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Knowledge, Practices, and Coping Mechanisms of Families with a Diagnosed Pulmonary Tuberculosis Member

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ABSTRACT

This study examined the knowledge, health practices, challenges, and coping mechanisms of families living with a member diagnosed with pulmonary tuberculosis (PTB) in Upi, Maguindanao. A descriptive qualitative research design was employed, and data were gathered through interviews with wives of PTB patients. Findings indicated that participants possessed a moderate level of knowledge about tuberculosis and generally practiced appropriate preventive measures, including proper hygiene and adherence to prescribed treatment. Despite these, families experienced considerable financial, physical, emotional, and psychological burdens, largely due to the reduced capacity of affected members to work. Participants relied on various coping strategies, such as strong religious faith, support from family and community, and engagement in livelihood and household activities. The study concludes that, despite significant challenges, families demonstrate resilience through adaptive coping mechanisms. It is recommended that health education initiatives and community-based support systems be strengthened to enhance family well-being and improve treatment outcomes.

INTRODUCTION

Pulmonary tuberculosis (PTB) remains a major public health concern, particularly in developing countries. It not only affects individuals but also significantly impacts family members who assume caregiving roles. Families living with PTB patients are at increased risk of infection and often face social, economic, and emotional burdens.

In the Philippines, despite the implementation of tuberculosis control programs, cases continue to rise. Family caregivers, especially spouses, play a critical role in ensuring treatment adherence and providing daily care. Understanding their knowledge, practices, and coping mechanisms is essential in improving patient outcomes and family well-being.

This study aimed to examine the experiences of families with a member diagnosed with PTB, focusing on their health practices, challenges encountered, and coping strategies.

LITERATURE REVIEW

Pulmonary tuberculosis (PTB) is a communicable disease caused by Mycobacterium tuberculosis that primarily affects the respiratory system and is transmitted through airborne droplets. The bacteria can spread when an infected individual cough, sneezes, or speaks, making close contact a major risk factor (Smeltzer & Bare, 2013). Preventive measures such as proper cough etiquette, isolation when necessary, and adequate ventilation are essential in reducing transmission (Mayo Clinic, 2016). Individuals with compromised immune systems, malnutrition, or coexisting conditions such as HIV/AIDS are at higher risk of acquiring the disease (World Health Organization, 2015). Early detection remains critical, as symptoms such as prolonged cough, fever, weight loss, and fatigue are often mistaken for less serious illnesses, delaying diagnosis and increasing the likelihood of transmission (Department of Health, 2014).

Management of tuberculosis requires strict adherence to a long-term treatment regimen, typically lasting six to nine months, involving first-line drugs such as isoniazid, rifampin, ethambutol, and pyrazinamide (Mayo Clinic, 2016). Failure to complete treatment can result in multidrug-resistant tuberculosis (MDR-TB) and extensively drug-resistant tuberculosis (XDR-TB), which are more difficult and costlier to treat (Centers for Disease Control and Prevention, 2016). Patients with drug-resistant TB often experience more severe side effects, including nausea, hearing loss, and weakness. To address these challenges, the Directly Observed Treatment Short-Course (DOTS) strategy has been widely implemented, particularly in the Philippines, to ensure medication adherence and improve treatment outcomes (Department of Health, 2014). Health education is equally important in promoting compliance and preventing relapse or further transmission (American Lung Association, 2016).

Family involvement plays a vital role in the care and recovery of PTB patients. Families provide physical, emotional, and financial support; however, caregiving may lead to stress, fatigue, and role strain (Sukumani *et al.*, 2012). Proper hygiene practices such as handwashing, use of masks, and maintaining a clean environment are essential in preventing the spread of infection within households (Centers for Disease Control and Prevention, 2016). In addition, maintaining a healthy lifestyle through proper nutrition, adequate rest, and regular monitoring enhances the immune system and supports

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recovery (University of Maryland Medical Center, 2016). Nutritional interventions, including adequate intake of vitamins and minerals, have been shown to improve patient outcomes and reduce complications associated with tuberculosis.

Despite available treatment and preventive strategies, families living with PTB patients face numerous challenges, including financial burden, emotional stress, and social stigma. Caregivers often experience fatigue and psychological strain while assisting with medication, hygiene, and daily needs of the patient (Sukumani *et al.*, 2012). Coping mechanisms vary, with some families demonstrating resilience and positive adaptation, while others struggle with negative emotions and misconceptions about disease transmission (James & Grove, 2012). The application of nursing theories such as Florence Nightingale's Environmental Theory, Nola Pender's Health Promotion Model, and Sister Callista Roy's Adaptation Model highlights the importance of environmental control, health behaviors, and adaptive responses in managing tuberculosis. These frameworks emphasize that successful TB management requires not only medical treatment but also holistic support involving the patient, family, and community.

MATERIALS AND METHODS

The study used a mixed-method research design, combining both quantitative and qualitative approaches. The quantitative part focused on determining the knowledge, practices, and coping mechanisms of families with members diagnosed with pulmonary tuberculosis (PTB). Meanwhile, the qualitative approach provided a deeper understanding of the participants' experiences, challenges, and coping strategies through thematic analysis.

The study was conducted in Upi, Maguindanao, where the Rural Health Unit (RHU) serves 23 barangays and maintains records of tuberculosis patients. A total of 20 participants, who were wives of PTB patients enrolled in the DOTS program, were selected using purposive sampling. Although 24 families met the criteria, only 20 agreed to participate in the study.

Instrumentation A self – constructed questionnaire was used in gathering the relevant information based on National Tuberculosis Program, Manual of Procedure (2015) and PBSP Global Fund Anti – Tuberculosis (2014). It consists of five (5) parts. Part I consists of the participants' demographic profile which include the religion, number of children, highest educational attainment and family income per month data. Part II consists of 66-item statements on the participants' knowledge on PTB. Part III consist 48 - item statements on the health practices of the participants to include the diet, hygiene, rest and exercise, and the preventive measures against PTB.

Parts IV- A consist of 5 item statements on participants' difficulties and challenges and V - A consists of 10 – item statements on participants' coping mechanisms. The questionnaire used as instrument was interpreted with the use of scale, a range of value, description and interpretation below:

Scale Range of Value Description Interpretation 1.1.00 – 1.49 Strongly Disagree, 0 – 24% understanding 2.1.50 – 2.49 Disagree, 25 - 49% understanding 3. 2.50 – 3.49 Agree, 50 – 74% understanding 4. 3.50 – 4.00 Strongly Agree, 75 – 100% understanding

In part III, the participants' health practices, which includes diet, hygiene, rest and exercise and preventive measures, is interpreted through the scale, range of value, description and interpretation below: Scale Range of Value Description Interpretation 1. 1.00 – 1.49 None at All, Participants practiced 0 – 24% 2. 1.50 – 2.49 Seldom, Participants practiced 25 - 49% 3. 2.50 – 3.49 Most of the time, Participants practiced 50 – 74% 4. 3.50 – 4.00 Always, Participants practiced 75 – 100%.

The questionnaire was validated by an expert statistician, a National Tuberculosis Program Coordinator who has a master degree and a medical doctor who is the head of National Tuberculosis Program. Furthermore, a structured questionnaire was made for the participants 'difficulties and challenges experienced and their coping mechanism as part IV – B and V – B to gain more supporting data.

Data Gathering Procedure

Upon the approval of the study, a permission was sought from the Municipal Mayor, Sangguniang Bayan Committee Chair on Health, Municipal Health Officer Barangay Chairmen where the selected participants are residing. The researcher had also coordinated with the NTP coordinator for permission and pre – intra phase study preparation was done. The consent was taken from the participants after properly explaining the content, procedure and purpose of the study. The researcher had set an appointment with every barangay chairman who are qualified in the conduct of the study. The researcher had oriented the participants about the data gathering procedures, before the researcher read the informed consent to each participant with the acknowledgement if the participant agreed to participate or not. After which, the researcher conducted a one-on-one interview. The researcher started reading each question one by one and had waited for the participant to respond.

Measure

Descriptive statistics was used for the quantitative data gathered that includes the demographic profile, knowledge and practices. The qualitative data have been analyzed after transcription of the responses of every participant on the challenges encountered and coping mechanisms. Then themes were formulated.

Data were collected using a self-constructed questionnaire based on the National Tuberculosis Program guidelines. The instrument included sections on demographic profile, knowledge, health practices (diet, hygiene, rest, and prevention), challenges, and coping mechanisms. The

questionnaire was validated by health professionals and a statistician. Data gathering involved securing permissions, obtaining informed consent, and conducting one-on-one interviews with the participants.

For data analysis, descriptive statistics were used to summarize quantitative data such as knowledge and practices. Qualitative responses were transcribed and analyzed to identify common themes related to challenges and coping mechanisms.

RESULTS AND DISCUSSION

1. Demographic Profile of Participants

Most participants come from low-income, low-education households with large families. These factors influence their ability to care for family members with tuberculosis and access proper health information.

Table 1: Summary of Participants' Profile

Variable	Key Findings
Religion	Majority Episcopalian (45%), Roman Catholic (35%)
Number of Children	Most have 6–7 children (35%); mean = 5
Education	Mostly elementary level (35%)
Monthly Income	95% earn ₱2,500 or below

2. Knowledge and Health Practices on Pulmonary Tuberculosis (PTB)

Participants show moderate knowledge of PTB. They understand key aspects like symptoms and treatment, but misconceptions exist, especially about transmission (e.g., hugging or sharing utensils).

Table 2: Summary of Knowledge on PTB

Area	Mean	Interpretation
Causes	3.07	Agree
Transmission	2.74	Agree
Signs & Symptoms	3.00	Agree
Treatment	3.30	Agree
Overall	2.96	Moderate Knowledge (50–74%)

Participants generally practice good hygiene and preventive behaviors, such as handwashing and seeking medical care.

Table 3: Summary of Health Practices

Area	Mean	Interpretation
Diet	3.21	Most of the time
Hygiene	3.56	Always
Rest & Exercise	3.32	Most of the time
Preventive Measures	3.52	Always
Overall	3.40	Good Practice

However, diet and exercise are less consistent, likely due to financial limitations.

Health Practices

Participants demonstrated awareness of tuberculosis prevention and management. Common practices included:

1. Proper disposal of sputum
2. Covering the mouth when coughing "Sinasabihan ko lng sya na kapag umuubo ka, takpan mo ang iyong bunganga.
3. Maintaining ventilation at home
4. Seeking medical consultation and adhering to treatment "pumunta sa health center o hospital at pinadoctor ang aking asawa", "ginawa ang lahat"

These findings suggest that health education from healthcare providers was generally effective.

3. Challenges and Coping Mechanisms

Key Challenges Identified

1. Financial difficulties

Table 4: Challenges Experienced

Challenge	Mean	Interpretation
Accepting situation	3.60	Strongly Agree
Medication assistance	3.55	Strongly Agree
Hygiene care	3.35–3.45	Agree
Providing food	3.10	Agree
Overall	3.41	Agree (Moderate Challenge)

2. Increased household responsibilities
3. Physical exhaustion and lack of rest
4. Emotional stress and fear of infection

Figure 1. Major Themes of Challenges

1. Doing household chores alone
2. Financial constraints
3. Fear of infection
4. Lack of rest
5. Emotional burden

Challenges Experienced

Participants faced multiple challenges:

1. Financial: Loss of income due to the husband's illness led to insufficient funds for daily needs. Many relied on relatives or community support. Nagtulungan kami sa pinansyal na problema at sa lahat ng gawain sa bahay upang maging magaan ito at mapanatagang aming isip.""Sila rin ang nagpapalakas ng loob ko. Lalong lalo na ang nanay niya na sumusuporta sa amin."na bibigyan nila ako ng panahon para pag-usapan ang mga bagay-bagay para ako ay hindi mahihirapan.""Magtawag sila sa akin, minsan pinupuntahan talaga siya sa bahay upang kamustahin."

1. Physical: Caregivers experienced fatigue, lack of rest, and body pain due to increased workload.

2. Emotional and Psychological: Feelings of stress, fear of infection, and social stigma were common.

"Nagagalit po siya sa akin kapag pinapainum ko siya ng gamot","Sinisigawan niya po ako minsan pagpinapainum ko siya ng kanyang gamot", "Napapagud na rin ako"

These findings highlight the burden placed on caregivers, particularly women, who assume both caregiving and income-generating roles.

Figure 2. Sources of Support

1. Immediate family (children, parents)

Table 5: Coping Mechanisms

Coping Strategy	Mean	Interpretation
Faith in God	3.70	Strongly Agree
Attending church	3.80	Strongly Agree
Seeking help (health workers)	3.70	Strongly Agree
Cleaning surroundings	3.75	Strongly Agree
Social support	3.20–3.45	Agree
Overall	3.46	Effective Coping

2. Relatives and in-laws
3. Community and health workers

Coping Mechanisms

Participants utilized several coping strategies:

1. Spiritual coping: Prayer and faith in God were the most common sources of strength. "Nagdarasal gabi – gabi. Dinarasal ko gabi gabi na sana gumaling na sya." "Nagsisimba po ako."

2. Social support: Assistance from children, relatives, and health workers helped reduce stress. "Tinutulungan ako ng anak ko sa hanapbuhay. Kahit saan lang maghanapbuhay." "Sa paggawa ng gawaing bahay." "naggagarden po ako ma'am at nagsasaka para mawala ang stress ko." "Naglalaba po ako." "Nag aalaga po ako ng mga hayop sa bahay." "Nag iipon po ako ng mga panggatong

3. Active engagement: Household chores and livelihood activities provided both financial support and distraction from stress. "Tinutulungan ko po siya sa lahat ng bagay." "Hindi na po siya nagtratrabaho ako na po gumagawa ng mga gawaing bahay at naghahanap buhay".

These coping mechanisms indicate positive adaptation, enabling families to manage challenges effectively.

Discussion

Pulmonary Tuberculosis remains a serious health issue despite government programs. The study shows that families are at risk, especially when knowledge about the disease is incomplete and living conditions are challenging. Most participants have limited education and income, which affects their understanding of PTB. While they recognize symptoms and treatment, misconceptions about transmission persist, indicating a need for better health education.

Despite these challenges, participants demonstrate positive health practices, particularly in hygiene and seeking medical care. Their ability to maintain these practices, even with limited resources, shows strong adaptability.

Caregiving creates significant burdens, especially financial strain and increased responsibilities for wives. Many take on both caregiving and income-generating roles, leading to fatigue and stress.

However, participants cope through strong social and spiritual support systems. Faith, family assistance, and help from health workers play a major role in helping them manage their situation.

Overall, the findings highlight that while families show resilience and good practices, improved education, financial support, and community health programs are essential to better manage and prevent PTB.

CONCLUSION

The findings of this study showed that most participants belonged to low-income households, had large family sizes, and attained only elementary-level education. Despite these limitations, they demonstrated sufficient

knowledge of pulmonary tuberculosis (PTB), particularly regarding its causes, symptoms, and treatment. However, misconceptions were identified, especially concerning its mode of transmission and inappropriate treatment practices. Participants generally observed proper hygiene, nutrition, rest, and preventive measures, helping minimize disease spread. They also experienced emotional, physical, and financial challenges while caring for their husbands with PTB, but coped through faith, family support, and assistance from health workers.

Based on these findings, Rural Health Units should strengthen health education programs to correct misconceptions about PTB, particularly on transmission and treatment. Families should maintain strong relationships and share caregiving responsibilities. Community awareness programs should be enhanced to reduce stigma and promote supportive environments. Additionally, recreational and psychosocial support activities for caregivers are recommended to reduce stress and improve coping. Future research may examine the effectiveness of health education and coping strategies among families living with PTB. Further studies should explore factors influencing positive and negative coping mechanisms and assess long-term impacts of community-based interventions on family well-being and patient recovery outcomes in local settings.

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