Nutritional Status, Family Support and Dietary Habit among Tuberculosis Patients: An Overview

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Abstract

Objectives: This research aimed at identifying Nutritional Status, Family Support and Dietary Habit among Tuberculosis Patients

Method: A cross-sectional study was set up as a method. In selecting the subjects, purposive sampling was used by referring to the set inclusive criterion, which was that the patients were in the intensive phase. To end up, as many as 38 patients diagnosed with tuberculosis were recruited as the respondents. Chi-square test was used for data analysis of this current research.

Results: The majority of the respondents were reportedly equipped with abnormal nutritional status by signifying 52.6%. Meanwhile, the rest 18 participants, signifying 47.4%, had shown normal nutritional status. More than half of the whole respondents (52.6%) had normal nutritional status, while the rest (47.4%) of whom showed abnormal condition. Both of the groups of respondents, with regular and abnormal nutritional statuses, received poor familial support, with 61.1% (11 respondents) in the former and 60% (12 respondents) in the latter.

Conclusion: More than half of the whole respondents had normal nutritional status. More than half of the respondents with good dietary habit had normal nutritional status. Both of the groups of respondents, with regular and abnormal nutritional statuses, received poor familial support

Keywords: *Nutritional status, tuberculosis, Community Health Center.*

Introduction

According to the Information Centre of the University of Stellenbosch, tuberculosis (TB) is named as "The Mother of Diseases" and constitutes infectious disease just like fire. TB is closely interconnected with poverty, population density, alcoholism, stress, narcotics addiction, and malnutrition. Besides, this kind of disease can quickly spread over in some conditions, such as in a dense population, in a space with a weak ventilation system, and amid malnutrition community. That is the reason why TB is known as a poverty disease (1). Less nutrition consumption on TB patients can be triggered by some factors, such as 1) economy, where the patients are categorized under the poverty line by not having access to health service, having lack of healthy food supply, and not having an easy access to medication service. These effects lead to some consequences, such as disability and long-termed disease; 2) comorbidities, in which those (TB patients) with HIV or diabetes mellitus have shown lower level of BMI (Body Mass Index) than those without both diseases. Indeed, TB can accelerate the HIV infection; 3) food consumed; 4) acquaintance; 5) patient's behaviour upon food and health; and 6) the length of sufferance from Pulmonary TB[(2-5)].

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Alluding to a study from Bhargava (2013), it was reported that nutritional status on diagnosing and TB therapeutics completion could lead to death occurrence ([6]). There were 1.179 adult patients found to suffer from pulmonary TB in some rural areas in India during 2004 – 2009. The average BMI and bodyweight of theirs successively constituted 16.0 kg/m^2 and 42.1 kg on males and 15.0 kg/m^2 and 34.1 kg on females. The finding had indicated that 80% of the females and 67% of the males suffered from moderate to a substantial level of malnutrition (with BMI < 17.0 kg/m2). Also, 52% of the patients (57% males and 48% females) were suffering from stunting and showing less chronically nutrition. Half of the females and one-third of the males were identified stagnant on low body weight in the final session of medication. Further, 60 deaths were occurring amid 1.179 patients (only 5%) in the early medication stage. Holistically, the majority of the patients were reported to suffer from chronicle malnutrition in diagnose stage, which lasted after successful medication on significant proportion.

Another research was brought up by Dodor (2008), aiming at evaluating the nutritional status of TB patients after the first diagnose without any receival of medication. The result had shown that the average BMI constituted 18.7 kg/m^2, in which as many as 51% of TB patients were diagnosed to suffer from malnutrition – with 24% of whom suffering from venial malnutrition, 12% moderate, and 15% heavy. Two months after the first treatment, the average BMI signified 19.5 kg/ m2, in which the number of the patients with malnutrition inclined to 40% –with 21% of whom suffering from venial malnutrition, 11% moderate, and 8% heavy. In the study, it mentioned that how nutritional status was meaningfully correlated to merit of age, marital status, occupation (monthly income), educational background, personal belief for specific food avoidance, and family in the first TB treatment. This finding also highlighted the importance of nutritional support during TB treatment in addition to other merits mentioned. For that reason, this current research aimed at investigating some factors that affect the nutritional status of TB patients in an attempt to incline the dissemination and infection of TB[(7)]. To sum up, identifying the nutritional status and factors corresponding to the improvement of nutritional status on tuberculosis patients is set up as the most ultimate goal of the research.

Material and Method

Research Design: This research applies a cross-sectional design.

Sampling Technique: This research was administered at around the working scope of Community Health Service in Ciptomulyo to recruit the respondents, purposive sampling technique was used. Further, there was an inclusive criterion defined for the respondent selection. Thus, the TB patients who had been in the intensive phase were voluntarily chosen as the respondents. In the end, there were 38 TB patients involved.

Research Instrument: The research instruments consisted of anthropometry measurement (body weight and height) and questionnaire. The former was used to examine the nutritional status of TB patients, while the latter comprised demographical data, dietary habit, and familial support. The questionnaire regarding dietary habit was developed by the researchers. Moreover, the one with the respect of familial support was adopted from a study brought up by Melizza (2017)[8] with the reliability of $\alpha = 0.96$. Further, the familial support questionnaire consisted of 32 questions packed in the form of Likert scale, with the indicator of "Always = 5", "Frequently = 4", "Sometimes = 3", "Seldom = 2", and "Never = 1" (8).

Data Collection: After Community Health Service of Ciptomulyo conferred approval, an inform consent was given to ask for research approval. After the respondents agreed, the questionnaire was self-administered for 30-40 minutes.

Data Analysis: Chi-Square was set up for data analysis as this research aimed at investigating the correlational relationship between variables through the degree of reliability of 95%, in which $\alpha = 0.05$ – meaning that $p < 0.05$ according to computerization assistance through SPSS (Statistic Product for the Social Science).

Results

The Demographical Data of TB Patients: In general, the data consisted of gender, age, the background of education, occupation, and monthly income of TB patients.

Table 1: The distribution of respondents with TB regarding gender, age, background of education, occupation, monthly income, and marital status

Characteristics	n (38)	% (100)	Min	Max	Mean
Gender:					
Female	18	47.4		-	
Male	20	52.6			
Age:					
Late teenager (17-25 years old)	8	21.1	17	74	44.84
Early adult (26-35 years old)	3	7.9			
Late adult (36-45 years old)	7	18.4			
Early elderly (46-55 years old)	11	28.9			
Late elderly (56-65 years old)	4	10.5			
Old men/women (>65 years old)	5	13.2			
Background of Education:					
Elementary School	9	23.7		-	
Junior High School	19	50			
Senior High School	9	23.7			
Higher Education	1	2.6			
Occupation:					
Housewife	11	28.9		-	
Private employee	15	39.5			
Unemployed	11	28.9			
Entrepreneur	1	2,6			
Income/Revenue:					
<2 million/month	37	97.4		-	
2-5 million/month	1	2.6			
Marital Status:					
Married	35	92.1		-	
Widow	1	2.6			
Unmarried	2	5.3			

Table 1 showed that male respondents outnumbered their counterparts, constituting 52.6%; with 28.9% of whom were those grouped into early elderly category (46-55 years old). Moreover, half of the entire respondents (50%) were from Junior High School background, named the most dominant. Meanwhile, only one respondent (2.6%) was from Higher Education level, labeled the most inferior. In terms of occupation, housewife and unemployed categories had shown the same result in number (28.9%). Further, private employee category had the highest number (39.5%), whilst entrepreneur one showed the lowest (2.6%). Those from the private employee category gained revenue of more than 2 million/month (97.4%), addressed as the highest. Meanwhile, only one respondent (2.6%) had increased 2-5 million/month in the entrepreneur category. Based on marital status, married group (92.1%) showed the highest number among its counterparts, successively followed by the group of unmarried (5.3%) and widow (2.6%).

Nutritional Status:

Table 2: The distribution of respondents with TB based on nutritional status

Nutritional Status	Number of Respondents	
	n (38)	% (100)
Normal	18	47.4
Abnormal	20	52.6

According to Table 2 above, more than half of the whole respondents (52.6%) had normal nutritional status, while the rest (47.4%) of whom showed abnormal condition.

Dietary Habit:

Table 3: The distribution of respondents with TB based on dietary habit

Dietary Habit Status	Number of Respondents	
	n (38)	% (100)
Good	19	50
Poor	19	50

Table 3 showed that an equal number of respondents, between those having a good dietary habit and those with a poor one.

A Cross Tabulation Between Nutritional Status and Dietary Habit:

Table 4: The cross-tabulation between nutritional status and dietary habit of patients with TB

Nutritional Status	Dietary Habit			
	Good		Poor	
	n (38)	% (100)	n (38)	% (100)
Normal	11	61.1	7	38.9
Abnormal	8	40	12	60

According to the table 4, it is evident that 61.1% of the respondents with good dietary habit had normal nutritional status. Meanwhile, 60% of the respondents with poor dietary habit had shown abnormal nutritional status.

A Cross Tabulation between Nutritional Status and Familial Support

Table 5: The cross tabulation between nutritional status and familial support for the patients with TB

Nutritional Status	Familial Support			
	Good		Poor	
	n (38)	% (100)	n (38)	% (100)
Normal	7	38,9	11	61,1
Abnormal	8	40	12	60

Table 5 illustrated that both of the groups of respondents, with regular and abnormal nutritional statuses, received poor familial support, with 61.1% (11 respondents) in the former and 60% (12 respondents) in the latter.

Discussion

Based on the finding, half of the entire participants were equipped with abnormal nutritional status. It was probably due to insufficient revenue gained by the majority of the respondents in each month. This statement was in line with a study from Puspitasari (2017), reporting that around 43% of patients with TB in Mojokerto, East Java had poor nutritional status([9]). Furthermore, Dargie, et al. (2016) also stated that the prevalence of undernutrition was found to be 39.7%([10]).

This research proved that more than half of the respondents with good dietary habit had normal nutritional status. In the same study, Dargie (2016) explained that patients with a high level of eating frequency without any counseling guidance about eating were more potential to undergo under nutritious condition than those who received the counseling. The mechanism occurred due to the fact that those knowledgeable about diet would be able to apply the suggestion for sufficient and nutritious consumption of food(10). In addition, nutritional counseling was appropriate to be given to patients with TB in addition to nutritional support for severe under nutrition, and the nutritional examination on patients with TB had to be set periodically([11])2016. Results: This study revealed that about one-fifth of TB patients did not consume sufficient amount of calories as per RDA. More than one-third of patients were underweight during the time of registration and this is reduced to 21.8 percent in the present situation. Mean BMI was 20.99 kg/m2 (SD ± 5.81. Reportedly, the finding was different from Mardalena (2017), who stated that the quality of human's nutritional status was dependent on two matters, food consumed and body health or infection status([12]).

The study reported that that both of the groups of respondents, with regular and abnormal nutritional statuses, received poor familial support. In addition, good and sufficient familial support and attention had been considered as primary needs the patients could live their routines, such as monopoly assistance, emotional support, moral support, and motivational support for the sake of immediate recovery for patients with TB([13]). In addition, another research of Puspitasari, et al. (2017) had demonstrated that high familial support was adequate to affect the nutritional status of patients with TB (with p= 0,010). Further, more irrelevant result than that of prior research could be connected with demographical data, which was assumed contributive to the research. Also, the dominance of male respondents was also seen as a possible factor([9]). In Bhargava's study (2013), it was stated that male patients more frequently suffered from death occurrence during medication on

TB disease due to a low level of BMI than female ones – for the females were proved more adaptable to hunger than the males([6]). Moreover, Dodor (2008), as cited in Melizza (2017), had claimed that nutritional status could be significantly interrelated to marital status, monthly revenue, educational background, belief on specific food avoidance, occupation, age, and family size during TB medication(8). Family support could improve status nutritional among tuberculosis patient([14]).

Conclusion

More than half of the whole respondents had normal nutritional status. More than half of the respondents with good dietary habit had normal nutritional status. Both of the groups of respondents, with regular and abnormal nutritional statuses, received poor familial support

Recommendations: Further research should consider about the clasification of the responden characteristic such as age, education. This characteristic could be related to the nutritional status among Tuberculosis patient.

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