ORIGINAL

The Journal of Palembang Nursing Studies
https://jpns-journal.com/index.php/jpns
OPEN ACCESS

Peer group support and motivational interviewing interventions impact parents' behavior in preventing tuberculosis among children

Apriana Rahmawati[1*]
Budi Utomo[2]
Makhfudli Makhfudli[3]
Shenda Maulina Wulandari[1]
Khatijah Lim Abdullah[4]

[1] Faculty of Nursing and Midwifery, Universitas Binawan, Jakarta, Indonesia
[2] Faculty of Medicine, Universitas Airlangga, Surabaya, Indonesia
[3] Faculty of Nursing, Universitas Airlangga, Surabaya, Indonesia
[4] Department of Nursing, Sunway University, Kuala Lumpur, Malaysia

***Correspondence**:
Apriana Rahmawati
Faculty of Nursing and Midwifery, Universitas Binawan, Jakarta, Indonesia
Email: anaapriana.ar@gmail.com

Volume 3(1), 5-13

http://dx.doi.org/10.55048/jpns101

e-ISSN 2827-8100
p-ISSN 2827-8496

Received : August 26, 2023
Revised : October 9, 2023
Accepted : December 16, 2023
Available Online : December 18, 2023
Published : January 6, 2024

ABSTRACT

Background: Tuberculosis (TB) serves as a key indicator for assessing public health at the population level. The infection of children and toddlers with TB often stems from the lack of involvement by family members in adhering to proper hygiene practices aimed at preventing TB transmission.
Objective: This study aimed to assess the impact of peer group support and motivational interviewing on parental behaviors in preventing TB transmission among children residing in the same household as a TB patient.
Methods: Employing a quasi-experimental design (pre-post test with a single group), this study involved 30 parents selected through accidental sampling. The independent variables included peer group support and motivational interviewing, while the dependent variable was parental behavior concerning TB prevention in children. Data collection utilized a questionnaire assessing parents' behaviors in preventing TB in children, which was then analyzed using the paired t-test.
Results: The implementation of peer group support and motivational interviewing significantly influenced the enhancement of parental behaviors in preventing TB in children ($p < 0.001$).
Conclusion: Both peer group support and motivational interviewing demonstrated their efficacy in altering parental behavior to prevent TB in children residing with a TB patient. These interventions could be effectively incorporated by nurses to complement ongoing tuberculosis treatment therapies.

Keywords: tuberculosis; prevention; children; peer group support; motivational interviewing

INTRODUCTION

Ending tuberculosis (TB) in children stands as a pivotal component of the end TB strategy, aligning with the Sustainable Development Goals (SDGs) (WHO, 2019). Two crucial elements in *Mycobacterium Tuberculosis* transmission are agents and the environment, influencing the spread from patients to others. This arises partly due to patients and their family members' limited awareness regarding the disease's dangers and preventive measures (Siregar et al., 2018). Children and toddlers exposed to TB often result from inadequate family involvement in maintaining personal hygiene, primarily due to a

Nursing and Healthcare Practices

- *Implementation of peer group support and motivational interviewing led to a significant enhancement in parental behaviors aimed at preventing TB transmission in children living with TB patients.*
- *Incorporating peer group support and motivational interviewing into healthcare strategies can serve as effective tools for healthcare professionals, particularly nurses, and influence positive behavioral changes in TB prevention for children in households*
- *Nurses can effectively integrate peer group support and motivational interviewing into existing Tuberculosis treatment therapies to bolster parental engagement and improve TB prevention strategies in households.*

lack of understanding among family members regarding TB transmission prevention behaviors.

In 2018, TB caused 1 million cases globally, resulting in 233,000 deaths among children under the age of 15 (WHO, 2018). By 2016, the World Health Organization (WHO) gathered data on children under 5 years old residing with pulmonary TB patients and those commencing preventive treatment. Out of 118 involved countries, including 16 of the 30 nations grappling with a high burden of TB worldwide, reported insufficiently clear coverage of preventive care data. This lack of clarity in assessing preventive treatment made it challenging to strategize and oversee the management of these TB cases (Getahun et al., 2016).

The Ministry of Health employs various strategies for TB management, including the expansion of Directly Observed Treatment Short-course (DOTS) services. TB transmission commonly occurs in enclosed spaces with inadequate ventilation. High-risk locations for TB bacteria transmission encompass places with high population density, such as hospitals, densely populated residences, prisons, or student dormitories (Heemskerk et al., 2015). Optimizing the involvement of adult family members within households is crucial to prevent TB transmission to children. This can be achieved by familiarizing families with clean and healthy behaviors, promoting the consumption of nutritious food, and sustaining the child's immune system. Such measures aim to bolster immunity, reducing the child's susceptibility to diseases (Noviyani et al., 2015).

Research on self-management regarding parental prevention behavior in children residing with TB patients has not been previously explored. However, potential avenues for exploration could include peer group support and motivational interviewing. Peer group support facilitates connections among individuals with shared experiences, offering emotional and social backing, thereby promoting effective pediatric TB prevention (Peimani et al., 2018). Additionally, the motivational interviewing approach, when utilized by nurses, can potentially modify the behaviors of families cohabiting with TB patients by leveraging interpersonal relationships. Prior studies investigating the impact of peer group support on compliance among adult pulmonary TB patients have demonstrated its efficacy in enhancing medication adherence and fostering healthier lifestyle behaviors (Palacio et al., 2016). Moreover, Potty et al. (2023) indicated that the success of peer support initiatives often hinges on the creation of mutual relationships facilitated through the exchange of similar life experiences within peer support programs.

Motivational interviewing, when delivered as social support encompassing emotional, facility, and information assistance within families, plays a significant role in enhancing the recovery of pulmonary TB patients. This not only impacts the patients' healing process but also contributes to preventing disease transmission to children. Moreover, motivational interviewing has demonstrated its efficacy in promoting medication adherence among individuals with chronic lung diseases (Naderloo et al., 2018). Numerous studies have highlighted the positive outcomes of peer support and motivational interviewing interventions involving education, training, self-help groups, and clubs in improving treatment completion for both latent and active tuberculosis cases (Croft et al., 2013; Suharyo & Mubarokah, 2018; Palacio et al., 2016; Datiko, 2019; Parwati et al., 2021; Zuliani, 2019). However, these studies have yet to establish a standardized approach for

organizing support group meetings specifically designed for the support system of active TB patients. This gap in knowledge hinders the enhancement of treatment outcomes and the prevention of infection transmission to children within household contacts. Our study aims to address this gap by providing insights into the implementation process of peer support groups and motivational interviewing techniques among TB Patient Management Officers (PMOs) residing in the same households as patients and children.

METHODS

Design

A quasi-experimental design employing a quantitative one-group pre-test and post-test approach is utilized to assess the impact of an intervention on a specific sample's behavior.

Sample and Setting

Sampling in this study is accomplished through a non-probability sampling technique known as accidental sampling. This method involves selecting individuals based on chance encounters at the Perak Community Health Center in Surabaya, provided they meet specific inclusion criteria. These criteria entail being parents of children aged 0-5 years, residing with adult TB patients, having a tuberculosis score <6 according to the TB screening form, and possessing proficient reading and speaking skills in Indonesian. Throughout a one-month observation period, individuals meeting these inclusion criteria while visiting the Perak Community Health Center in Surabaya are considered for inclusion in the study. A total of 30 participants fitting these criteria were identified and selected for the research sample.

Variable

In this study, the independent variables consisted of a combined therapy approach involving peer group support and motivational interviewing. These interventions were implemented to assess their impact on the behavior of parents in preventing tuberculosis among children residing in the same household as TB patients. The dependent variable was defined as the behavioral process of parents influenced by the environment concerning the prevention of TB disease in children. This behavior reflects the interactions and actions of parents aimed at preventing tuberculosis transmission within the household setting.

Instruments

The study employed modules as references to provide interventions in the form of peer group support and motivational interviewing. Before and after these interventions, participants completed a questionnaire assessing TB prevention behavior in children across three domains: knowledge, attitudes, and actions. The questionnaire items were derived from reputable sources such as the non-profit health system Nemours Foundation Children's Health (KidsHealth, 2019), Childhood TB Training (2014) related to the National Program Guidelines for TB management in children, and Infection Control and Prevention. The validity of the questionnaire items was tested and confirmed, showing a calculated r value of 0.349, establishing validity. Additionally, the reliability test resulted in a value of 0.904 > α, indicating high reliability and confirming that all items were valid and dependable instruments for use in the study.

The attitude domain comprised 5 questions, with responses categorized as agree (3 points), doubt (2 points), and disagree (1 point). The maximum total value for this domain was 15, with score ranges defining levels: 1-5 (low), 6-10 (sufficient), and 11-15 (good). In the action domain, there were 6 questions, and responses were categorized as always (3 points), often (2 points), and rarely (1 point), based on guidelines from WHO (2014) regarding the national program for TB management in children and WHO (2019) on Infection Control and Prevention. This domain had score ranges of 1-5 (low practice), 6-10 (poor), and 11-15 (good). The three domains collectively formed behavioral categories: poor behavior (0-19), moderate behavior (20-38), and good behavior (39-57), which were used to assess the participants' overall TB prevention behaviors based on their questionnaire responses.

Intervention

The intervention commenced in the first week with motivational interviewing, conducted based on mutual agreement between the participants and the researcher. This phase encompassed open-ended questions and reflective listening. Subsequently, the peer group support intervention occurred during the second week of the study period. Moving into the third week, another session of motivational interviewing took place, focusing on affirmation

and summarization stages, including the encouragement of self-motivation statements. Evaluation occurred one week after the implementation of the final intervention.

Data Collection

The participants selected for this study were parents of children aged 0-5 years, serving as supervisor for drug swallowing, residing with family members undergoing tuberculosis treatment. Upon selecting the respondents, the researcher approached them, explained the study details, and provided a consent form. Those willing to participate were then given a pre-test questionnaire regarding tuberculosis prevention behavior in children. Following the completion of the pre-test questionnaire, the researcher discussed and agreed upon the timing for the initial intervention with the respondents. The first session of motivational interviewing was scheduled based on mutual agreement during the weekdays (Monday to Friday) of the first week of the research period, involving open-ended questions and reflective listening stages.

The subsequent intervention, peer group support, took place during the second week of the research period, specifically on Saturdays, lasting for 60 minutes. This session began with an introduction to the rules and regulations of peer group support, followed by discussions on topics related to pulmonary TB. Moving to the third week of the study, the second session of motivational interviewing, incorporating affirmation and summaries (self-motivation statement) stages, was conducted based on the agreed schedule between the respondents and the researcher. Upon completion of all interventions, a post-test in the form of a questionnaire assessing parental behavior in preventing tuberculosis in children was administered. This post-test was conducted seven days after the second motivational interviewing session.

Data Analysis

The analysis in this study utilized a paired t-test, also known as the correlated groups t-test, which is suitable for comparing two samples in a within-groups design. This design, often termed a dependent, repeated-groups, or within-subject design, involves assessing the means of two conditions using the same or closely matched participants throughout the study (Gerald, 2018). The paired t-test was selected for analysis as the data exhibited a normal distribution. This statistical test was employed to examine the impact and discern differences in parental behavior scores. The analysis was conducted using a paired t-test with a 5% error rate to assess the changes observed between the pre-test and post-test measurements as the final evaluation. Hypothesis testing was performed by collecting both pre-test and post-test data, utilizing the last measurement to evaluate the impact of the interventions on parental behavior scores.

Ethical Consideration

All research endeavors involving researchers, participants, and the affected community must adhere to ethical standards. This research protocol underwent ethical assessment and obtained approval from the Health Research Ethics Commission of the Faculty of Nursing, Universitas Airlangga, validated by the ethical certificate number 1879-KEPK.Participation in the study was voluntary, and each participant, represented by a parent, provided their consent by signing an informed consent form after being comprehensively briefed about the study's objectives. The primary aim was to ensure that the subjects understood the purpose of the research. Should a participant express willingness to participate, they were required to sign the consent form. However, if a participant chose not to participate, the researcher respected their decision and upheld their rights accordingly.

RESULTS

The study involved 30 parents with children living with a TB patient within the Perak Timur Public Health area, attributed to the highest number of TB cases among children in Surabaya over the last three years. In 2016, there were 39 TB cases (19.7%) among children aged 0-14 years. Subsequently, in 2017, the cases dropped to 10 (7.87%), and in 2018, there were 8 cases (5.59%)—reflecting the total number of TB cases among children in Surabaya. The participants comprised 28 females and 2 males, constituting the group with the broadest age range, encompassing 14 individuals (Table 1).

Based on Table 2, the lowest pre-test score for parental behavior was 31, while the highest score was 34. Following the intervention, the lowest score increased to 43, and the highest score rose to 49. The analysis conducted using a paired t-test revealed a t count of

Table 1. Characteristic of participants (n=30).

Characteristics	Category	n	%
Age	20-35 years	14	46.7
	36-40 years	9	30
	41-55 years	7	23.3
Gender	Male	2	6.7
	Female	28	93.3
Level of Education	Elementary school	9	30
	Junior high school	11	36.7
	Senior high school	9	30
	College	1	3
Job State	Worker	18	60
	Full-time parent	12	40

Table 2. Distribution value of parent's behavior.

Variable	Minimum	Maximum	Mean ± SD	Median	T	*p*-value
Pre-test	31	34	35.93 ± 2.559	36.00	22.395	<0.001
Post-test	43	49	44.37 ± 3.168	45.00		

22.395, which exceeded the critical t value from the t-table. Additionally, the resulting p-value < 0.001, signifying a highly significant difference in parental behavior between the pre-test and post-test after the intervention was administered.

DISCUSSION

The study found that implementing peer group support and motivational interviewing over a span of 3 weeks resulted in a noticeable enhancement in parents' behaviors concerning tuberculosis prevention among children living with TB patients. The conceptual framework utilized in this study was based on the Precede model, which underscores that behavior change is influenced by predisposing, reinforcing, and enabling factors. Predisposing factors encompassed the parents' experience in caring for family members affected by TB. Reinforcing factors were highlighted as the support received from peers and health workers acting as peer educators and counselors. Enabling factors included access to examinations for children aged 0-5 years and treatment for patients.The Precede factors were implemented as the study focused on the intervention and evaluation stages, aiming to improve parental behavior regarding their understanding, attitudes, and actions concerning TB prevention in children living with family members undergoing treatment. The study anticipated that increased understanding would positively impact parents' attitudes and actions, consequently enhancing their behaviors in preventing TB among children. This included the utilization of health screening facilities for TB prevention in children, such as tuberculin tests and contact screening, aiding in identifying the risk of disease transmission among children.

In the knowledge domain questionnaire, the lowest pre-test score was observed in item number 7, where 19 respondents were unaware of the appropriate time to wear a mask. Conversely, the highest score was achieved in item number 4, with 18 respondents correctly identifying TB symptoms, including weight loss and persistent cough lasting more than 3 weeks. Among the 19 respondents who lacked knowledge about mask usage, they had no prior experience in caring for family members affected by TB. Following the peer group support and motivational interviewing interventions, the number of respondents unaware of the appropriate time to wear masks decreased to 12 individuals. During the peer group support sessions, respondents assembled under the guidance of peer educators, facilitating the sharing of experiences related to caring for family members affected by TB within the group. Several studies, such as

Duvivier et al. (2020), support the efficacy of educational interventions through peer group support. Duvivier et al. (2020) highlighted the effectiveness of peer group support, specifically in Post Natal Clubs (PNC), in enhancing knowledge acquisition, behavioral changes, and group support, fostering active participation and problem-sharing within the group. Motivational interviewing played a pivotal role in enabling parents to openly discuss their concerns and challenges while caring for family members afflicted with TB. Utilizing client-centered techniques described by Miller and Rollnic, such as reflective listening, direct questioning, and deploying sentences to evoke internal motivation, the researchers facilitated discussions that encouraged parents to share their experiences (Hall et al., 2015).

In the attitude domain questionnaire, significant improvements were observed after participants received peer group support and motivational interviewing interventions, particularly in items 1, 2, 3, and 5, showing an average increase in positive attitudes among 24 individuals. However, item number 4 showed the smallest increase in positive attitude. This specific item addressed the recommendation for conducting examinations on children below 5 years old residing with TB patients. In the pre-test, 4 individuals agreed while 17 individuals were doubtful. In the post-test, 6 individuals agreed, but 23 individuals still expressed doubts regarding this recommendation. WHO recommends prioritizing screening for children under 5 years old living with TB patients, emphasizing their increased risk of contracting TB. Additionally, WHO guidelines suggest screening for children with TB-like symptoms, those known to be HIV-infected, and those in close contact with individuals having resistant TB (WHO, 2018). Furthermore, the questionnaire revealed certain misconceptions among respondents. In the knowledge domain, when asked about who is susceptible to TB infection, most respondents identified neighbors rather than children or spouses. Moreover, respondents were unaware that susceptibility to TB infection is not solely based on exposure intensity but also on age. Additionally, they lacked knowledge about the promptness of conducting examinations for children below 5 years old living with TB patients, even in the absence of TB symptoms. Dewi et al. (2016) found that seeking health services for children is often delayed until severe symptoms emerge or when these symptoms significantly disrupt their daily activities.

Peer group support holds significant value as it fosters a sharing environment where relationships develop, and communal normalization occurs. This setting, characterized by a non-judgmental atmosphere established by both group members and facilitators, has been noted to be motivating and beneficial (Slikboer et al., 2020). Studies, such as the research conducted by Duvivier et al. (2020) focusing on PNC, highlight that peer group support effectively enhances knowledge acquisition, facilitates behavioral changes, and strengthens group support dynamics by encouraging increased participation and the collective sharing of problems within the group.

Motivational interviewing serves as a catalyst for behavior change by enhancing the capacity to sustain positive behaviors, fostering focus, engaging in health planning, furnishing families with pertinent information, and bolstering self-efficacy. Within the framework of motivational interviewing, researchers prompt parents to articulate the rationale behind certain behaviors, such as why children continue to sleep in proximity to the TB sufferer, why the household windows remain closed, and how the patient's coughing or talking habits influence the situation. Participants are encouraged to contemplate how modifying these behaviors might align with their life and family objectives. The approach within motivational interviewing also involves delving into ambivalence and resistance before embarking on actions aimed at striking a balance between empathy and the necessity to alter entrenched behaviors that might inadvertently exacerbate the issue of TB transmission among children (Resnicow et al., 2016).

The data collected via questionnaires in the action domain revealed notable changes among respondents. Specifically, item number 1 exhibited a substantial increase, indicating that 26 respondents consistently accompanied their family members during drugs consumption during the post-test, a significant rise from the initial 8 respondents. Among these, 4 respondents supported treatment by encouraging family members without direct accompaniment.

However, items number 2, 3, 4, and 5 pertaining to cough etiquette, sputum disposal, ventilation maintenance, and providing nutritious food did not exhibit significant changes post-intervention. These habits were already established before the intervention,

with respondents reporting at least a weekly occurrence. Only 2 respondents displayed an increase in these actions, shifting from rare occurrences (1-2 times per month) in the pre-test to frequent occurrences (at least once a week) in the post-test, suggesting a positive shift in attitude translating into action. Irwan's research on health behavior highlights that attitude alone might not manifest in action, emphasizing the necessity of supporting factors or conducive facility conditions (Irwan, 2017). Items in the action domain necessitate specific facilities, such as dedicated sputum disposal bins and appropriate ventilation, which might not be feasible for all families to implement according to health recommendations.

The observed positive changes align with findings from Van De Berg et al. (2018), underscoring the significance of providing support to individuals affected by diseases like TB patients and their families through coordinated efforts among nurses in TB case management. Furthermore, research on Directly Observed Short Therapy (DOTS) Strategies by (Li et al., 2018) suggests that combining health education with social support for families and communities can enhance social support, surpassing the impact of solely providing health education to patients. The counseling approach employed in motivational interviewing during home visits aids in addressing unanswered queries and delving into the emotions experienced by parents while supporting family members undergoing treatment.

CONCLUSIONS

This study concludes that a significant difference in parental behavior was observed following the application of a combined therapy involving peer group support and motivational interviewing. The results revealed that prior to receiving this combined intervention, parents lacking previous experience in caring for family members with TB were unaware of the correct preventive measures to reduce disease transmission among children residing in the same household. The module employed as a guiding tool was instrumental in empowering parents to adopt values and perceptions conducive to achieving health objectives. This transformation supported the shift from risky behaviors to healthier practices, aiding in the recovery of family members affected by TB and subsequently lowering the risk of disease transmission to children. Future research endeavours are encouraged to involve community family nurses in conducting independent peer group support and motivational interventions using the compiled modules. This approach aims to enhance the involvement of healthcare providers within communities, allowing them to autonomously facilitate similar interventions effectively.

Declaration of Interest

No conflict of interest

Acknowledgment

The author of this study would like to thank the parents who agreed to be respondents in this study.

Funding

None

Data Availability

The datasets generated during and/or analyzed during the current study are available from the corresponding author on reasonable request.

REFERENCES

Anderson, L. N., Alvarez, E., Incze, T., Tarride, J. E., Kwan, M., & Mbuagbaw, L. (2023). Motivational interviewing to promote healthy behaviors for obesity prevention in young adults (MOTIVATE): A pilot randomized controlled trial protocol. *Pilot and Feasibility Studies, 9*(1), 1–9. https://doi.org/10.1186/s40814-023-01385-0

Croft, L. A., Hayward, A. C., & Story, A. (2013). Tuberculosis peer educators: personal experiences of working with socially excluded communities in London. *The International Journal of Tuberculosis and Lung Disease : The Official Journal of the International Union against Tuberculosis and Lung Disease, 17*(10), 36–40. https://doi.org/10.5588/ijtld.13.0309

Datiko, D. G. (2019). Peer education in prisons to improve tuberculosis case finding. *The Lancet Global Health, 7*(4), e396–e397. https://doi.org/10.1016/S2214-109X(18)30566-7

Dewi, C., Barclay, L., Passey, M., & Wilson, S. (2016). Improving knowledge and behaviours related to the cause , transmission and prevention of Tuberculosis and early case detection : a descriptive study of community led

Tuberculosis program in Flores , Indonesia. *BMC Public Health*, *16*(740), 1–12. https://doi.org/10.1186/s12889-016-3448-4

Duvivier, H., Decroo, T., Nelson, A., Cassidy, T., Mbakaz, Z., Duran, L. T., De Azevedo, V., Solomon, S., & Venables, E. (2020). Knowledge transmission, peer support, behaviour change and satisfaction in post natal clubs in Khayelitsha, South Africa: A qualitative study. *Reproductive Health, 17*(1), 1–11. https://doi.org/10.1186/s12978-020-00957-0

Fisher, E. B., Boothroyd, R. I., Elstad, E. A., Hays, L., Henes, A., Maslow, G. R., & Velicer, C. (2017). Peer support of complex health behaviors in prevention and disease management with special reference to diabetes: Systematic reviews. *Clinical Diabetes and Endocrinology, 3(*1), 1–23. https://doi.org/10.1186/s40842-017-0042-3

Gerald, B. (2018). A brief review of independent, dependent and one sample t-test. *International Journal of Applied Mathematics and Theoretical Physics, 4*(2), 50. https://doi.org/10.11648/j.ijamtp.20180402.13

Getahun, H., Matteell, A., Abubakar, I., Hauer, B., Pontali, E., & Migliori, G. B. (2016). Advancing global programmatic management of latent tuberculosis infection for at risk populations. *European Respiratory Journal, 47*(5), 1327–1330. https://doi.org/10.1183/13993003.00449-2016

Hall, K., Gibbie, T., & Lubman, D. I. (2015). Motivational interviewing techniques. *Peripheral Brain for the Pharmacist, 41*(9). https://doi.org/10.21019/9781582122403.ch37

Heemskerk, D., Caws, M., Marais, B., & Farrar, J. (2015). Tuberculosis in children and adults. *The Lancet, 193*(4990). https://doi.org/10.1016/S0140-6736(00)45122-6

Irwan. (2017). Etika dan perilaku kesehatan. *Absolute Media*.

KidsHealth, N. (2019). *What is tuberculosis?*

Li, X., Wang, B., Tan, D., Li, M., Zhang, D., Tang, C., Cai, X., Yan, Y., Zhang, S., Jin, B., Yu, S., Liang, X., Chu, Q., & Xu, Y. (2018). Effectiveness of comprehensive social support interventions among elderly patients with tuberculosis in communities in China: A community-based trial. *Journal of Epidemiology and Community Health, 72*(5), 369–375. https://doi.org/10.1136/jech-2017-209458

Maphalle, L. N. F., Michniak-Kohn, B. B., Ogunrombi, M. O., & Adeleke, O. A. (2022). Pediatric tuberculosis management: A global challenge or breakthrough? *Children, 9*(8), 1–42. https://doi.org/10.3390/children9081120

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. *Tanaffos, 17*(4), 241–249.

Noviyani, E., Fatimah, S., Nurhidayah, I., & Adistie, F. (2015). Upaya pencegahan penularan TB dari dewasa terhadap anak. *Jurnal Keperawatan Padjadjaran, 3*(2), 97–103. https://doi.org/10.24198/jkp.v3n2.5

Palacio, A., Garay, D., Langer, B., Taylor, J., Wood, B. A., & Tamariz, L. (2016). Motivational interviewing improves medication adherence: A systematic review and meta-analysis. *Journal of General Internal Medicine, 31*(8), 929–940. https://doi.org/10.1007/s11606-016-3685-3

Potty, R. S., Kumarasamy, K., Munjattu, J. F., Reddy, R. C., Adepu, R., Singarajipura, A., ... & Washington, R. (2023). Tuberculosis treatment outcomes and patient support groups, southern India. *Bulletin of the World Health Organization, 101*(1), 28. https://doi.org/10.2471/BLT.22.288237

Parwati, N. M., Bakta, I. M., Januraga, P. P., & Wirawan, I. M. A. (2021). A health belief model-based motivational interviewing for medication adherence and treatment success in pulmonary tuberculosis patients. *International Journal of Environmental Research and Public Health, 18*(24). https://doi.org/10.3390/ijerph182413238

Peimani, M., Monjazebi, F., Ghodssi-Ghassemabadi, R., & Nasli-Esfahani, E. (2018). A peer support intervention in improving glycemic control in patients with type 2 diabetes. *Patient Education and Counseling, 101*(3), 460–466. https://doi.org/10.1016/j.pec.2017.10.007

Resnicow, K., Harris, D., Wasserman, R., Schwartz, R. P., Perez-Rosas, V., Mihalcea, R., & Snetselaar, L. (2016). Advances in motivational interviewing for pediatric obesity: Results of the brief motivational

interviewing to reduce body mass index trial and future directions. *Pediatric Clinics of North America, 63*(3), 539–562. https://doi.org/10.1016/j.pcl.2016.02.008

Debby Syahru, R., Taufan, B., & Muhammad, L. (2016). The effect of peer support education on dental caries prevention behavior in school age children at age 10-11 years old. *Dental Jurnal (Majalah Kedokteran Gigi), 49*(4), 217-222. https://doi.org/10.20473/j.djmkg.v49.i4.p217-222

Siregar, P. A., Gurning, F. P., Eliska, E., & Pratama, M. Y. (2018). Analysis of factors associated with pulmonary tuberculosis incidence of children in Sibuhuan General Hospital. *Jurnal Berkala Epidemiologi, 6*(3), 268. https://doi.org/10.20473/jbe.v6i32018.268-275

Slikboer, R., Rehm, I. C., Lam, S., Maloney, A., & Nedeljkovic, M. (2020). A brief, residential peer-support retreat for trichotillomania: A mixed methods evaluation. *Australian Psychologist, 55*(2), 169–180. https://doi.org/10.1111/ap.12420

Suharyo, S., & Mubarokah, K. (2018). Development model of household contacts as a peer support to decrease the prevalence of pulmonary tuberculosis. *Jurnal Kesehatan Masyarakat, 13*(3), 404–410. https://doi.org/10.15294/kemas.v13i3.10632

Thomas, T. A. (2017). Tuberculosis in children. *Pediatric Clinics of North America, 64*(4), 893–909. https://doi.org/10.1016/j.pcl.2017.03.010

Van De Berg, S., Jansen-Aaldring, N., De Vries, G., & Van Den Hof, S. (2018). Patient support for tuberculosis patients in low-incidence countries: A systematic review. *PLoS ONE, 13*(10), 1–24. https://doi.org/10.1371/journal.pone.0205433

WHO. (2018). Global tubercolosis report 2018. *World Health Organization, 63*(10). https://apps.who.int/iris/handle/10665/274453

World Health Organization. (2014). Guidance for national tuberculosis programmes on the management of tuberculosis in children (No. WHO/HTM/TB/2014.03). *World Health Organization*. https://iris.who.int/bitstream/handle/10665/112360/9789241548748_eng.pdf

World Health Organization. (2019). WHO guidelines on tuberculosis infection prevention and control: 2019 update (No. WHO/CDS/TB/2019.1). *World Health Organization.* https://iris.who.int/bitstream/handle/10665/311259/9789241550512-eng.pdf

Zuliani, Z. (2019). The Effect of Motivational Interviewing on Despair, Motivation and Medication Compliance for Tuberculosis Patients. *Indonesian Journal of Health Research, 2*(1), 1–8. https://doi.org/10.32805/ijhr.2019.2.1.14