, yeah. Give a support, give a motivation and as a friend. And also, I give an education about TB to the patient and to the family and then I give a spirit (...) a support! (Participant 7)

On the subject of how to motivate patients to follow the treatment plan, statements show that frightening is a method that is used. To frighten the patients of difficulties and severe consequences with non-compliance often results in increased compliance regarding treatment.

So, I will give an education, in somehow in a frightening way (laughter). So, I will, uhm, talk to the patient about any consequence IF the patient does not comply to the treatment plan the patient got, the injection every day or any frightening situation regarding the compliance. (Participant 5)

Category: The conceptions of the patient's situation

The conceptions of the patient's situation showing that social stigma is associated with TB. Stigma increase negative consequences for the patients due to treatment and well-being. Moreover, patients' level of education and income are also factors related to degree of compliance to treatment. Participants conceptions are showed in the following categories: "Social stigma related to wearing the mask", "Social consequences for the

patient” and “Socioeconomic factors related to compliance”.

Sub-category: Social stigma related to wearing the mask

The subcategory social stigma related to wearing the mask reveal how the mask is considered as contributing cause of stigmatization which makes patient’s unwilling to wear it. The mask is described by the participants as a sign of TB, a reminder of the contagious dimension of the disease. The statement below shows that patients are afraid of being isolated if they wear a mask because of the negative stigma.

...the stigma is still negative as well for TB-patients, that’s why the patient wouldn’t like to wearing the mask for a very long time. Because they feel, uhm they feel alone. They feel that wearing the mask many people just get away from them. (Participant 2)

Next statement describes the difficulty of wearing a mask when patient’s been diagnosed with TB because of shame of the disease. Patients sometimes try to hide it for their family by not using the mask at home:

...and the other is they feel shame; they feel shame when they use mask when they are at home. Because there is bad image for the patient, for the TB-patient. (Participant 6)

Participants stress that the mask is one cause of social stigma with negative consequences demonstrated by one participant when speaking of TB-patients in different occupations:

...most of the TB-patient they are food-staller, so they sell some food in the street. So, for them it is very hard if they are wearing the mask because somehow TB has a negative stigma. So, it is embarrassing if noticed as TB-patient. (Participant 9)

Sub-category: Social consequences for the patient

The category social consequences for the patient is describes that social stigma is a problematic aspect for patients with TB. The word disgusting was used to describe the general conception of TB. To cope with this, patients are unwilling to receive the treatment at the nearest health centre, a way of hiding the disease to the nearest surrounding. Participants described that patients rather travel further away from home to receive the treatment which also could be a barrier due to compliance.

You know sometimes the TB-patients they are refused to be cured or treated in the nearest health centre. For instance, if the patient living in Gunung Kidul the nurses here will refer them to have the medication in the nearest public health center. But they refuse it because they somehow, they feel embarrassed regarding the disease. (Participant 9)

Another participant is also describing the social stigma of the disease and how it is leading to the phenomenon “doctor-shopping”. According to the social stigma, some patients refuse to believe that the diagnosis they’ve been given is correct, and why patient’s consult different physicians to be re-diagnosed. Therefore, participants highlight their role to improve patient’s social situation by trustful relationship. They stress that high quality of care improve compliance among patients, not only by frightening patients regarding negative consequences. One participant describing this method to be very efficient but is at the same time worried about its consequences:

...somehow the way we educate the patient like frighten the patient. Frighten the visitors that if you be contaminated you get TB if you still have contact with the patient. It’s somehow, I realize that in somehow, we have to eliminate the stigma of TB-patient but then you say some words that frighten the visitors also (...) So up to now there is no complaining from the patient regarding social isolation, it’s just my worry. (Informant 4)

The statement above describes frightening as a way of emphasizing the negative consequences of non-compliance to the treatment plan. This content also indicates an awareness that it might be leading to reproduction of social stigma. The emphasis of the consequences puts light on the dangerous and contagious aspects of the disease. This conception stands in contrast to the statement of other participants who argued that emphasize lays on the fact that TB is curable.

According to participants, the family could also cause social isolation. Although participants had informed and educated family members about reduction of transmission, the precautions are not followed, and why social isolation occur in some cases. They stress that education and information is not always enough to avoid negative social consequences for the patient.

Yeah, the most difficulty for the patient is regarding the stigma. In the social stigma. Because actually the nurses here they taught the patient how to minimize the spread of the disease. But most of the time, the family and the patient they kind of isolate the patient at home. Okay, so they kind of being isolated from the community and it is very hard for the patient. (Informant 8)

Moreover, social isolation is also described as a result of the patient’s own fear and worries. Participants experiences of TB-patients show insecurity regarding the contagiousness and why the consumption is made that those patients lose self-confidence and will be less willing to be socialized with other people.

Sub-category: Socioeconomic factors related to compliance

The subcategory socioeconomic factors related to compliance reveal diversity in the conception of the patients' socioeconomic status as a determinant of compliance and outcome of the treatment. Some participants are mentioning that even though the medication is free of charge for the patients there might still be economic burdens complicating compliance to the treatment. For example, transportations for the entire family (patient included) are cost to be paid by the patient. Other aspects are contrary describing financial issues, however insurance cover when it comes to TB treatment and compliance.

So as long as the patient has an insurance financially will not be a burden for the patient because TB medication is covered by the insurance. (Participant 4)

In addition, participants describe that low compliance to medical treatment depends on the patient level of education. Those with low education and low income are described with non-compliance, often terminate medical treatment in advance. The reason for this is explained as a result of patient's feeling of getting better after some treatment and quite the treatment plan due to feeling of no longer being in need of healthcare. Participants described that patient with higher level of education book appointment with a participant for consultation instead of terminating the medical treatment:

...a patient with good educational background they will look for some more information themselves (...). For instance complain any symptom they will go directly to the nurses. Most of the time they will more comply to the nurse's instruction. But then for the low-income patient, because you know most of the time TB-medication after two months the bad symptoms will reduce and the good one will improve and many of the patients, because they already feel better with their condition they will not come again to the hospital. (Participant 9)

The conception above is shared with one participant working in a VIP-ward. The statement highlight that rich patients will hire a private caregiver which improves the compliance and eases the way to healthiness, a strategy out of reach for the patients without economic resources.

Discussion

The result will be discussed in accordance with the three categories and their attendant subcategories previously presented that answer the aim of the study, to describe nurse's conceptions of caring for patients suffering from tuberculosis in Indonesia. The most striking result in this study is the nurse's role as an educator and the challenges related to education. Even though they provide the patients with all information needed regarding disease, treatment and precautions, described compliance is still low. In relation to limited relationship to the patient highlighted in the results, person-centred

care built upon partnership could be improved by teamwork towards a mutual care plan among all involved as staff, patient and relative [10,18].

The conceptions of tuberculosis as a contagious disease, precautions and protection are stressed as significant to decrease infections for both staff as well as relatives, though TB is highly associated with contagiousness and thereby fear of it. The result also show that precautions make nurses feel secure, in line with patient's safety [1,3]. When it comes to the care of patients with a contagious disease as TB, patient safety is a crucial nursing competence to fulfil to ensure health professionals [19] as well as family members safety to perform and support nursing and caring in the best possible way. By following WHO [1] guidelines for TB infection control in healthcare facilities, health professionals use respirator-masks in certain situations due to high risk of transmission, such as sputum as well as caring for patients with multi drug resistant TB, MDR-TB. Improvement to increase knowledge regarding patient safety in relation to TB is needed to decrease stigma in society, starting with health professionals and their routines within healthcare settings. It is significant to improve relationship [20] and using mask only when it is necessary due to transmission. Staff afraid of being infected is in line with a study from Ghana. Healthcare workers avoidance of close contact increase mistreatment of patients with TB [21]. However, present study show that nurses didn't avoid contact, for example if a patient missed an appointment or didn't comply with the treatment, nurses contact patients and relatives to motivate to follow the treatment plan.

For nurses working at in-patients' wards, challenge is described as motivate the family to follow the visiting regulation. A conflict of interest occurs between the aim to reduce transmission and the cultural practice of staying close to one's family members though emotional support from the family is vital for patient's well-being and recovery [9]. Therefore, it is significant to include the family in the care without risking transmission, a challenging task for nurses to fulfil by educate the whole family (patient included). By using Blooms taxonomy [22,23] due to cognitive (knowledge-what), affective (emotional-charactering) and psychomotor (action-how) as well as learning by doing [24], nurses educational role could be visible and then easier for nurses to manage due to their nursing competences and experience in nursing. Conclusion is that nurse's educational role is significant to patient safety due to decrease transmission, and why nursing education need to focusing on educational skills before graduation as well as the employer (hospital, health clinics) highlight these skills and support them in everyday nursing practice. Therefore, nursing leadership performed by first line managers at the ward level is significant to manage and support nurse's professional development [25-27].

Instead of repetitive information to the patients, a

comprehensible education to patients requires pedagogical skills. For example, nurses try to motivate the patients by making them understand that TB is curable [28], this could be hard to accept when around 1.7 million people die every year because of TB [1,3]. Without belief that medication will work, motivation is harder to achieve. Therefore, the importance of educating people that TB is curable as well as how to protect transmission.

In addition, research show that contributing factors due to low rate of cured TB in municipality care were that the patients didn't realize the consequences of the disease and why patients stopped their medication plan as soon as they felt healthy again [29]. Therefore, nurses used frightening as a method to contribute to a higher level of compliance related to awareness, instead of achieve motivation through pedagogical skills grounded in relationship between the nurse and patient [24,30].

Moreover, social stigma related to TB is still a problem and has been described in other studies [31,32] and why wearing a mask showed negative consequences such as social isolation, difficulty continuing working and the feeling of shame. Furthermore, socioeconomic factors related to compliance showing that even though the treatment itself is free of charge there is other economic burdens for the family [7,28]. The patients in Vietnam and Russia highlight economic factors as obstacles for compliance in TB-care, for example transportation to healthcare facility for family members.

Another perspective was that patients with low educational background were described as "stubborn" people who didn't follow nurses' instructions. Research [33] that stress that patients (from Pakistan) with low educational background have satisfied knowledge about TB, and why the reasons to non-compliance to treatment were related to psycho-social- and economic distress, not lack of knowledge. However, the opposite was shown in rural area in China that insufficient knowledge about TB and the transmission lead to low compliance [34]. Therefore, nurses need to build relationship to patient to individualize her patient education to improve patient safety due to patient's socioeconomic situation. Moreover, the term compliance is in itself problematic since it put patient in a position as a follower to directions made by someone else, instead making patient participate in healthcare and treatment is an implication for nursing practice.

Methodological considerations

In this qualitative study, ten interviews were conducted with nurses in Indonesia to describe conceptions of caring for patients suffering from tuberculosis. The number of interviews can be criticized (n = 10), however, phenomenographical studies with few participants (10-12) are considered as enough to capture a variety of conceptions [16]. The informants were chosen out of

convenience sampling, since it wasn't made by the researchers themselves, instead a contact person at the University did it to achieve a variety of conceptions due to personal experiences.

The process of analysing data took place in four steps, as described by Alexandersson [16]. All authors have been involved in the analysis which increases the reliability [15]. The analysis included reading transcriptions to getting to know data finding similarities and differences. From that stage, categories and subcategories were made out of prominent subjects from the interviews.

A strength of the study is the variety of healthcare settings that the result is based on, giving a range of significant aspects of nursing. Nurses were recruited from urban and rural areas of Yogyakarta in Indonesia. An addition to this variety, interviews was conducted in hospitals and primary health centers, and why perspectives from different levels of the healthcare chain were available. Moreover, a socioeconomic perspective was visible though participants from both VIP-wards as well as third class-wards were included represented of female and male nurses with diversity in age gain transferability. In addition, presenting each category with citations from participants could be described as reliability with the results [15].

The character of the interview situation is of high importance in the outcome of the interview. A critique is that the interviews were held together with translator (teachers, senior nursing students) or other involved (staff, managers) which could influence the data collection regarding performed conversation. Even though the interview lasted for the same amount of time as previous interviews, the transcription was shorter, which indicates that all participant's experiences were not translated. Therefore, language barrier is a limitation to take into consideration due to deeper conversation as well as misunderstandings. Another contributing cause is interruption in one way or another, especially when authors are new beginners regarding data collection [15].

Conclusion

This study has provided a wide range of conceptions from nurses with experiences of caring for patients diagnosed with tuberculosis (TB). Precautions and protection of transmission remains the most prominent aspect of caring for patients diagnosed with TB, a contagious disease. However, knowledge and prevention could decrease number of patients with TB, and why nurses play a significant role as educators to motivate and support for patients and their families due to health and well-being by using person-centred care. In addition, to fulfil this vision, nurses need increase competence in patient education to individualize and motivate people regardless of level of education and/or socioeconomic situations. Even though a more or less all citizens in Indonesia are covered by medical insurance, nurses need

to be aware that economic factors is barriers to be considered regarding treatment plans. The results show that TB is a complex disease due to contagiousness and social stigma as well as extensive medical treatment with severe side-effects for example increase of MDR-TB, therefore further research is needed.

Conflict of Interest

No conflict of interest has been declared by the authors.

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Authorship

All authors contributed to the design, interpreted the data, and critically drafted and revised the article for important intellectual content. All the authors read and agreed to the final version of the article.

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