Compliance of Mothers to Treatment of Children with Primary Complex (PTB) in the Selected Municipalities in the 1st District of Ilocos Sur

Fe R. Rodillas, Lorena T. Darisan, Romelia P. Tamayo, Evelyn A. Rafanan

Abstract—This study determined the level of compliance of mothers to treatment of children with primary complex (TB) in the selected municipalities in the 1st district of Ilocos Sur. It looked into the relationship between the level of knowledge on PTB and profile of the respondents, and the relationship between the extent of compliance and treatment outcomes.The study employed the descriptive-correlational type of research and considered the total number of mothers with children suffering from the primary complex as the respondents. A questionnaire-checklist was used to gather data coupled with records review. The statistical tools used to analyze and interpret the data were frequency, percentage, mean, and simple linear correlation analysis.Based on the results, the following conclusions were drawn: (1).The mother respondents' are with very high knowledge about Primary Complex., (2). Mother respondents are highly compliant with the treatment of their children and (3). Almost all of the children with primary Complex completed their treatment within the prescribed time of 6 months. (4). Mother respondents' have a "Very High" extent of compliance to treatment, (5). Almost all of the children with primary complex completed their treatment, (6). The level of knowledge of the mother respondents is related to their educational attainment and monthly income, (7). Socio-demographic profile of the mother respondents is not associated with the extent of their compliance to treatment and (8).The extent of compliance to treatment and the level of knowledge of the mother respondents have a positive relationship on the disease process. The following recommendations were forwarded: 1). Parents should continuously update themselves about the disease through media like television, reading newspapers , listening to radio, attend seminars or health education provided by health workers; (2) The extent of compliance of mothers be maintained by religiously getting the medications and comply with treatment for their children without failure (3) Parents help their children to maintain their health by providing nutritious food; (4) mothers may bring their children at the Municipal Health Office for follow-up after completing the treatment; (5) Department of Health can strengthen their commitment to support MHOs by giving free supply of medicines and assist recipients in improving compliance to achieve healthy citizenry; and (6) MHO's may include topics about the disease during their health education dissemination activities.

Keyword: Municipal Health Office, Level of Knowledge, Outcome of Treatment

INTRODUCTION

Nowadays, everyone is conscious of his/her health. A lot of diseases emerged in the environment which can be considered communicable or non-communicable. Parents most especially the mothers play vital parts in the promotion of health and prevention of illnesses particularly to their children, a great role that nobody can question. Children are one of the most vulnerable groups for the transfer of viruses, bacteria and the like. One of which is primary complex or primary tuberculosis in children.

Tuberculosis is a bacterial disease that may affect various organs of the body, and the causative bacteria mainly affects the lungs. Tuberculosis develops slowly; if left untreated, it can be fatal as well as highly communicable. TB often occurs in children of underdeveloped and developing countries like in the Philippines and is considered as the world's deadliest disease. It is primarily a respiratory disease but can also affect other organs of the body and is common among malnourished individuals living in crowded areas (Cuevas, Reyale, Earnshaw, Bonito, Sitoco, Serafica, 2007).

According to WHO, the burden of Tuberculosis (TB) worldwide remains a serious concern with estimated 8.7 million new cases (13% co-infected with HIV) and 1.4 million deaths due to TB (430,000 in HIV-infected individuals) in 2011. Despite advances in medicine, the country continues to be with high cases of TB if to be compared with other countries in the world. Dr. Cleotilde Hidalgo How, a member of the Philippine Coalition against Tuberculosis said that 26,000 cases of TB were screened in 2010, more than half were kids (14, 527). Although TB in children is not infectious, they can be future adult cases of TB when not diagnosed or treated early. She further stressed that prevention is the key to addressing this problem. Children should not be isolated from their parents who are suspected of TB. The most important thing to do is to treat the adults/parents who have the disease. There is a need to identify those children who are afflicted with the disease and to be cured, nor promote good nutrition, conducive household environment and accessibility of health facilities. She further stressed that parents should let their children be vaccinated with Bacille Calmette Guerin (BCG) to minimize the risk of contracting TB (https://www.rappler.com/move-ph/87809-tuberculosis-deadliest-treatable-diseases-philippines, 2015).

Globally, TB is the ninth leading cause of death worldwide and the leading cause of a single infectious agent, ranking above HIV/AIDS. An estimated 10.4 million people fell ill with TB in 2016: 90% were adults, 65% were male, 10% were people living with HIV(74%in Africa) and 56% were in five countries: India, Indonesia, China, the Philippines and Pakistan. In 2016, there were an estimated 1.3 million TB deaths among HIV-negative people (down from 1.7 million in 2000) and an additional 374 000 deaths among HIV-positive people. (http://www.who.int/gho/tb/en/).

In the Philippines, TB is a major health problem. It is the sixth leading cause of death and illness. In 2011, WHO estimates there are 260 000 incident cases in the country, and 28 000 die in a year. TB prevalence is high among the high-risk groups such as the elderly, urban poor, smokers and those with compromised immune systems such as people living with HIV, malnutrition and diabetes. The 2010 – 2016 Philippine Plan of Action to Control TB provides the road map to achieve the goal of halving the TB mortality and prevalence by 2015. (http://www.wpro.who.int/philippines/areas/communicable_diseases/tb/story_continuation_tb_area_page/en/

Based on the records of the Provincial Health Office of Ilocos Sur in the year 2015, the Tuberculosis Program recorded that there were 472 cases of tuberculosis in all forms aged 0-14 years old broke down as follows: new cases 469 and three relapsing cases. In the year 2016, there were 653 all new and relapse TB cases in all forms by age and sex broken down as follows: new cases 647, and 6 for the relapsing cases aged 0-14 years old and in 2017, a total of 632 all new and relapse TB in all forms by age and sex broke down as follow: new cases, 625 and 7 for the relapsing cases aged 0-14 years old.

To eliminate tuberculosis, the organism must be prevented from being transmitted from one person to another. Preventive therapy consists of the following: 1) find all persons who are afflicted with tuberculosis and have a sufficient treatment, 2) identify persons who should be given treatment and getting them under adequate treatment and, 3) locate persons who have tuberculosis in the past who did not receive adequate treatment (Ancheta, 2010).

Compliance to TB treatment continues to be one of the major obstacles that TB control programs worldwide have to deal with, especially in developing countries. Non-compliance can result in acquired drug resistance, which requires a prolonged period of treatment with more expensive medicines than treatment for drug-susceptible TB. Treatment with second-line medicines is likely to be less successful than treatment with first-line drugs, mainly because the second-line medicines are less potent and more toxic, with an extensive treatment period that makes it more difficult for patients to complete the treatment (http://uir.unisa.ac.za/bitstream/handle/10500/4778/dissertation_chani_k.pdf?sequence=1).

While effective anti-TB drugs are available in the country, there are still many TB patients who are not cured. This is due to many patients who stop taking or irregularly take their drugs. The long duration of treatment, six months on the average, make it most likely for patients to be remiss in drug intake. Treatment compliance is necessary to cure TB and avoid drug resistance. Poor treatment compliance may lead to the following outcomes: chronic infectious illness, death or drug resistance. Second-line anti-TB drugs for drug-resistant cases are very costly, and most are not available in the country. The best way to prevent the occurrence of drug resistance is through regular intake of drugs for the prescribed duration. The strategy developed to ensure treatment compliance is called Directly Observed Treatment (DOT). DOT works by assigning a responsible person to observe or watch the patient take the correct medications daily during the whole course of treatment (https://www.philhealth.gov.ph/partners/providers/pdf/ComprehensiveUnifiedPolicy_TB.pdf).

The conduct of this study tried to determine the compliance of mothers to treatment with primary complex (TB) children among the selected Municipal Health Offices in the 1st district of Ilocos Sur. Identifying such would oversee the factors affecting the compliance of mothers in the treatment regimen of their children which would serve as a benchmark of the different members of the health team in making modifications in the program and the implementation of treatment to eradicate the spread of TB bacilli.

Objective of the Study

The study aimed to look into the:

1) Socio-demographic profile of the respondents to determine the level of knowledge of mothers on Primary Complex.

2). Level of knowledge of mothers on Primary Complex.

3). Extent of compliance of mothers to the treatment regimen of their children.

4). Outcome of the treatment.

5). The relationship between level of knowledge and profile of the mother.

6). A Relationship between the profile of the mother and the extent of compliance.

7).The relationship between the level of knowledge and the extent of compliant.

Conceptual Framework

The study revolved around the paradigm below.

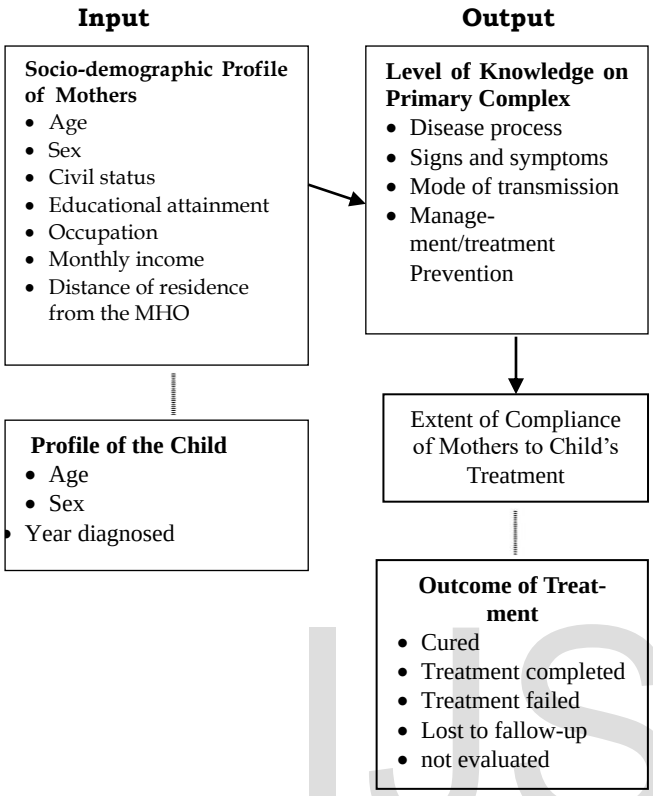

Figure 1. The Research Paradigm

The model presents the relationship between the level of knowledge and the socio-demographic profile, the relationship between the level of knowledge and the extent of compliance and the relationship between the socio-demographic profile of the mother respondents and the extent of the compliance to treatment.

METHODOLOGY

The study employed the descriptive- correlational method of research. A questionnaire-checklist that was formulated by the researchers and content validated by a pool of experts was the main instrument used coupled with records review. The study considered all the mothers with children suffering from primary complex. The statistical tools used to analyze and interpret the data were frequency, percentage, mean, and simple linear correlation analysis.
Results and discussions:

Profile of the Mother Respondents

A great number of the mother-respondents (29 or 29.3%) are 36-40years old, and a great majority (84 or 84.9%) of the respondents are married, Master's degree with doctoral units, (78 or79.8%) are professional, a monthly income of 20,001- above, and 32 (32.1%) are living one kilometer away from the municipal health office.

Profile of the Children with Primary Complex (PTB). Majority of the respondents' children (57 or 57.6%) are 5 to 14 years old, 51 (51.5%) are female and 71 (71.7%) were diagnosed of Primary Complex in the year 2015.

On the Level of Knowledge of Mothers on Primary Complex

Table 1 signifies the level of knowledge of the mother respondents on Primary Complex.

Table 1
Mean Ratings Showing the Level of Knowledge of the Mother-Respondents on Primary Complex

On Disease Process	*f*	%	DR
1.Primary complex stands for " Tuberculosis in children"	96	97.0	Very High
2. Caused by bacteria Tubercle Bacilli	86	88.9	Very High
3.Highly infectious chronic disease	85	85.9	Very High
4. Primary complex is contagious	89	89.9	Very High
5. Primarily a respiratory disease.	95	96.0	Very High
6. Primary complex mostly affects children of ages 0-14 years	87	87.9	Very High
7.Primary complex usually affects the lungs and can be spread to other parts of the body	87	87.9	Very High
8. Primary complex is spread most easily in closed spaces over a long period.	86	86.9	Very High
9. Primary complex could be treated and prevented	88	88.9	Very High
10. Primary complex is inherited	33	33.3	Low
Mean Percentage Score	**84.26**		
DR	**Very High**		
On Signs and Symptoms	***f***	**%**	**DR**
1 Loss of weight or failure to gain weight	91	91.9	VH
2.An unexplained fever of 2 weeks or more	94	94.9	VH
3. Loss of appetite	92	92.9	VH
4 Cough/ wheezing for more than 2 weeks	96	97.0	VH
5. Failure to respond to 2 weeks of appropriate antibiotic therapy for lower respiratory tract infection	89	89.9	VH
Mean Percentage Score	**93.93**		
DR	**Very High**		
On Mode of Transmission	***f***	**%**	**DR**
Primary complex can be transferred to others through:			
1. Coughing	99	100.0	VH
2. Sneezing	94	94.9	VH
3. Spitting	92	92.9	VH
4. Breastfeeding	28	28.3	L
5. Using personal belongings of the patient like a spoon or cup	55	55.6	F
6. Kissing	54	54.5	F
Mean Percentage Score	**71.0**		
DR	**High**		
On Prevention	***f***	**%**	**DR**
1.Eat a nutritious foods	99	100.0	VH
2. Have BCG immunization	98	99.0	VH
3. Good hygiene like bathing, grooming and others	98	99.0	VH

4. Cover mouth and nose when coughing and sneezing	98	99.0	VH
5. Expose the personal belongings of TB patients to air and sunlight	94	94.9	VH
6. Dispose of secretions of TB patients properly	97	98.0	VH
7. Good ventilation	96	97.0	VH
8. Avoid going to crowded places	95	96.0	VH
Mean Percentage Score	**97.86**		
DR	**Very High**		
On Treatment/Management	***f***	**%**	**DR**
1.Using more than one medicine to prevent Primary Complex	92	92.9	VH
2. Combining treatment for six months to one year or longer if needed. It depends on the result of sensitivity testing.	97	98.0	VH
3.Using Directly Observe Treatment (DOT)	91	91.9	VH
4. Using different treatment programs for children infected with primary complex bacteria that are resistant to one or more medicines	3	93.9	VH
Mean Percentage Score	**94.17**		
DR	**Very High**		
Overall Mean Percentage	**88.24**		
DR	**Very High**		

Norms:

Ranges of Score	Overall Descriptive Rating
81-100	Very High
61-80	High
41-60	Fair
21-40	Low
1-20	Very Low

As a whole, the level of knowledge of the mother respondents on Primary Complex is "Very High" with an overall mean percentage score of 88.24.

These could be attributed to the findings of this study that most of the mother respondents are Masters' degree holder with doctoral units and higher monthly income. These imply that the mothers have higher educational attainment have more learnings on how to prevent PTB, able to buy television and gadgets and have more exposure and easy access to social media, radio, newspapers, etc. The DOH was able to come up with a brilliant commercial campaign on their program on tuberculosis that can be viewed by people.

The result is supported with the findings of the study of Rebolledo, Jr. (2010), that there was a "Very High" level of knowledge of the respondents along signs and symptoms of tuberculosis and preventive measures for TB. He further mentioned that there are several protective measures against TB, namely BCG vaccination of new born, infants, and grade school entrance, prompt diagnosis and treatment of infectious cases and educating the public as to the spread and methods of control and the importance of early diagnosis. Further, he mentioned that the factors that hindered the treatment success for PTB patients were lack of instruction and information, emphasis and monitoring and reporting, and stoppage of the drug because of the absence of signs and symptoms of PTB.

This contradicts the findings of the study of Tasnim, Rahman and Hoque (2012), on the "Patient's Knowledge and Attitude towards Tuberculosis in an Urban Setting," that the symptoms of TB reported by the patients indicated an equally good level of knowledge places, TB is believed to be hereditary. Meager knowledge about TB and traditional misbelieves are associated with delays in case detection (https://www.hindawi.com/journals/pm/2012/352850/).

On the other hand, the level of knowledge of the mother respondents on the mode of transmission is "High" with a mean percentage of 71. The findings imply that the mothers are highly knowledgeable about the way of transmission. This is supported by the findings of Cabanting (2007) that when someone with untreated TB coughs, sneezes and spit, the air is filled with a droplet containing the bacteria, inhaling these infected droplets is the usual way a person gets TB. Tuberculosis is contagious when it's airborne and can be inhaled by others.

Further, Nisce et al., as cited by Rebolledo, Jr. (2010), tuberculosis can be transmitted through droplet method, by coughing, spitting or sneezing. It can also be transferred by direct invasion through mucuos membranes or breaks in the skin may occur, but it is extremely unusual.

Table 2 manifests the level of knowledge of the mother respondents on Primary Complex along prevention.

On the Extent of Compliance to Treatment Among Mothers with Primary Complex Children

It can be gleaned in table 2 the extent of compliance of the mother respondents on the treatment of their children with Primary Complex.

Table 2
Mean Ratings Showing the Extent of Compliance of Mother Respondents to Treatment of Primary Complex

Items	Mean	DR
1. I follow the scheduled time of my child's appointment/consultations or check-up	4.82	A
2. I get my child's medication in the health center on time	4.75	A
3. I ask my family member or the BHW to get my child's medication in the health center	2.31	Se
I let my child eat plenty of vegetables, fruits, and other nutritious food.	4.71	A
5. I see to it that my child has a nap time 1 hour every day.	4.37	A
6. Let my child take in the prescribed medication on the prescribed schedule.	4.78	A
7. I let my child to take vitamins to boost his immune system	4.77	A

Overall Level	**4.36**	**Very High**

As a whole, it can be observed from the table that the mother respondents have a "Very High" extent of compliance to treatment of their children with Primary Complex with $\bar{x}$=4.36. Taken singly, the mother respondents have "Very High" extent of compliance to treatment. They "Always" follow the scheduled time for their child's appointment/consultations or check-up and "Seldomly" ask their family members or the BHW to get their child's medication in the health center.

This shows that mothers are compliant with the treatment regimen of their children and they religiously get the medicines themselves from the MHO's. The mothers personally attend to the needs of their children for them to be treated and remain healthy.

On the Treatment Outcomes in Terms of:
a. Treatment completed
b. Treatment failed
c. Lost to follow-up
d. Not evaluated

Treatment Outcomes

Table 3 shows the treatment outcomes of children with Primary Complex.

Table 3
Distribution of respondents in Terms of the Outcomes of Treatment of Children with Primary Complex

Outcome	*f*	%
Treatment Completed	98	98.99
Not Evaluated	1	1.01
Lost to follow-up	0	0
TOTAL	**99**	**100**

The table shows that almost all (98 or 98.99%) of the children with primary Complex completed their treatment within the prescribed time of 6 months and further evaluated by the Municipal Health Officer if an x-ray is needed. Out of the 98 who completed treatment there were 16 who are cured (completed treatment within six months and evaluated) and one child was not assessed or followed-up after the management. The findings were supported with the result in the previous table that the mothers are highly compliant with the treatment.

Soares et al., (2006), on their study, found out that patients under DOT were more likely to convert to sputum negative than those under SAT, even when controlled for age, sex, and positive smear or culture upon enrollment (http://pdf.usaid.gov/pdf_docs/PNADM018.pdf).

On the Relationship Between Level of Knowledge and Profile of the Mother

Correlation Coefficient Between the Level of Knowledge of the Mother Respondents on Primary Complex and their Socio-Demographic Profile

Table 4
Correlation Coefficient Between the Level of Knowledge of Mother Respondents' on Primary Complex and their Socio-Demographic Profile

Variables	Disease process	Signs/ Symptoms	Mode of Transmission	Treatment	Prevention	Overall
Age	.106	.192	.099	.109	.057	.150
Civil status	-.046	-.104	-.035	-.042	.029	-.056
Educational Attainment	.389*	.260*	.313*	.302*	.223*	.419**
Occupation	.143	.195	.010	.107	.055	.137
Monthly income	.380*	.307*	.041	.287*	.176	.328*
Geographical Loc. of Residence	-.005	.089	-.169	.181	.133	.020

Looking at the table, as a whole, there is a significant relationship between the level of knowledge on Primary Complex and the mother respondents' educational attainment and monthly income with r=value of .419 and .328 respectively. The findings imply that the mothers who attained a higher level of education and monthly income have a very high knowledge about the disease compared to those with a lower level of educational attainment and monthly income. These could be attributed to the fact that the higher the income of the respondents the more chances of having higher educational attainment, afford to buy TV, have internet connection (social media), can go to the hospitals, clinics, municipal health office where they can avail some pamphlet and flyers that can contribute of acquiring knowledge about the disease. The DOH was able to develop a good advertisement on TB which can be with easy access for those who have television.

According to the results of the study of Kaona, F.,Tuba, M, Siziya, S., Sikaona, L., (2004), most male TB patient respondents tended to be older and more educated than the female TB patient respondents. There was a significant difference in TB knowledge, with more males than females reporting sharing of cups as a means for TB transmission, after adjusting for age, marital status and educational levels. Significantly more patients who had resided in the study for less than two years (59%) were more likely to report mother to child transmission of TB, compared to 41.2% of those who had been in the area for more

than 2 years (https://bmcpublichealth.biomedcentral.com/articles/10.1186/1471-2458-4-68).

On the Relationship Between the Compliance to Treatment and Profile of the Mother

Correlation Coefficient Between the Compliance to Treatment of the Mother Respondents on Primary Complex and their Socio-Demographic Profile

Table 5
Correlation Coefficient Between the Compliance to Treatment of Mother Respondents' on Primary Complex and their Socio-Demographic Profile

	I follow the scheduled time of my child's appointment/consultations or check-up	I get my child's medication in the health center on time	I ask my family member or the BHW to get my child's medication in the health center	I let my child eat plenty of vegetables, fruits, and other nutritious food.	I see to it that my child has a nap time 1 hour every day.	Let my child take in the prescribed medication on a regular interval	I let my child take vitamins to boost his immune system	Overall
Age	-.108	.025	.054	-.126	-.023	-.058	-.167	-.059
Civil Status	-.020	.127	.056	.008	-.035	.140	.000	.060
Educational Attainment	.190	.141	-.097	.174	.139	.079	.093	.110
Occupation	.139	-.029	-.108	.150	.004	.188	.115	.053
Monthly Income	.219*	.141	-.229*	.083	.047	.282**	.149	.061
Geographical location of Residence	-.024	-.015	-.089	-.041	-.084	.119	-.010	-.055

*Significant at .05 level of significant.
**Significant at .0 level of significant.

It can be revealed from the table that as a whole there is no significant relationship between the extent of compliance of the mother respondents and their socio-demographic profile.

The findings imply that those who have higher income are more compliant to treatment because they can afford to go to the health center regularly.

Further, the findings showed that there is an inverse correlation between the monthly income and asking their family member or the BHW to get their child's medication in the health center with r=value of -.229. This implies that the mother respondents attend to the treatment of their children.

On the Relationship Between the Extent of Compliance and the Level of Knowledge of the Mother Respondents

Correlation Coefficient Between the Extent of Compliance and the Level of Knowledge of the Mother Respondents on Primary Complex

Table 7
Correlation Coefficient Between the Extent of Compliance and the Level of Knowledge of Mother Respondents' on Primary Complex

	I follow the scheduled time of my child's appointment/consultations or check-up	I get my child's medication in the health center on time	I ask my family member or the BHW to get my child's medication in the health center	I let my child eat plenty of vegetables, fruits, and other nutritious food.	I see to it that my child has a nap time 1 hour every day.	Let my child take in the prescribed medication on a regular interval	I let my child take vitamins to boost his immune system	**Overall**
Disease Process	.286**	.281**	-.166	.293**	.220*	.330**	.272**	**.238***
Signs/symptoms	.023	.070	-.445**	-.028	.081	.012	-.049	**-.168**
Mode of transmission	-.004	.035	.032	-.076	.021	-.136	-.118	**-.035**
Treatment	.360**	.185	-.261**	.161	.197	.171	.090	**.099**
Prevention	.081	.040	-.108	.163	.099	.142	.182	**.087**

The table shows that there is a significant relationship between the overall extent of compliance of mother respondents to treatment and the level of knowledge along the disease process of Primary Complex. The finding implies that the mother respondents who have a very high knowledge about the disease process are more compliant with the treatment of their children as they are adequately knowledgeable about the disease.

The findings reflect that the respondents do not rely on others in getting the medication of their children from the MHO's. Further, it reveals that the mothers personally attend to the needs of their children. They religiously follow the scheduled check-up and treatment of their children. According to Rebolledo Jr. (2010), knowledge of the signs and symptoms of PTB influence the compliance of patients to treatment.

CONCLUSIONS

Based on the findings, these are the conclusion:

1. The mother respondents' are with very high knowledge about Primary Complex.
2. Mother respondents are highly compliant with the treatment of their children.
3. Almost all of the children with primary Complex completed their treatment within the prescribed time of 6 months.
4. The mother respondents have a "Very High" extent of compliance to treatment,
5. Almost all of the children with primary complex completed their treatment.
6. The level of knowledge of the mother respondents is associated with their educational attainment and monthly income.
7. Socio-demographic profile of the mother respondents is not associated with the extent of their compliance to treatment.
8. The extent of compliance to treatment and the level of knowledge of the mother respondents have a positive relationship on the disease process.

RECOMMENDATIONS

1. Parents/guardians should continuously update themselves about the disease through media like television, reading newspapers, listening to the radio, attend seminars or health education provided by health workers.
2. The extent of compliance of mothers should be maintained by religiously getting the medications and comply treatment of their children without failure.
3. Parents/guardians should help their children to maintain their health by providing nutritious food.
4. Mothers/guardians should bring their children at the MHO's for follow-up after completing the treatment.
5. DOH should strengthen their commitment to support MHOs by giving free supply of medicines and assist recipients to improve compliance to achieve healthy citizenry.
6. MHO's should include topics about the disease during their health education dissemination activities.

LITERATURE CITED

[1] Ancheta, M. C. 2010. Socio-political determinants in the treatment compliance of pulmonary tuberculosis (tb) patients in the selected municipalities of Abra Unpublished Graduate Thesis, University of Northern Philippines, Vigan City, Ilocos Sur.

[2] Cabanting, T. T. 2007. Attitude, knowledge and skills on common communicable and infectious diseases among nursing students of the University of Northern Philippines, Unpublished Graduate Thesis, Vigan City, Ilocos Sur

[3] Centre for Injury Prevention Bangladesh, Bangladesh, Retrieved December 12, 2017 12NN

[4] Department of Obstetrics & Gynaecology, Institute of Child and Mother Health, Matuail, Dhaka 1362, Bangladesh

[5] Global TB Report 2016; Dodd et al., 2016. http://www.who.int/tb/challenges/childhood_tb_informationsheet.pdf, Retrieved on December 9, 2017

[6] Manual of Procedures for TB Control Program in the Philippines, 2001. https://www.philhealth.gov.ph/partners/providers/pdf/ComprehensiveUnifiedPolicy_TB.pdf. Retrieved on June 15, 2018 http://pdf.usaid.gov/pdf_docs/PNADM018.pdf, Retrieved: December 9, 2017

[7] Pulmonary Medicine
Volume 2012 (2012), Article ID 352850, 5 pages
http://dx.doi.org/10.1155/2012/352850
[8] Patient's Knowledge and Attitude towards Tuberculosis in an Urban Setting

[9] Rebolledo, Jr. G. I. D. (2010). Knowledge, attitudes and compliance behaviors' among ptb patients in Baguio City, Unpublished Graduate Thesis, University of Northern Philippines, Vigan City, Ilocos Sur

[9] Saria Tasnim, Aminur Rahman, and F. M. Anamul Hoque

[10] Tuberculosis, Major Problem in the Philippines. (http://www.wpro.who.int/philippines/areas/communicable_diseases/tb/story_continuation_tb_area_page/en/. Retrieved on June 15, 2018

[11] WHO Manual (1998) DOTS p. 3

[12](n.a.)(n.d.).https://pps.org.ph/august-scientific-meeting-childhood-tuberculosis/, Retrieved: December 9, 2017

[13](n.a)(n.d.).https://www.rappler.com/move-ph/87809-tuberculosis-deadliest-treatable-diseases-philippines, Retrieved December 20, 2017