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Impact of Peer Group Support and Motivational Interviewing on Tuberculosis Prevention in Family Settings

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Abstrak

Tuberkulosis merupakan masalah kesehatan masyarakat yang serius, menyebabkan penyakit, kecacatan, dan kematian. Upaya pencegahan tuberkulosis, khususnya yang melibatkan keluarga, sangat penting untuk mencegah penularan di rumah. Dukungan Kelompok Sebaya memungkinkan klien dengan pengalaman serupa dalam merawat pasien tuberkulosis untuk berbagi dan belajar satu sama lain, memupuk saling mendukung dan mendidik dalam pencegahan dan perawatan. Wawancara Motivasi mendorong keluarga untuk lebih sadar dan proaktif dalam pencegahan tuberkulosis, memainkan peran kunci dalam meningkatkan *Case Detection Rate* (CDR). Penelitian ini menguji dampak Dukungan Kelompok Sebaya dan Wawancara Motivasi terhadap pencegahan tuberkulosis di lingkungan keluarga. Desain yang digunakan adalah quasi eksperimen dengan pendekatan kuantitatif one-group pre-test dan post-test yang melibatkan 49 responden yang dipilih melalui purposive sampling. Data dikumpulkan dengan menggunakan kuesioner dan dianalisis menggunakan uji t berpasangan. Penelitian menemukan adanya perbedaan yang signifikan perilaku keluarga terhadap pencegahan tuberkulosis sebelum dan sesudah intervensi Dukungan Kelompok Sebaya dan Wawancara Motivasi, dengan rata-rata perubahan perilaku sebesar -16,5 dan standar deviasi sebesar 5,4. Uji-t menghasilkan -21,1 dengan nilai p 0,000, yang menunjukkan bahwa Dukungan Kelompok Sebaya dan Wawancara Motivasi secara signifikan meningkatkan perilaku pencegahan tuberkulosis dalam keluarga. Dukungan Kelompok Sebaya dan Wawancara Motivasi terbukti efektif dalam meningkatkan perilaku pencegahan tuberkulosis di lingkungan keluarga, menjadikannya strategi yang berharga untuk pengendalian tuberkulosis di masyarakat.

Kata Kunci: *Dukungan Kelompok Sebaya, Wawancara Motivasi, Pencegahan Penularan Tuberkulosis, Keluarga*

Abstract

Tuberculosis (TB) is a serious public health issue, causing illness, disability, and death. TB prevention efforts, particularly involving families, are crucial to preventing transmission at home. Peer Group Support allows clients with similar experiences caring for TB patients to share and learn from each other, fostering mutual support and education in prevention and care. Motivational Interviewing encourages families to be more aware and proactive in TB prevention, playing a key role in improving the Case Detection Rate (CDR). This study examined the impact of Peer Group Support and Motivational Interviewing on TB prevention in family settings. A quasi-experimental design with a one-group pre-test and a post-test quantitative approach was used, involving 49 respondents selected through purposive sampling. Data were collected using questionnaires and analyzed using a paired t-test. The study found a significant difference in family behavior toward TB prevention before and after the Peer Group Support and Motivational Interviewing interventions, with an average behavior change of -16.5 and a standard deviation of 5.4. The t-test yielded a -21.1 with a p-value of 0.000, indicating that Peer Group Support and Motivational Interviewing significantly improved family TB prevention behaviors. Peer Group Support and Motivational Interviewing were proven effective in enhancing TB prevention behaviors in family settings, making them valuable strategies for TB control in the community.

Keywords: Peer Group Support, Motivational Interviewing, Tuberculosis Transmission Prevention, Family

INTRODUCTION

Tuberculosis (TB) remains a serious public health issue, posing significant risks of illness, disability, and mortality, necessitating effective control measures. Caused by *Mycobacterium tuberculosis*, TB primarily affects the lungs but can also target other organs. Transmission occurs through inhaling infectious droplets, making it a key source of TB spread (Atzmardina, 2021). A crucial indicator in TB control is the Case Detection Rate (CDR), which measures the proportion of diagnosed and reported TB cases relative to estimated incident cases (Amdiyah, 2022). Challenges in combating TB include low public awareness of TB risks, poor patient motivation to adhere to treatment, stigma faced by patients and their families, and a lack of understanding about the importance of social support for TB patients (Yuswantina, 2022).

Due to its cost-effectiveness and proven success in TB control, national strategies employ the Directly Observed Treatment Short-course (DOTS) approach across healthcare units, including hospitals. The DOTS framework aligns with the nursing role in educating, managing, and providing care to individuals, families, groups, and communities. Globally, TB remains a pressing issue, with Indonesia ranking third in Asia after India and China (World Health Organization, 2020). Indonesia's national TB control program involves administering anti-tuberculosis drugs (OAT) over 6-8 months (Gunawan et al., 2017). In early 2020,

Indonesia saw a significant drop in TB cases, from 31,216 in January to 11,839 in June (Kemenkes RI, 2020). However, TB incidence remains high in Central Papua, especially in Nabire, where 1,072 pulmonary TB cases with positive Acid-Fast Bacillus (AFB) test results were reported in 2017, declining to 977 cases in 2018 (Afifah, 2014).

In community-based TB care, nurses play a central role as healthcare providers, but active participation from the community is also required. This includes community empowerment and collaboration, mainly through the formation of peer group support (Yanti, 2016). Engaging communities in these support groups is essential to strengthening TB prevention efforts. Indonesian Ministry of Health Regulation No. 67 of 2016 emphasizes improving coordination and partnerships between TB program managers and cross-sectoral agencies for effective TB control. The national strategy includes the "Find, Treat, Cure TB" (TOSS TB) initiative, which involves health providers in diagnosing and treating suspected TB cases to ensure universal access to TB services and move toward TB elimination.

To reduce the risk of TB transmission to vulnerable contacts, high-risk environments with poor ventilation, such as hospitals, crowded settlements, prisons, or dormitories, must be identified (Heemskerk et al., 2015). Adult family members living with TB patients should be empowered to prevent transmission to children by promoting healthy behaviors, nutritious diets, and strengthening children's immune systems (Noviyani et al., 2015). Nurses can intervene to change family behavior in TB households by leveraging interpersonal relationships through peer group support and motivational interviewing. These approaches provide social support, including emotional, material, and informational support, which influences the effectiveness of TB patient recovery and helps prevent disease transmission within families. Peer group support connects clients with similar experiences, enhancing emotional and social support that contributes to TB prevention success (Peimani et al., 2017).

Studies on peer group support in improving medication adherence among pulmonary TB patients have demonstrated its effectiveness in increasing adherence and promoting healthy behaviors (Afandi, 2016). Motivational interviewing also enhances treatment compliance in chronic lung disease patients, as highlighted by Naderloo et al. (2018). This approach targets not only patients but also affected families, aiming to improve TB prevention behaviors and reduce the risk of transmission. This study investigates the differences in family behavior regarding TB prevention before and after implementing peer group support and motivational interviewing in families living with TB patients.

RESEARCH METHOD

The research employs a quasi-experimental quantitative method with a one-group pretest-posttest design. The study aims to observe changes in preventive behavior due to Peer Group Support and Motivational Interviewing interventions among families of tuberculosis (TB) patients. The study will be conducted at Karang Tumaritis Community Health Center, Nabire District, in June 2024, chosen due to its relevant population of 96 registered families of TB patients. 49 respondents are selected using purposive sampling based on Slovin's formula with a 10% error margin. Inclusion criteria include being registered as a family member of a new or recurrent TB patient, residing within the health center's service area, and consenting to participate.

Data collection involves administrative preparations, TB patient data gathering, and pretest questionnaires to measure preventive behavior before intervention, followed by two sessions of Peer Group Support and Motivational Interviewing, and posttest questionnaires to measure behavioral changes. The research instrument consists of a TB prevention behavior questionnaire covering three domains: knowledge, attitude, and practice, with questions scored on a 1-3 scale. Data analysis is performed using SPSS, starting with the Shapiro-Wilk test to ensure normal data distribution, followed by a paired t-test to compare pretest and posttest scores with a 95% confidence interval and a 5% error rate ($\alpha = 0.05$). The results are presented in tables to illustrate the effect of the interventions on TB prevention behavior within families.

RESULT AND DISCUSSION

Table 1 Characteristics of Research Respondents Based on Gender, Age, Education, and Employment Status

Category	f	(%)
Gender		
Male	17	34,7
Female	32	65,3
Age		
20-35	12	24,5
36-45	24	49,0
46-55	13	26,5
Education		
Elementary School	4	8,2
Junior High School	16	32,7

Senior High School	25	51,0
University	4	8,2
Employment Status		
Employed	20	4,8
Unemployed	29	59,2
Total	44	100

Source: Primary Data

Based on the data in Table 1, most research respondents are female (65.3%), with the largest age group falling within the 36-45 years range (49.0%). Most respondents have a high school education (51.0%), and over half are unemployed (59.2%). This indicates a predominance of middle-aged women with a high school education and unemployed status in this study.

Table 2. Distribution of Family Behavior Scores in Preventing Tuberculosis Transmission in Family Settings Before and After Receiving Peer Group Support and Motivational Interviewing

Behavior	Min	Max	Mean	Median
Pretest	14	44	29,59	7,8
Posttest	38	55	46,06	4,8

Source: Primary Data

Based on the analysis of Table 2, which shows family behavior scores in preventing tuberculosis transmission before and after the Peer Group Support and Motivational Interviewing interventions, a significant improvement is observed. In the pretest, the minimum behavior score was 14, the maximum was 38, and the mean was 29.59. Following the intervention, the posttest results showed that the minimum score increased to 38, the maximum score rose to 55, and the mean behavior score significantly increased to 46.06.

Table 3 Analysis of the Effect of Peer Group Support and Motivational Interviewing on Preventing Tuberculosis Transmission in Family Settings

Behavior	Mean \pm SD	t	<i>P Value</i>
Pretest	-16,5 \pm 5,4	-21,1	0,000
Posttest			

Source: T-Test Statistical

According to Table 3, the results of the analysis on the impact of Peer Group Support and Motivational Interviewing on preventing tuberculosis transmission in family settings

indicate a significant difference between behavior scores before and after the intervention. The average difference in behavior (Mean) is -16.5, with a standard deviation (SD) of 5.4. The t-test shows a value of -21.1 with a p-value of 0.000 (<0.05), indicating that Motivational Interviewing has a significant effect on enhancing tuberculosis prevention behavior within families.

Discussion

The findings of this study indicate that the implementation of Peer Group Support and Motivational Interviewing (MI) significantly impacts the enhancement of family behavior in preventing tuberculosis transmission. Prior to the intervention, the average family behavior score for TB prevention was 29.59, with a minimum score of 14 and a maximum of 38. However, following the implementation of Peer Group Support and MI, this behavior score sharply increased, with an average of 46.06, a minimum of 38, and a maximum of 55. Further analysis revealed a significant difference in behavior before and after the intervention, with an average difference of -16.5. Statistical testing resulted in a p-value of 0.000, indicating that Motivational Interviewing significantly improves tuberculosis prevention behavior within families.

During the peer group support sessions, respondents gathered and were guided by peer educators. In these groups, participants shared their experiences of caring for family members with TB. This process not only provided emotional support but also allowed them to learn from one another's experiences, enriching their knowledge of effective ways to care for TB patients. Research by Romadlon et al. (2016) demonstrated that education provided through peer group support can enhance knowledge and behaviors related to disease prevention. In this study, the intervention successfully improved understanding and preventive actions against tuberculosis. This increase in knowledge was influenced by the peer educators and the messages communicated within the group, as these messages had strong appeal and effectively engaged group members (McDonald et al., 2015).

Moreover, the study by Duvivier et al. (2020) revealed that peer group support in the form of Post Natal Clubs (PNC) not only increased knowledge but also facilitated behavior change and group support. The PNC successfully encouraged higher participation, with group members feeling motivated to meet and share the challenges they faced. This contributed to an increase in satisfaction among participants, health workers, and key informants concerning maternal and child health, indicating that peer group support is effective not only in enhancing knowledge but also in building a strong support community. Thus, peer group support is a highly effective tool for improving the quality of care and

support for those caring for family members with infectious diseases such as TB, as well as in other health contexts. This peer support plays a crucial role in empowering individuals to tackle better health challenges through education, active participation, and the sharing of valuable experiences.

Motivational Interviewing (MI) is a collaborative counseling approach focused on the patient. It aims to encourage positive behavior change in individuals undergoing treatment (Randall, 2014). This approach is particularly relevant in the context of preventing tuberculosis transmission within families, where family behavior is critical to the success of disease prevention and control efforts. In this study, MI was utilized to explore the gap between family goals and behaviors related to TB prevention. Counselors employed empathetic techniques to help families identify their ambivalence—uncertainties or doubts in taking preventive measures. This approach proved effective as it primarily focused on resolving such ambivalence, thereby enhancing families' perceptions of the importance of making behavioral changes and supporting them in implementing those changes.

The study's results demonstrate that Peer Group Support and Motivational Interviewing successfully fostered significant behavioral changes within families. Before the intervention, the scores for TB prevention behaviors were low, indicating that families had not fully understood or applied the necessary preventive measures. However, following the MI intervention, there was a notable increase in behavior scores, signifying that families became more aware of the importance of prevention and more motivated to take the necessary steps. This improvement aligns with the principles of Peer Group Support and Motivational Interviewing designed to encourage sustainable behavior change in an individualized manner. Motivational Interviewing provides a structured framework that is easy for healthcare providers to follow, particularly in primary care settings (Li et al., 2020). This approach enables counselors to effectively interact with families, helping them recognize the difference between their current behaviors and desired behaviors, as well as guiding them through the change process.

Additionally, Peer Group Support and Motivational Interviewing not only address the physiological aspects of the disease but also significantly contribute to managing the psychological aspects for patients and their families. In the context of TB, where social stigma and fear surrounding the disease remain high, the Peer Group Support and MI approaches help reduce the anxiety and confusion that families may face. Thus, MI not only promotes better behavioral changes but also enhances the psychological well-being of families, which in turn strengthens efforts to prevent TB. Overall, this study confirms the effectiveness of Peer Group Support and Motivational Interviewing as interventions that can

improve behaviors for preventing tuberculosis transmission in family settings. By employing these approaches, healthcare providers can help families overcome their ambivalence, enhance their understanding of the importance of prevention, and support them in implementing the necessary changes to protect family members from TB transmission.

CONCLUSION

Peer Group Support and Motivational Interviewing are significantly effective in enhancing family behavior for preventing tuberculosis transmission. Prior to the intervention, family behavior was relatively suboptimal in adopting preventive measures. However, following the implementation of Peer Group Support and Motivational Interviewing, there was a noticeable increase in their awareness and actions regarding TB prevention. The approaches of Peer Group Support and Motivational Interviewing helped families better understand the importance of prevention, address their ambivalence, and guide them to be more consistent in applying preventive measures. These results suggest that Peer Group Support and Motivational Interviewing can serve as practical tools for improving health behaviors within families, particularly in the context of preventing tuberculosis transmission.

REFERENCES

- Afandi, A. T., 2016. 'Peer group support effectivity toward the quality of life among pulmonary tuberculosis and chronic disease client: a literature review', *NurseLine Journal*, 1(2).
- Afifah, N. (2014). Faktor-faktor yang berhubungan dengan kejadian drop out pengobatan penderita kusta tipe MB. *Unnes Journal of Public Health*, 3(2).
- Amdiyah, P. F., & Tahun, O. D. (2022). Efektivitas Metode Edukasi Terhadap Kepedulian Masyarakat Dalam Meningkatkan Case Detection Rate (CDR) TB Paru Di Puskesmas Kaliabang Tengah Bekasi Tahun 2022. *Jurnal Pendidikan dan Konseling (JPDK)*, 4(3), 1751-1760.
- Allen, M. (2017). *The sage encyclopedia of communication research methods*. (Vol. 1-4). Thousand Oaks, CA: SAGE Publications.
- Atzmardina, Z. (2021). Peningkatan Pengetahuan Masyarakat Cikupa Terhadap Tuberkulosis. *Journal of Sustainable Community Development (JSCD)*, 3(3), 178-184.
- Berhe, K. K., Gebru, H. B. & Kahsay, H. B. (2020) 'Effect of motivational interviewing intervention on HgbA1C and depression in people with type 2 diabetes mellitus: A systematic review and meta-analysis', *PLoS ONE*. Available at: <https://doi.org/10.1371/journal.pone.0240839>

- Bisallah, C. I., Rampal, L., Lye, M. S., Mohd Sidik, S., Ibrahim, N., Iliyasu, Z., & Onyilo, M. O. (2018). Effectiveness of health education intervention in improving knowledge, attitude, and practices regarding Tuberculosis among HIV patients in General Hospital Minna, Nigeria—A randomized control trial. *PloS one*, 13(2), e0192276.
- Chakaya, J., Khan, M., Ntoumi, F., Aklillu, E., Fatima, R., Mwaba, P., Kapata, N., Mfinanga, S., Hasnain, S.E., Katoto, P.D. and Bulabula, A.N., 2021. Global Tuberculosis Report 2020—Reflections on the Global TB burden, treatment and prevention efforts. *International Journal of Infectious Diseases*, 113, pp.S7-S12.
- Duvivier, H., Decroo, T., Nelson, A., Cassidy, T., Mbakaz, Z., Duran, L.T., Azevedo, V., Solomon, S., and Venables, E., 2020. 'Knowledge transmission, peer support, behaviour change and satisfaction in postnatal clubs in Khayelitsha, South Africa: a qualitative study', *Reproductive Health*, 17(107).
- Gunawan, A. R. S., Simbolon, R. L., & Fauzia, D. (2017). Faktor-Faktor Yang Mempengaruhi Tingkat Kepatuhan Pasien Terhadap Pengobatan Tuberculosis Paru di Lima Puskesmas Se-kota Pekanbaru. *Jurnal Online Mahasiswa Fakultas Kedokteran Universitas Riau*, 4(2), 1–20. <https://jom.unri.ac.id/index.php/JOMFDOK/article/view/15495/15037>.
- Heemskerk, D., Caws, M., Marais, B., Farrar, J., 2015. 'Tuberculosis in children and adults', Springer.
- Kementrian Kesehatan Republik Indonesia. (2020). Pedoman Nasional Pelayanan Kedokteran Tata Laksana Tuberculosis. Jakarta.
- Li, Z., Chen, Q., Yan, J., Liang, W. & Wong, W. C. W. (2020) 'Effectiveness of motivational interviewing on improving care for patients with type 2 diabetes in China: A randomized controlled trial', *BMC Health Services Research*. Available at: <https://doi.org/10.1186/s12913-019-4776-8>
- Moriarty, A. S., Louwagie, G. M., Mdege, N. D., Morojele, N., Tumbo, J., Omole, O. B., Bachman, M. O., Kanaan, M., Turner, A., Parrott, S., Siddiqi, K., AyoYusuf, O. A., 2019. 'ImPROving TB outcomes by modifying life-style behaviours through a brief motivational intervention followed by short text messages (ProLife): study protocol for a randomised controlled trial'. *Trials*, pp. 1–12.
- Naderloo, H., Vafadar, Z., Eslaminejad, A., Ebadi, A., 2018. 'Effects of motivational interviewing on treatment adherence among patients with chronic obstructive pulmonary disease: a randomized controlled clinical trial', dalam: *National Research Institute of Tuberculosis and Lung Disease Journal*, 17(4), pp. 241-249.
- Noviyani, E., Fatimah, S., Nurhidayah, I., Adistie, F., 2015. 'Upaya pencegahan penularan

- TB dari dewasa terhadap anak', dalam: Jurnal Keperawatan, 3, pp. 97–103.
- Paramitha, Y. and Budi, I.S., 2019. Upaya Pencegahan Penularan Tbc Di Wilayah Kerja Puskesmas Sukarami Tahun 2019 (Doctoral dissertation, Sriwijaya University).
- Peimani, M., Monjazebi, F. and Ghodssi-ghassemabadi, R., 2017. 'Patient education and counseling: a peer support intervention in improving glycemic control in patients with type 2 diabetes', Patient Education and Counseling. Elsevier Ireland Ltd.
- Ramadhany, S., Achmad, H., Singgih, M. F., Ramadhany, Y. F., Inayah, N. H., & Mutmainnah, N. (2020). A review: Knowledge and attitude of society toward tuberculosis disease in Soppeng District. *Systematic Reviews in Pharmacy*, 11(5), 57-62.
- Randall, E. J. (2014) 'Book Review: Motivational interviewing: Helping people change', *Research on Social Work Practice*. Available at: <https://doi.org/10.1177/1049731514536782>
- Romadlon, D.S., Bramantoro, T., and Luthfi, M., 2016. 'The effect of peer support education on dental caries prevention behaviour in school-age children at age 10-11 years old', *Dental Journal*, 49(4), pp. 217-222.
- WHO (2022) Global Tuberculosis Report 2022. Available at: <http://apps.who.int/bookorders>
- World Health Organization. (2020). Are Updated Every Year. for the Tuberculosis. https://www.who.int/tb/publications/global_report/en/.
- Yuswantina, R., Dyahariesti, N., & Lestari, I. P. (2022). Optimasi Situ (Sistem Informasi Tuberculosis) Berbasis Integrasi Virtual dan Augmented Reality pada Kader PKK Desa Candirejo, Kabupaten Semarang. *Indonesian Journal Of Community Empowerment (IJCE)*, 4(2), 176-182.