

THE ECONOMIC IMPACT AND ROLE OF HEALTH COMMUNICATION IN THE ECONOMIC RECOVERY OF TUBERCULOSIS (TB) PATIENTS IN INDONESIA

Olih Solihin

Department of Communication Science, Universitas Komputer Indonesia, Indonesia
Department of Communication Science and Community Development, IPB University, Indonesia

Djuara P Lubis

Department of Communication Science and Community Development, IPB University, Indonesia

Pudji Muljono

Department of Communication Science and Community Development, IPB University, Indonesia

Siti Amanah

Department of Communication Science and Community Development, IPB University, Indonesia

ABSTRACT

Tuberculosis (TB) patients suffer physically and bear the economic burden as many patients cannot work or generate income when ill. Concerning this issue, health communication plays a role in addressing the economic impact through advocacy strategies. This study aims to analyze how the economic impact and health communication advocacy conducted by Aisyiyah and Terjang NGOs contribute to TB patients' economic recovery in Bandung. This research adopts a cross-sectional approach involving data collection at a specific point in time. The findings indicate that the average percentage of patients who are the primary breadwinners of the family is 44.33%, patients who have lost their jobs is 82.33%, patients with loans is 38.67%, patients selling property is 55.67%, patients receiving government assistance is 68.33%, patients receiving assistance from private institutions is 21%, patients receiving assistance from family is 78%, and the median value of aid in the last three months is 21.83 USD. Aisyiyah and Terjang provide information on treatment costs, skills training, access to social support programs, and awareness of stigma and discrimination among TB patients. They conduct direct socialization activities at patient homes and provide entrepreneurship skills training to patient families. Additionally, they facilitate access to social programs and encourage reporting of discriminatory actions. Terjang also provides legal assistance to patients who experience discrimination. This health communication advocacy can enhance social and economic support for TB patients and their families.

Keywords: tuberculosis; health communication advocacy; economy; social support

INTRODUCTION

Tuberculosis (TB) is an infectious disease affecting physical and economic health (Silva et al., 2021). The economic impact of TB can be very detrimental to the patient and their family, especially if they live in urban areas like Bandung City (Dinas Kesehatan Kota Bandung, 2020). TB patients often experience the inability to work due to their poor health condition, resulting in reduced income and economic instability.

Bandung is one of Indonesia's cities with the highest number of TB patients (Dinas Kesehatan

Kota Bandung, 2020). The Bandung City Health Office reported 2021 that there were 6,281 recorded TB patients (Dinas Kesehatan Kota Bandung, 2020). The Case Notification Rate (CNR) in 2021 was higher than in 2020, which was 339/100,000 population. This case also means that health services can more widely identify TB patients in the community. The comparison of CNR indicators in Bandung City from 2015-2021 is shown in Figure 1.

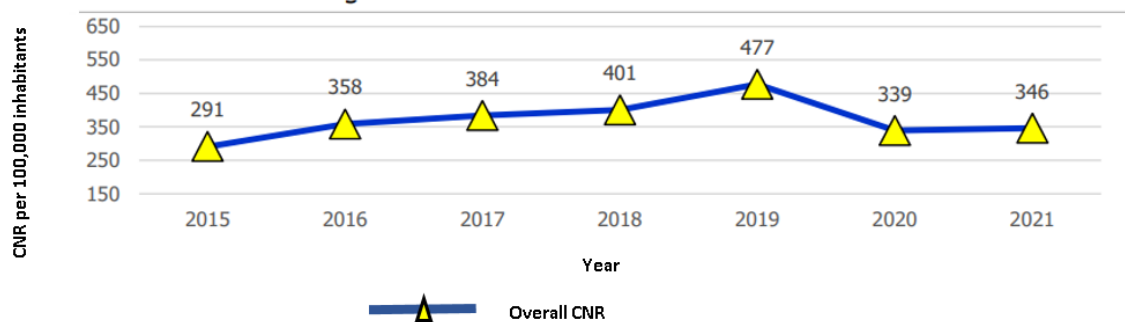


Figure 1: The comparison of CNR indicators in Bandung City from 2015-2021

Source: Bandung Public Health Office (2021)

In some cases, TB patients may even have to stop working and experience long-term unemployment. The high cost of TB treatment, which often has to be done for an extended period, can also burden the patient's family finances. This cost can worsen the family's economic situation and limit their access to quality healthcare services (Liu et al., 2020).

The economic impact of TB is not only limited to the patient and their family but can also affect the overall economy in the area. TB patients who are not treated or do not recover can transmit the disease to others, including co-workers and family members, disrupting the productivity and well-being of the community. Therefore, appropriate TB prevention and treatment actions are essential to minimize the economic impact of this disease in Bandung City.

However, the Bandung City Health Department has yet to have exact figures on the magnitude of the economic impact of TB on patients in Bandung City. However, based on experience and research in other areas, the economic impact of TB can be very detrimental to patients and their

families, especially for those in areas with low economic levels (Hayati & Musa, 2016).

Regarding this issue, health communication has a role in recovering economic impacts. Health communication advocacy strategies in the economic recovery of TB patients can be carried out through campaigns to raise awareness of the importance of increasing understanding of the importance of treatment, improving access to treatment, providing skills training, and forming cooperation networks (Jain et al., 2020).

Several studies have shown that TB patients experience an inability to work, which can lead to loss of income and cause the patient's family to experience economic difficulties. In addition, the high cost of TB treatment can also burden the patient's family finances and limit their access to quality healthcare services. Susilo conducted the first study (Wulan, 2020) Burden, entitled "Economic Analysis and Impact of Tuberculosis on Welfare in Bengkulu City," which showed a significant decrease in income in the households of TB patients. It is mentioned that 43.7% of households of TB patients are forced to change

their food consumption patterns, adjusted to their declining purchasing power.

Furthermore, a study conducted by (Martinez et al., 2020), showed that the economy of TB patients is at risk of shortages, so social assistance efforts are needed from their environment so that patients can meet the economic needs of their families. Another study in India showed that effective health communication advocacy could help raise awareness about the economic burden of TB on patients and promote suitable social and economic support programs. This study carried out advocacy through social media and public communication campaigns, which successfully increased community participation and support for social and economic support programs for TB patients (Gupta et al., 2018).

Based on the background and previous research, this study intends to analyze the economic impact and role of health communication in the economic recovery of TB patients in Bandung City. This study differs from previous research, where the research conducted in Bengkulu uses a quantitative approach, while this study uses a qualitative approach. The qualitative approach was chosen to understand TB patients' experiences and perceptions in depth so that the research results can provide a more comprehensive picture of the impacts felt by TB patients in Bandung City. The results of this research can enrich the literature for further research.

METHOD

This study employed a cross-sectional approach involving data collection at a specific point in time. The research was conducted in three Integrated Health Service Units (UPT) of Primary Health Centers (Puskesmas) in Bandung, Indonesia: UPT Garuda, UPT Sukahaji, and UPT Cibuntu. These three UPT Puskesmas were chosen due to their highest number of Tuberculosis (TB) patient cases handled. The study population consisted of TB patients in the three UPT Puskesmas who met four inclusion criteria, which are as follows: a. Patients who have undergone at least three months of treatment. b. The study only involved patients aged 21 years or older. c. Patients who are married or have family financial responsibilities.

The research sample comprised 60 TB patients who met the inclusion criteria in each UPT Puskesmas. This number was chosen to balance the potential diversity of data and the limitations of time and research resources. Data were collected through interviews using a specially designed questionnaire. The questionnaire covered questions regarding the economic impact experienced by TB patients and the role of health communication in their economic recovery. The collected data will be analyzed using descriptive statistical methods. Data on the economic impact will be processed to identify the financial burden the patients and their families bear. In addition, data on the role of health communication will be analyzed to evaluate the effectiveness of communication strategies in supporting TB patients' economic recovery.

DISCUSSION

The population of Tuberculosis (TB) patients consisted of 260 TB patients undergoing treatment in the three designated UPT Puskesmas, namely UPT Sukahaji, UPT Garuda, and UPT Cibuntu. From this population, we sampled 60 individuals, comprising 28 patients from UPT Garuda, 17 from UPT Sukahaji, and 15 from UPT Cibuntu. Sample selection was based on three categories: patients who have undergone at least three months of treatment, those aged above 21 years, and those who are already married. Using these criteria, the researchers randomly selected 60 eligible patients from 260 patients undergoing treatment in the three designated UPT Puskesmas. Data from this sample of 60 patients will be used for analysis in this study.

Table 1: Characteristics of TB patients

	UPT Garuda		UPT Sukahaji		UPT Cibuntu	
	n	(%)	n	(%)	n	(%)
Gender						
Male	11	(68.8)	13	(68.4)	17	68.0
Female	5	(31.3)	6	(31.6)	8	32.0
Age						
21–29	7	(43.8)	9	(47.4)	15	(60.0)
30–39	6	(37.5)	9	(47.4)	8	(32.0)
40–49	3	(18.8)	1	(5.3)	2	(8.0)
Occupation						
Private sector employee	6	(37.5)	8	(42.1)	8	(32.0)
Self-employed	4	(25)	5	(26.3)	9	(36.0)
Businessman	3	(18.8)	5	(26.3)	3	(12.0)
civil servant	3	(18.8)	1	(5.3)	5	(20.0)

Most patients in all three UPTs are males, with a percentage of approximately 68%. Female patients account for about 32% of the total patients. The age range of the patients is divided into three categories: 21-29, 30-39, and 40-49. The majority of patients fall into the 21-29 age group in UPT Garuda (43.8%), UPT Sukahaji (47.4%), and UPT Cibuntu (60%). The 30-39 age range also has a significant percentage in UPT Garuda (37.5%) and UPT Sukahaji (47.4%). The

number of patients in the 40-49 age range tends to be lower. The majority of patients in all three UPTs has different occupations. Private sector employees and self-employed individuals are the main occupations in UPT Garuda and UPT Sukahaji. In UPT Cibuntu, self-employed individuals are the largest occupation, followed by private sector employees.

Table 2: Indicators of Economic Impact on TB Patients

	UPT Garuda	UPT Sukahaji	UPT Cibuntu
The primary breadwinner of the family	76 %	26 %	31 %
Loss of a job	92 %	88 %	67 %
Patients who have loans	35 %	25 %	56%
Patient selling property	36 %	33 %	98 %
The patient gets government assistance	40 %	75 %	90%
Patients get help from private institutions	24 %	22 %	17 %
Patients who get help from the family	76 %	70%	88 %
The median value of aid in the last three months (USD)	22	23	20,5

The data above provides information about patients' social and economic conditions in each Community Health Center (UPT). There are differences in the percentage of primary breadwinners in the family, job loss, loan ownership, property selling, and receiving assistance from the government, private institutions, and family across the three UPTs. Additionally, there are variations in the median value of aid received in the last three months.

This data can be used to plan more effective and targeted assistance programs for patients in each UPT.

Economic Impact

Tuberculosis (TB) is an infectious disease caused by the *Mycobacterium tuberculosis* bacterium. TB remains a significant global health problem, especially in developing countries with

limited access to healthcare. In this article, we discussed the economic impact of TB on patients and communities worldwide (Wong et al., 2022).

Economic Impact on TB Patients TB patients often have to take time off work to receive treatment and healthcare. This impact can lead to loss of income and permanent job loss. In addition, the cost of TB treatment can be a heavy financial burden for patients and their families, especially in countries without a robust healthcare system. The costs associated with TB treatment include healthcare costs, medication costs, transportation costs, and daily living expenses. These costs can worsen poverty and trap TB patients and their families in a cycle of poverty that is difficult to break (Courtwright & Tumer, 2010).

Furthermore, TB patients often experience stigma and discrimination from society. This experience can make finding or maintaining a job difficult and lead to social isolation. Stigma and discrimination can also worsen the health of TB patients and cause delays in seeking medical care. **Economic Impact on Communities** TB also has a broader economic impact on communities. High healthcare costs and loss of income can reduce purchasing power and economic growth. The increasing number of TB patients can also reduce workforce productivity and increase the financial burden on healthcare systems and governments (Courtwright & Tumer, 2010).

TB can also reduce foreign investment and tourism, resulting in economic losses for countries with significant TB problems. For example, Indonesia, one of the countries with a high TB incidence rate, is estimated to lose around 1.5 billion US dollars per year due to TB (Ukwaja et al., 2012).

TB Control Efforts Effective TB control efforts can help reduce the economic impact of TB. One primary strategy is to increase access to affordable and effective healthcare. A robust and reliable healthcare system can help reduce the cost of TB treatment and improve treatment outcomes. Efforts to reduce stigma and discrimination can also help increase access to healthcare and reduce the economic impact on TB patients. Unfortunately, no official data has been released by the Bandung city government regarding the economic impact of TB. However, based on interviews with TB patients, it is evident that there is indeed an economic impact.

TB patients in Bandung may miss work to receive treatment and medical care, leading to a loss of income. The cost of TB treatment, including healthcare expenses, medication, transportation, and daily necessities, can be a significant financial burden for patients and their families, particularly those without substantial financial support. This phenomenon can worsen poverty and lead to a cycle of poverty that is difficult to break. The stigma and discrimination surrounding TB may also affect patients' ability to find or keep a job, resulting in social isolation and difficulties earning a living. The economic impact of TB is not only limited to patients but also extends to the broader community. The high cost of healthcare and loss of income can reduce the community's purchasing power and hinder economic growth. An increase in the number of TB patients can also reduce workforce productivity and increase the financial burden on the healthcare system and the government (Machmud et al., 2020).

Health Communication Advocacy

Health communication advocacy aims to promote and increase public awareness of important health issues, such as preventing, treating, and managing specific diseases (Renata, 2014). Health communication advocacy aims to influence health policies and community behavior to improve overall health. Health communication advocacy involves various media such as advertisements, brochures, banners, social media, and health campaigns. The aim is to reach a specific audience with relevant and measurable health messages (Mckee et al., 2014; Karin et al., 2014).

Health communication advocacy involves various stakeholders, such as governments, non-profit organizations, healthcare institutions, and community leaders. It can be done in various ways, such as through campaign programs, meetings and discussions, seminars, workshops, or other social activities (Agustina et al., 2019). The role of stakeholders in advocating for health communication in handling TB is described in Table 3.

Table 3: The Role of Stakeholders

Group	Role
Government	Promote policies and programs related to community welfare through mass media, social campaigns, and conferences. Engage in dialogue with NGOs and the community to understand problems and find solutions.
NGOs	Advocate for the interests of marginalized communities or specific groups through social campaigns, providing information and knowledge, and lobbying the government and healthcare institutions for support.
Healthcare Institutions	Raise public awareness about health and encourage the government to improve access and quality of healthcare services through social media and health campaigns. Advocate with the government to increase the budget and resources for healthcare services.
Community leaders	Mobilize support and advocate for community interests. Serve as a liaison between the community and the government. Mobilize the community to participate in social campaigns or actions. Promote essential issues and raise public awareness about them through social media.

Source: Schievo (2014)

In addressing specific diseases such as tuberculosis, health communication advocacy is essential to increase public awareness of the disease and the importance of proper prevention and treatment. By promoting accurate and relevant information, health communication advocacy can help reduce stigma and discrimination against TB patients and increase community and government support to improve accessibility to treatment and social support for TB patients (White et al., 2018).

Health communication advocacy by NGOs in supporting the economy of TB patients aims to raise public awareness about the economic impact on TB patients and their families, including treatment costs, loss of income, and other economic burdens that often weigh heavily on TB patients and their families (Coprada et al., 2016).

Through health communication advocacy, the public can obtain information about social and economic support programs available to TB patients and their families, such as health insurance programs, social assistance, and skills training. The public can also be informed about the rights of TB patients regarding access to treatment and social support (Riyadi, 2018).

Furthermore, health communication advocacy can help increase support from stakeholders, including healthcare institutions, governments,

and non-governmental organizations, to provide better social and economic support programs for TB patients. Therefore, health communication advocacy can help reduce the economic burden on TB patients and their families, allowing them to focus more on their health recovery (Mckee et al., 2014).

In this context, health communication advocacy can also help increase public awareness about the importance of TB prevention and supporting TB patients to overcome the economic problems associated with this disease. In this way, the public can help prevent the spread of TB and strengthen social support for TB patients and their families (Al Mossawi et al., 2019).

Advocacy for TB patients' economic impact in Bandung involves various efforts aimed at helping TB patients and their families overcome the economic burden associated with this disease. Health communication advocacy regarding the economic impact on TB patients by the Aisyiyah TB Care and Tejang NGOs in Bandung includes providing information on treatment costs, skills training for TB patient families, access to social support programs, and raising awareness on stigma and discrimination (Figure 2).



Figure 2: Health Communication Advocacy on managing the economic impact on TB patients in the city of Bandung

Source: Author's Work (2022)

Providing information on treatment costs.

Through health communication advocacy, the public can be informed about the cost of TB treatment and how to access health insurance programs or financial assistance that can help TB patients pay for treatment costs. The Indonesian government has already provided free medication for TB patients (Zvavamwe et al., 2009). However, information about this has yet to be fully received by the community in Bandung. Nonetheless, many patients are forced to pay for treatment costs because they seek treatment at clinics or hospitals that are not cooperating with the government, and they buy medication at pharmacies that do not cooperate with the government, as well as TB patients who have complications.

According to Asiyah and Terjang, this reality is often found in the field when conducting TB awareness campaigns in the community, which worsens the economic sector of the TB patient's family. Ironically, TB patients, especially adults with economic responsibilities, generally do not work after being diagnosed with TB. Automatically, the TB patient's family economy deteriorates.

Therefore, Asiyah often conducts TB treatment awareness campaigns, and in principle, the government has provided TB medication free of charge. Asiyah conducts this campaign through patient visits, visits to markets, boarding schools, schools, health exhibitions, and religious gatherings. In addition, Asiyah also uses website media, social media, and free distributed books. Similarly, Terjang is also actively conducting TB treatment awareness campaigns in the community through patient visits and mentoring. Terjang uses social media, especially YouTube, for TB treatment awareness and education for the community.

Skills Training

Health communication advocacy can also help provide skills training for TB patients and their families to improve their chances of finding employment or increasing their income. As previously explained, TB patients often face economic difficulties (Hasmiati et al., 2021). As a result, Asiyah TB Care provides home-based small to medium-enterprise skills training for TB patients' families.

Asiyah TB Care has a business development division that provides small to medium-

enterprise skills training for TB patients' families. Trainers are small to medium enterprise practitioners in Bandung. Training for TB patients' families is done through seminars and hands-on training. Terjang conducts routine seminars on business skills. Terjang also provides hands-on training in the field. Terjang even builds small to medium enterprises as supporting organizations and examples for TB patients' families.

Access to Social Support Programs

Communities can be informed about available social support programs for TB patients and their families, such as food aid, temporary housing, or other assistance programs. These two organizations pass on information about economic aid programs for TB patients from both government and private institutions (Simoes et al., 2021). Asiyiyah TB Care disseminates program information through various activities, including religious gatherings. Likewise, Terjang passes on this information to the community through its mentoring program. Terjang keeps a complete record of the TB patients they treat.

Terjang also frequently collaborates with the Bandung Health Department in managing social assistance programs for TB patients. In addition, Terjang actively collaborates with foreign TB care institutions, one of which is USAID. The collaboration between Terjang and USAID began in 2018 and continues to this day. One form of support from USAID is financial assistance that TB patients can use to support their recovery and build independent businesses at home.

Increasing Awareness of Stigma and Discrimination

Health communication advocacy can help increase public awareness of the stigma and discrimination often experienced by TB patients and their families, thereby reducing the negative impact that may arise on their economic well-being (Simoes et al., 2021). To this day, TB patients still have to face the bitter reality of negative stigma and discriminatory actions from their surroundings. Ironically, negative stigma towards TB patients comes not only from their surroundings but also from themselves. This stigma stems from their lack of knowledge about TB and its treatment.

This stigma also leads to a lazy attitude, one of which is being lazy to strive for their family's economic needs. This statement was expressed by TB patient Ahdin (29), who admitted to feeling ashamed to leave the house because he often received ridicule from his surroundings. Yosef (30) admitted to being lazy to sell because, besides having a weak body, he also received negative labels from his friends. Dewi (34), Iman (27), and Heru (45) are TB patients who were fired from their workplace due to having TB.

Seeing this reality, Terjang NGOs established a legal aid institution for TB patients mistreated by their workplace or surroundings. LSM Terjang assigns its employees to take courses on the law so that they understand the procedures if there are reports of discriminatory actions against TB patients.

CONCLUSION AND RECOMMENDATION

This data concludes that Tuberculosis (TB) has a significant economic impact on patients and their families. The percentages of patients who are the family's primary breadwinners, have lost their jobs, have loans, sell property, receive government assistance, receive assistance from private institutions, and receive assistance from family members reflect the economic burden TB patients face. Additionally, the median value of aid received in the last three months provides an overview of the level of support patients receive in supporting their economic recovery. TB care organizations such as Aisyiyah and Terjang, providing information, training, access to social support, and advocacy against stigma and discrimination, are crucial in assisting the economic recovery of TB patients and their families. This data provides a strong basis for planning more effective assistance programs that focus on the economic recovery of TB patients in Indonesia.

REFERENCES

- Ag Agustina, R., Dartanto, T., Sitompul, R., Susiloretni, K. A., Achadi, E. L., Taher, A., ... & Khusun, H. (2019). Universal health coverage in Indonesia: concept, progress, and challenges. *The Lancet*, *393*(10166), 75-102. [https://doi.org/10.1016/S0140-6736\(18\)31647-7](https://doi.org/10.1016/S0140-6736(18)31647-7)
- AlMossawi, H. J., Longacre, C., Pillay, Y., & Kak, N. (2019). A social and behavior change

- communication framework for addressing delays to appropriate TB care and treatment. *Journal of Lung Health and Diseases*, 3(4).
<https://doi.org/10.29245/2689-999X/2019/4.1156>
- Coprada, L., Yoshimatsu, S., Querri, A., Lopez, E., Agujo, P., Paulino, M. R., ... & Ohkado, A. (2016). A review of tuberculosis contact investigations in the poor urban areas of Manila, the Philippines. *Public Health Action*, 6(4), 220-225.
<https://doi.org/10.5588/pha.16.0042>
- Courtwright, A., & Turner, A. N. (2010). Tuberculosis and stigmatization: pathways and interventions. *Public health reports*, 125(4_suppl), 34-42.
<https://doi.org/10.1177/003335491012505407>
- Dinas Kesehatan Kota Bandung. Dinkes Kota Bandung Raih Peringkat Ke-2 Penanganan TB Terbaik pada TB Summit 2021. Vol. 20, Dinkes.Bandung.Go.Id. 2021. p. 2021.
- Dinas Kesehatan Kota Bandung. Profil Dinkes Kota Bandung 2020. 2021.
- Gupta, D., Ariyaratne, K., Refai, A. C., & Rathnayake, S. (2018). Confronting Health Communication Challenges Addressing Tuberculosis in Sri Lanka: Synopsis.
<https://doi.org/10.31211/interacoes.n35.2018.e1>
- Hasmiati, H., Rita, R., & Amiruddin, A. (2021). Dakwah Aisyiyah melalui kader Tuberkulosis (Tb) care di Kabupaten Sinjai. *Jurnal Ilmu Dakwah*, 41(1), 30-42.
[10.21580/jid.v41.1.7343](https://doi.org/10.21580/jid.v41.1.7343)
- Hayati, D., & Musa, E. (2016). Hubungan Kinerja Pengawas Menelan Obat Dengan Kesembuhan Tuberkulosis Di UPT Puskesmas Arcamanik Kota Bandung. *Jurnal Keperawatan BSI*, 4(1).
<https://doi.org/10.31311/v4i1.401>
- Jain, V. K., Iyengar, K. P., Samy, D. A., & Vaishya, R. (2020). Tuberculosis in the era of COVID-19 in India. *Diabetes & Metabolic Syndrome: Clinical Research & Reviews*, 14(5), 1439-1443.
<http://doi.org/10.1016/j.dsx.2020.07.034>
- Liu, Y., Xu, C. H., Wang, X. M., Wang, Z. Y., Wang, Y. H., Zhang, H., & Wang, L. (2020). Out-of-pocket payments and economic consequences from tuberculosis care in eastern China: income inequality. *Infectious Diseases of Poverty*, 9(01), 26-35.
- Machmud, R., Medison, I., & Yani, F. F. (2020). Cultural and Religious Belief Approaches of a Tuberculosis Program for Hard-to-Reach Populations in Mentawai and Solok West Sumatera, Indonesia. *Kesmas: Jurnal Kesehatan Masyarakat Nasional (National Public Health Journal)*, 15(4).
<http://dx.doi.org/10.21109/kesmas.v15i4.3374>
- Martinez, L., Cords, O., Horsburgh, C. R., Andrews, J. R., Acuna-Villaorduna, C., Ahuja, S. D., ... & Zhu, L. (2020). The risk of tuberculosis in children after close exposure: a systematic review and individual-participant meta-analysis. *The Lancet*, 395(10228), 973-984.
[http://doi.org/10.1016/S01406736\(20\)30166-5](http://doi.org/10.1016/S01406736(20)30166-5)
- McKee, N., Becker-Benton, A., & Bockh, E. (2014). Social and behavior change communication. *The handbook of development communication and social change*, 278-297.
- Riyadi, I. (2018). Analisis Strategi Komunikasi Community TB-HIV Care Aisyiyah dalam Pendampingan Pasien TB-MDR di RSUD Labuang Baji Makassar. *KAREBA: Jurnal Ilmu Komunikasi*, 7(2), 256-263.
- Schiavo, R. (2013). *Health communication: From theory to practice* (Vol. 217). John Wiley & Sons.
- Silva, S., Arinaminpathy, N., Atun, R., Goosby, E., & Reid, M. (2021). Economic impact of tuberculosis mortality in 120 countries and the cost of not achieving the Sustainable Development Goals tuberculosis targets: a full-income analysis. *The Lancet Global Health*, 9(10), e1372-e1379.
[https://doi.org/10.1016/S2214-109X\(21\)00299-0](https://doi.org/10.1016/S2214-109X(21)00299-0)
- Simões, D., Matulionytė, R., Stoniene, L., Wysocki, P., Kowalska, J., Gasbarrini, N., ... & Jakobsen, S. F. (2021). National multi-stakeholder meetings: a tool to support development of integrated policies and practices for testing and prevention of HIV, viral hepatitis, TB and STIs. *BMC infectious diseases*, 21, 1-10.

<https://doi.org/10.1186/s12879-021-06492-y>

- Ukwaja, K. N., Modebe, O., Igwenyi, C., & Alobu, I. (2012). The economic burden of tuberculosis care for patients and households in Africa: a systematic review. *The International Journal of Tuberculosis and Lung Disease*, 16(6), 733-739. <https://doi.org/10.5588/ijtld.11.0193>
- White, R. G., Charalambous, S., Cardenas, V., Hippner, P., Sumner, T., Bozzani, F., ... & Churchyard, G. (2018). Evidence-informed policy making at country level: lessons learned from the South African Tuberculosis Think Tank. *The International Journal of Tuberculosis and Lung Disease*, 22(6), 606-613. <https://doi.org/10.5588/ijtld.17.0485>
- Wilkins, K. G., Tufte, T., & Obregon, R. (2014). *The handbook of development communication and social change*. John Wiley & Sons.
- Wong, Y. J., Ng, K. Y., & Lee, S. W. H. (2022). Digital health use in latent tuberculosis infection care: a systematic review. *International journal of medical informatics*, 159, 104687. <https://doi.org/10.1016/j.ijmedinf.2022.104687>
- Wulan, S. (2020). Analisis Beban Ekonomi dan Dampak Karena Tuberculosis terhadap Kesejahteraan di Kota Bengkulu. *CHMK Health Journal*, 4(1), 103-111.
- Zvavamwe, Z., & Ehlers, V. J. (2009). Experiences of a community-based tuberculosis treatment programme in Namibia: a comparative cohort study. *International journal of nursing studies*, 46(3), 302-309. <https://doi.org/10.1016/j.ijnurstu.2008.09.013>

ABOUT THE AUTHORS

Olih Solihin, email:

olih.solihin@email.unikom.ac.id

Olih Solihin, Department of Communication Science, Universitas Komputer Indonesia, Indonesia

Students of the Department of Communication Science and Community Development, IPB University, Indonesia

Djuara P Lubis, Department of Communication Science and Community Development, IPB University, Indonesia

Pudji Muljono, Department of Communication Science and Community Development, IPB University, Indonesia

Siti Amanah, Department of Communication Science and Community Development, IPB University, Indonesia