

Nurses Monitor Medication with a Schedule for Undrop-Out Program (SRAGAM) for TBC Clients

Andi Rinaldo, Aprina*

Nursing Department, Poltekkes Kemenkes Tanjung Karang, Bandar Lampung, Indonesia

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ABSTRACT

Regulation Minister of Health Republic Indonesia Number 15 of 2022 through 6 pillars of health transformation, one of which is primary service, namely medication adherence education. Ministry of Health Republic Indonesia, (2020) the 2020-2024 RPJMN policy directions and Sustainable Development Goals (SDGs) regarding six diseases, one is Tuberculosis (TBC). TBC prevalence in Southeast Asia (44%), Indonesia (8.5%), Lampung (40.2%), and South Lampung (41%). Indonesia's strategy to reduce the incidence of TBC has six plans: the 2020-2024 national tuberculosis program, optimizing promotion and prevention efforts, providing tuberculosis prevention treatment, and controlling. TBC treatment 6-24 months resulted in drop-out treatment. Nurses play a supervisory role and carry out counseling to increase patient adherence. The Schedule For Undrop-Out Program (SRAGAM) is a media innovation to improve patient medication adherence. SRAGAM makes it easier for patients, PMOs, and health workers to arrange medication-taking schedules. The purpose is to determine the effect of SRAGAM on increasing patient adherence. Research is a quantitative one-group pretest-posttest with a control group preexperimental design. Respondents were patients who were taking drugs. The number of samples was 32 respondents (16 intervention:16 control). The research was from December 2022 to May 2023 in Hajimena Health Center, South Lampung. Data analysis using t-test. The results of the study mean value intervention group (5.6875) and control group (4.1250). The P-value of 0.000 concluded that SRAGAM effectively increased the number of patients taking medication. The results will become educational media in preventing the incidence of dropping medication in patients.

Corresponding author:

Aprina

Nursing Department, Poltekkes Kemenkes Tanjung Karang, Bandar Lampung, Indonesia

Email: aprinamurhan@yahoo.co.id

INTRODUCTION

Regulation of the Minister of Health of the Republic of Indonesia Number 15 of 2022 concerning the six pillars of transformation to support Indonesia's health, one of which is the transformation of primary services, namely the education of the population in the form of a campaign for treatment adherence (Kementerian Kesehatan RI, 2022). Based on the 2020-2024 RPJMN policy directions and the Sustainable Development Goals (SDGs) regarding six focuses on six diseases, one of them is the incidence of Tuberculosis (TBC) (Kementerian Kesehatan RI, 2020).

TBC is a disease caused by *Mycobacterium tuberculosis*, which can attack the lungs and all body parts (Puspasari et al., 2019). TB is a public health problem that is a global challenge. Geographically, the highest number of TBC

sufferers in 2019 was in the WHO region in Southeast Asia (44%), with the incidence of TB in Indonesia at (8.5%) (World Health Organization, 2020). The prevalence of TB in Lampung Province (40.2%) and South Lampung Regency (41%) (Dinas Kesehatan Provinsi Lampung, 2020).

Global Report TBC data, 2020 shows that the incidence of TBC in Indonesia was 312 per 100,000 population in 2019. The TBC death rate was 34 per 100,000 population (total deaths 92,000), excluding the death rate due to TBC/HIV. WHO estimates that there are 24,000 cases of MDR in Indonesia (Ditjen P2P, 2020).

The END TBC strategy for 2020 was formed to decrease the number of TBC cases, namely reducing TB by 20 percent in 2015-2018 cases. However, between 2015 and 2018, the cumulative decrease in TBC cases was only 6.3% (World Health Organization, 2020). The strategy in Indonesia is to reduce the incidence of TB

with six national TB program strategies for 2020-2024, one of which is optimizing promotion and prevention efforts, providing TBC prevention treatment, and controlling TBC infection (Kementerian Kesehatan RI, 2020).

TBC treatment takes 6–24 months, depending on the category of TBC you are suffering from. Drop Out (DO) is a condition where a patient has been on medication for >1 month and does not take medication for two consecutive months or more before the treatment period is over. Non-compliance with treatment results in a high rate of therapy failure, thereby increasing the risk (Pameswari et al., 2016). Success in treating TBC patients is influenced by adherence to treatment. Factors affecting a person's commitment to treatment are age, knowledge, free time, supervision, type and dosage of drugs, work and attitudes, and counseling from health workers. Nurses act as supervisors and counsel to increase patient medication adherence (Wulandini et al., 2020).

TBC treatment can fail if drug guidance is inadequate, the drug dose is insufficient, medication is not taken regularly, the treatment period is less than appropriate, and drug resistance occurs, resulting in new problems such as multidrug-resistant tuberculosis (MDR-TBC) (Fitri et al. al., 2018).

Various media and technological innovations for TBC patient drug adherence have been created. Research by Yunita et al. (2019) developed mHealth PATUH OAT, an android-based application for monitoring and motivating the treatment of TB patients. The PATUH OAT mHealth application still needs to be further developed so that the developed features can function optimally. Based on the results of observations made by researchers at the Hajimena Village Health Center, it was found that 82% of patients still had low adherence to taking TB medication.

Media and technological innovations used today rarely apply various aspects simultaneously (not dependent on internet access, can be used by all groups, have artistic value, are efficient, and are easy to carry anywhere). Based on this phenomenon, the researchers created an innovative product that fulfilled all of these aspects: the Schedule For Undrop-Out Program (SRAGAM), which was packaged as a bag containing a schedule given to TB sufferers to increase TB patient medication adherence.

This study aimed to determine the effect of using SRAGAM on the level of adherence of TBC patients in taking medication. This study

hypothesizes that using SRAGAM impacts the level of patient adherence to medication.

METHOD

This research is quantitative research with a pre-experimental research design type intact-group comparison. This research was conducted in Hajimena Village, Lampung, in the working area of the Hajimena Health Center from December 2022 till May 2023. This research used a non-random sampling technique. Calculating the sample using the Federer formula obtained a total sample of 32 respondents with details of 1:1 with 16 intervention and 16 control groups.

The independent variable in this study was SRAGAM, while the dependent variable was the patient's adherence to TBC medication. The data collection instrument in this study used a standardized Morisky Medication Adherence Scales (MMAS-8) questionnaire by Morisky in 2009. The questionnaire with the Gultman scale consists of 8 questions. The questions in this questionnaire include the frequency of forgetting to take medication, the gap in stopping medication without a doctor's knowledge, and the ability to control oneself to keep taking medication. The medication adherence level consists of 8 questions with two yes and no answer choices.

Univariate data analysis determined the mean, standard deviation, minimum and maximum values. Bivariate analysis was carried out using t-dependent and t-independent statistical tests of patient adherence in taking medication before and after using SRAGAM's innovative product. In this study used an α value of 5% (0.05). H_0 is rejected if the p -value < 0.05, which means that using SRAGAM affects patient compliance in taking the drug. This research has received ethical clearance at the Poltekkes Kemenkes Tanjung Karang, with ethically proper numbers 396/KEPK-TJK/VI/2023.

SRAGAM concept

SRAGAM is a product created as media and innovation that applies various aspects, namely not relying on internet access, can be used by all groups, has artistic value, is efficient and is easy to carry anywhere. SRAGAM aims to make it easier for patients, PMOs, and health workers to arrange medication-taking schedules and monitor patient medication adherence to reduce the incidence of drop-taking medication for TBC patients. SRAGAM is packaged as a bag containing a schedule and storage area for

medicines and health education sheets related to TBC that can be applied by patients and their families and health workers as a guide in complying with taking medication in cases of TBC. The materials for making SRAGAM are patchwork with ethnic Lampung motifs. The schedule is designed using a computer application and measures 30x20cm, accompanied by educational sheets related to tuberculosis.

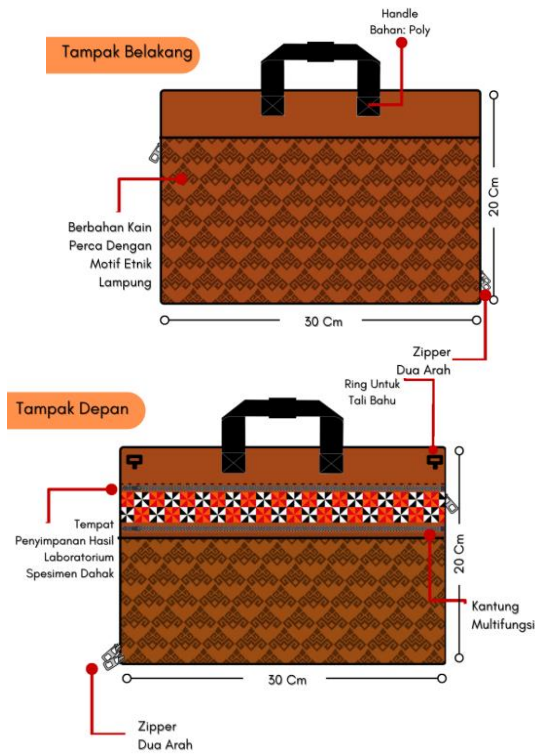


Figure 1. SRAGAM front and back design

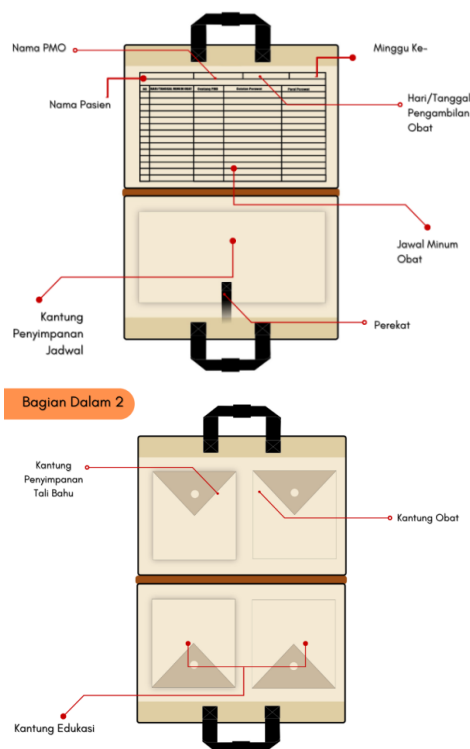


Figure 2. SRAGAM inside design

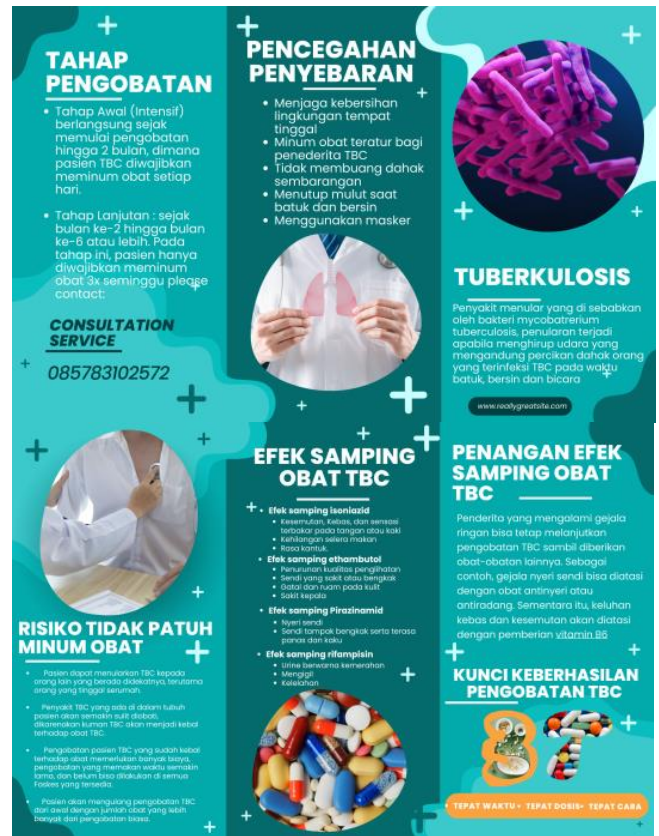


Figure 3. Educational sheet design

Figure 1. shows the front and back design of SRAGAM as a special place for storing patient laboratory results to make it efficient and a multifunctional storage bag that can be used to store personal protective equipment such as masks.

Figure 2. and Figure 3. show the inner design of the SRAGAM consisting of a place for taking medication equipped with an identity column and notes for health workers, a unique bag for storing medication schedules, a place for storing medicine, and an educational bag containing educational sheets related to tuberculosis.

RESULTS

Based on Table 1. the results obtained were that the majority of respondents were male, as many as 18 respondents (56.3%), and the employment status of most respondents were daily laborers, with a total of 10 respondents (31.3%). The educational level of most respondents was junior high school, with as many as 11 respondents (34.4%).

Table 1. Distribution of respondent characteristics

Respondents	f	%
Gender		
Male	18	56.3
Female	14	43.8
Work		
Housewife	9	28.1
Daily Labor	10	31.3
Farmer	5	15.6
Self-employed	5	15.6
Government employees	3	9.4
Education		
ES	9	28.1
JHS	11	34.4
SHS	9	28.1
Bachelor	3	9.4
Amount	32	100.0

Table 2. Distribution of the average level of compliance in patients taking medicine

Group	Variable	Mean	Std. Deviasi
Intervention (SRAGAM)	Pre-test	3.2500	1.94936
	Post-test	5.6875	1.30224
Control (SOP)	Pre-test	3.3750	2.21736
	Post-test	4.1250	1.85742

Table 2 shows that the average level of patient medication adherence before and after using SRAGAM was 3.2500 and 5.6875, and the intermediate patient medication adherence level before and after intervention with the available SOPs was 3.3750 and 4.1250.

Table 3. Test results analysis of differences in the compliance level of taking medicines with the group intervention and the control

Variable	Mean	Min-Max	p-value
Intervention (SRAGAM)	5.6875	4-8	0.010
Control (SOP)	4.1250	2-8	

Based on Table 3, which shows the results of the independent sample t-test, namely $p\text{-value}=(0.010)$, it can be concluded that there is an average difference in the level of patient compliance in taking medication in the intervention and control groups. The mean value in the intervention group (5.6875) was more significant than the control group (4.1250), which means that using SRAGAM media increased patient adherence to medication.

Table 4. Test results for analysis of patient compliance level in taking medication in the intervention and control group

Group	Mean	Std. D	p-value
Intervention	-2.43	1.15289	0.000
Control	-.75	.77460	

Based on Table 4. it was found that there was a mean difference before and after in the intervention group of 2.43 with an SD of 1.15289 and a $p\text{-value}=(0.000)<\alpha (0.05)$, which means that there was an effect of using SRAGAM. In the control group, the results showed that there was a mean difference before and after of .75 with an SD of .77460 and a $p\text{-value}=(0.020)<\alpha (0.05)$.

DISCUSSION

Differences in patient compliance levels in taking medication before and after using SRAGAM and SOP

Based on the study's results, the two methods have proven effective in helping increase patient adherence to medication. Still, statistically, it shows that the level of patient adherence using the SRAGAM device can increase commitment to taking medication in a better and more timely manner.

This is in line with research conducted by Yani et al. (2020) the results obtained from 42 patients (total population), that there were differences in knowledge before and after health education was carried out about the response to routine treatment of pulmonary TB with the value of increasing knowledge before and after counseling 5.59 to 8.30 the average mean value or t-count value is 11.835. In addition, the study results provide an overview of respondents' intermediate level of education, namely junior high school. This is supported by the theory put forward by Absor et al. (2020) that the education level of respondents is closely related to the level of compliance of respondents in taking medication. Respondents with higher education, if they experience illness, will increasingly need health service facilities as a place of treatment for themselves and their families. The more individuals have a higher level of education, the more aware that health is essential. In addition, the individual will more quickly receive information and increase their knowledge and vice versa. This is in line with research conducted by Absor et al. (2020) found that from 55 respondents, a statistical test was carried out using the contingency coefficient on the

relationship between education level and treatment adherence in TB patients, showing a significant p -value=0.026 (<0.05).

Compliance with taking medication is essential to avoid MDR-TB, so direct supervision is needed by a drug swallowing supervisor (PMO) who can be played by health workers or family members who are close to the patient (Kurniasih & Sa'adah, 2017).

This is supported by the theory put forward by Puspasari et al. (2019) that effective treatment is essential in eradicating TBC and making a diagnosis quickly, and other supporting efforts are urgently needed. So that the transmission of TBC disease can be prevented by the community independently if the community knows and understands TBC disease. It is sad that nowadays, people prefer to do something but do not have enough knowledge and are followed by a positive attitude in everyday life. This is a reality that must be faced now. Researchers argue that the provision of education plays a role in medication adherence behavior. Research conducted by researchers found patient non-adherence in taking medication due to a lack of patient understanding and knowledge regarding the drugs consumed, both the method of treatment and the side effects of treatment.

The effect of using SRAGAM on the level of patient compliance in taking medication

Based on the research, the results show that there is a mean difference before and after with a p -value=(0.000) $<\alpha$ (0.05), which means that there is an effect of using SRAGAM. This research is in line with a study conducted by Dehmi et al. (2021) that out of 54 people who were given health promotion interventions in providing education on taking medication for TB sufferers, the results of the experimental group obtained a mean rank of 9.96 and the control group received a mean level of 8.33 with a difference in the delta value of 1.63, while the p -value is $0.000 < 0.05$ which means that there is a significant or significant difference between the knowledge of the experimental group and the control group after being given education.

REFERENCES

Absor, S. et al. (2020). Hubungan Tingkat Pendidikan Dengan Kepatuhan Berobat Penderita Tb Paru Di Wilayah Kabupaten Lamongan Pada Januari 2016 – Desember

This is supported by the theory put forward by Mientarini (2018). Patients who enter treatment in the advanced phase seem to feel cured and then stop treatment. Success in treating pulmonary TBC patients is influenced by adherence to treatment. Nurses act as supervisors and conduct counseling to increase TB patients' drug adherence (Wulandini et al., 2020).

This is in line with research conducted by Gunawan (2019), who explains a relationship between the role of nurses as educators and motivators for medication adherence in TBC sufferers. An educator is the nurse's role in helping patients improve their health by providing knowledge about treatment and medical procedures so that the patient or family gets essential knowledge. Researchers argue that the role of nurses as educators and motivators is crucial in patient compliance in taking TBC drugs. Based on research that researchers have conducted, patients tend to be non-adherent in treatment due to a lack of scheduled supervision and a lack of patient knowledge regarding medication education.

TBC patients can utilize the use of the SRAGAM tool as a medium to comply with scheduled medication taking to prevent drop out of taking medication. In the intervention group, after being given the SRAGAM tool, there was a mean difference before and after using the SRAGAM, namely 2.43750. This shows that TBC clients can use the SRAGAM tool to improve patient medication adherence and prevent dropping out of medication for TBC patients.

CONCLUSION

There were differences in patient medication adherence in the intervention and control groups. It was concluded that there was an effect of using SRAGAM on the level of commitment of TBC patients in taking medication. SRAGAM media can be developed even better to become a media that can increase TB patient compliance in taking medication to prevent the risk of dropping out of treatment in TB patients.

2018. *Medica Arteriana (Med-Art)*, 2(2), 80.

Dehmi, M., Yusuf, A. and Juhanto, A. (2021). Analisis Pengaruh Metode Penyuluhan

- (Ceramah) Damapemberian Edukasi Minum Obat Pada Penderita Tb Paru. *Jurnal Ilmiah Kesehatan Sandi Husada*, 10(2), pp. 511–518.
- Ditjen P2P. (2020). *Laporan Kinerja*. Jakarta: Kementerian Kesehatan RI.
- Dinas Kesehatan Provinsi Lampung. (2020). *Profil Kesehatan Provinsi Lampung Tahun 2019*. Pemerintah Provinsi Lampung.
- Fitri, L. D., Marlindawani, J., & Purba, A. (2018). Kepatuhan Minum Obat pada Pasien Tuberkulosis Paru. *Jurnal Ilmu Kesehatan Masyarakat*, 7(01), 33–42.
- Gunawan, M. R., & Jaysendra, D. (2020). Hubungan peran perawat sebagai edukator dan motivator dengan kepatuhan minum obat penderita tb di poliklinik mdr rumah sakit umum daerah dr. H. Abdul moeloek. *Malahayati Nursing Journal*, 2(1), 105-117. <http://dx.doi.org/10.33024/mnj.v2i1.1700>
- Kementerian Kesehatan RI. (2020). *Strategi Nasional Penanggulangan Tuberkulosis di Indonesia 2020-2024*. Pertemuan Konsolidasi Nasional Penyusunan STRANAS TB, p. 135.
- Kementerian Kesehatan RI. (2022). *Peraturan Menteri Kesehatan Republik Indonesia Nomor 15 Tahun 2022 tentang Pedoman Penggunaan Dana Dekonsentrasi Kementerian Kesehatan Tahun Anggaran 2022*. Jakarta.
- Kurniasih, E., & Sa'adah, H. D. (2017). Pengaruh Peran Pengawas Menelan Obat (PMO) dengan Kepatuhan Minum Obat Pasien Tuberkulosis Paru di Wilayah Kerja Puskesmas Ngawi Kabupaten Ngawi. *Warta Bhakti Husada Mulia: Jurnal Kesehatan*, 4(2). <https://jurnal.stikes-bhm.ac.id/index.php/jurkes/article/view/68>
- Mientarini, E. I., Sudarmanto, Y., & Hasan, M. (2018). Hubungan Pengetahuan Dan Sikap Terhadap Kepatuhan Minum Obat Pasien Tuberkulosis Paru Fase Lanjutan Di Kecamatan Umbulsari Jember. *Jurnal Ilmu Kesehatan Masyarakat*, 14(1), 11-18. <https://doi.org/10.19184/ikesma.v14i1.10401>
- Pameswari, P., Halim, A., & Yustika, L. (2016). Tingkat Kepatuhan Penggunaan Obat pada Pasien Tuberkulosis di Rumah Sakit Mayjen H. A Thalib Kabupaten Kerinci. *JSFK (Jurnal Sains Farmasi & Klinis)*, 2(2), 116-121. <http://jsfk.ffarmasi.unand.ac.id/index.php/jsfk/article/view/60>
- Puspasari, Aryu, Fina, Scholastica. (2019). *Asuhan Keperawatan Pada Pasien Dengan Gangguan Sistem Pernafasan*. Yogyakarta:Pustaka Baru Press.
- World Health Organization. (2020). *Global Tuberculosis Report 2020*. Geneva.
- Wulandini, P., Saputra, R., Sartika, W., & Qomariah, S. (2020). Hubungan peran pengawasan petugas kesehatan terhadap kepatuhan konsumsi obat pasien tbc di wilayah kerja Puskesmas Perawang Kec. Tualang Kabupaten Siak. *Jurnal Kesehatan Masyarakat Maritim*, 3(3). <https://journal.unhas.ac.id/index.php/jkmmunhas/article/view/12218>
- Yani, A., Tasya, Z., & Syam, S. (2020). Edukasi Kesehatan Untuk Meningkatkan Pengetahuan Tentang Pengobatan Rutin Pasien TB Paru. *Media Publikasi Promosi Kesehatan Indonesia (MPPKI)*, 3(1), 74-77. <https://doi.org/10.56338/mppki.v3i1.1032>
- Yunita, F., Veronica, R. I., Ratnasari, L., Suhendra, A., & Basuki, H. (2019). Rancang bangun aplikasi kepatuhan pengobatan TBC. *Informatika Kedokteran: Jurnal Ilmiah*, 2(1), 54-69. <https://ejournal.gunadarma.ac.id/index.php/medif/article/view/2297>