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The Effect of Telenursing-Based Health Education on Self-Efficacy in Tuberculosis in Hospital Setting Patients

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ABSTRACT/

Pulmonary TB treatment, which takes a relatively long time with regular medication intake, causes patient boredom with the treatment. The informational and emotional support provided is also less than optimal; this can reduce self-efficacy. This research aims to determine the effect of telenursing-based health education on self-efficacy in tuberculosis patients at the Jemursari Islamic Hospital, Surabaya. This was a quasi-experimental pre-post test control group design approach. Population of 38 tuberculosis patients at Jemursari Islamic Hospital, Surabaya. The sample size was 38 patients, divided into 2 intervention and control groups, taken using random sampling techniques based on sample allocation. Data was collected using a questionnaire. Data analysis used the Paired t-test and Independent t-test with α = 0.05. The research results showed that the difference between the self-efficacy of the intervention group was X ± (SD) = 7.05 ± (4.47) and the control group, namely X ± (SD) 0.11 ± (0.315). The results of the Independent t-test, ρ = 0.000, meaning that there is an influence of telenursing-based health education on increasing self-efficacy in tuberculosis patients. Telenursing-based health education can increase self-efficacy. Hospitals and nurses can use telenursing (long distance care) to provide health education to patients with chronic diseases such as tuberculosis

ABSTRAK

Pengobatan TB Paru yang memakan waktu relatif lama dengan asupan obat yang teratur menyebabkan pasien bosan terhadap pengobatan, kemudian dukungan informasional dan emosional yang diberikan juga kurang optimal, hal ini dapat menurunkan efikasi diri. Penelitian ini bertujuan untuk mengetahui pengaruh pendidikan kesehatan berbasis telenursing terhadap efikasi diri pada pasien tuberkulosis di Rumah Sakit Islam Jemursari Surabaya. Desain penelitian ini adalah quasi experimental dengan pendekatan pre post test control group design. Populasi 38 pasien tuberkulosis di Rumah Sakit Islam Jemursari Surabaya. Besar sampel sebanyak 38 pasien, dibagi menjadi 2 kelompok intervensi dan kontrol, diambil dengan menggunakan teknik random sampling berdasarkan alokasi sampel. Data dikumpulkan dengan menggunakan kuesioner. Analisis data menggunakan uji Paired t-test dan Independent t-test dengan α = 0,05. Hasil penelitian menunjukkan selisih efikasi diri kelompok intervensi yaitu X ± (SD) = 7,05 ± (4,47) dengan kelompok kontrol yaitu X ± (SD) 0,11 ± (0,315). Hasil uji t-independent ρ = 0,000, artinya ada pengaruh edukasi kesehatan berbasis telenursing terhadap peningkatan efikasi diri pada pasien tuberkulosis. Edukasi kesehatan berbasis telenursing dapat meningkatkan efikasi diri. Rumah sakit dan perawat dapat memanfaatkan telenursing (long distance care) untuk memberikan edukasi kesehatan pada pasien dengan penyakit kronis seperti tuberkulosis.

A. INTRODUCTION

Tuberculosis is an infectious disease caused by germs Mycobacterium tuberculosis (Setiyowati et al., 2020) (Wahdi & Puspitosari, 2021). Treatment for pulmonary TB which requires a relatively long time with regularity in taking medication causes patient boredom with the treatment, then the informational and emotional support provided is also less than optimal, this can reduce self-efficacy and reduce quality of life.

The World Health Organization (WHO) recorded 10.4 million new cases of tuberculosis in 2015. These cases consisted of 5.9 million men, 3.5 million women and 1.0 million children. Around 1.2 million HIV sufferers are suspected of having tuberculosis. The global report of deaths from tuberculosis in 2015 was around 1.4 million people and the number of deaths of HIV sufferers with tuberculosis was around 0.4 million people. The average death rate has decreased by 22% since 2000 to 2015 (WHO, 2017). The prevalence of pulmonary tuberculosis in Indonesia in 2013 was 0.4%, in 2018 it was 0.4%, the prevalence of pulmonary tuberculosis in East Java in 2013 was 0.2%, in 2018 it increased to 0.3% (Riskesdes, 2018). The number of new cases of pulmonary tuberculosis in the city of Surabaya in 2016 was 2,382 people (Profil Kesehatan, 2016). The number of cases of pulmonary tuberculosis in the Lung Polyclinic of Jemursari Islamic Hospital, Surabaya in 2019 was 722 patients with pulmonary tuberculosis, 53 new patients diagnosed with pulmonary tuberculosis, 269 cases of pulmonary tuberculosis in the last three months, 13 new patients diagnosed with pulmonary tuberculosis.

Risk factors affecting tuberculosis are direct contact with someone who has active tuberculosis, immunocompromised status (decreased immunity) for example, elderly, cancer, corticosteroid therapy, HIV, injection drug use, alcohol, people who lack adequate health care (poor, minority, children, young adults), pre-existing medical conditions including diabetes, chronic kidney failure, silicosis, malnutrition, immigrants from countries with high rates of tuberculosis (eg, Haiti, Southeast Asia), institutionalization (eg, long-term care facilities, prisons), living in crowded and substandard housing, occupation (eg, health care workers, especially those who perform high-risk activities (Puspasari, 2019).

Lack of empowerment lowers self-efficacy at a more general level with dysfunctional coping and higher levels of anticipation of stigma (Lister et al., 2018) (Sulistyono et al., 2017). (Solikhah et al., 2019) said that self-efficacy in tuberculosis patients can decrease or be insecure in appearing and meeting other people, long treatment and tuberculosis patients think that the disease they suffer is severe and difficult to cure.

The healing process of tuberculosis takes at least 6 months and can cause changes in the patient's health status. Physical and psychological changes affect the quality of life of tuberculosis patients. The quality of life of someone who experiences chronic pain, many aspects of quality of life are disrupted (Linggani, 2018). (Salehitali et al., 2019) said that tuberculosis is considered one of the serious diseases that can damage the quality of life. Important factors in influencing the quality of life in TB patients, long-term treatment, multi-drug therapy, toxic reactions, drug side effects, compliance with drug regimens, social impacts, social support, social acceptance of the disease, family, lifestyle changes, patient marital status, the extent of access to health services, economic status, patient knowledge

about the disease, family knowledge about the disease, treatment of tuberculosis complications.

Health education based on videos, images, leaflets can increase self-efficacy for hemodialysis patients (Saefulloh & Nuraeni, 2016). Health promotion can increase self-efficacy for cardiometabolic patients (Wu et al., 2019). (Gagné et al., 2019) said that video-based health promotion can improve the quality of life of atrial fibrillation patients. (Lee et al., 2018) said that video-based health promotion can improve the quality of life of BPS patients compared to using text-based health promotion.

Telenursing as telecommunications and information technology to provide remote nursing practice without having to make daily visits to the patient's home (Fadhila & Afriani, 2019). Telenursing component of the electronic health care project, defined as "the use of telemedicine technology and includes various communication technologies such as telephone, email, internet, and video clips to provide nursing care" (Amudha et al., 2017)

(Elgaphar & Gafar, 2017) said that telenursing using telephone calls can increase self-efficacy in patients with diabetes mellitus. Telenursing can increase self-efficacy in patients with non-alcoholic fatty liver disease (Javanmardifard et al., 2017). Telenursing using telephones can improve quality of life in patients with hypertension (Dadgari et al., 2017). Telenursing can make the intervention group able to control glucose better and monitor themselves better than patients who receive care in the clinic (Kotsani et al., 2018). Telenursing can monitor care for head trauma patients (Shahrokhi et al., 2018).

Researchers use video to conduct health education based on telenursing to improve self-efficacy and quality of life in tuberculosis patients. This is in accordance with what was stated by a computer research and publishing institution, Computer Technology Research (CTR) which stated that people are only able to remember 20% of what is seen, and 30% of what is heard, but people can remember 50% of what is seen and heard and 80% of what is seen, if heard and done at the same time (Sahwanti et al., 2019.)

B. METHODS

This study was a quasi-experimental study with a pre-post test control group design, which was conducted at Jemursari Islamic Hospital, Surabaya. The population in this study were all tuberculosis patients at Jemursari Islamic Hospital, Surabaya, totaling 38 people. The sample size was 38 patients, who were divided by random sampling into two groups, each with 19 people in the intervention group and 19 people in the control group. The intervention group was given telenursing-based health education through educational slides and motivational videos for 4 weeks. The control group was given standard education about tuberculosis. The level of self-efficacy of respondents was measured before and after the intervention using a self-efficacy questionnaire compiled based on the guidelines for compiling a self-efficacy scale. Data analysis used the Paired t-test to see the differences before and after in each group, and the Independent t-test to compare between groups, with a significance level of $\alpha = 0.05$. The results of the normality test showed that the self-efficacy data were normally distributed. This study has received approval from the Health Research Ethics Commission of Jemursari Islamic Hospital, Surabaya with ethics letter number 0172/KEPK-RSI JS/IV/2020.

C. RESULT AND DISCUSSION

1. Result

a. Distribution of Respondents in the Intervention Group and Control Group

Table 1 Distribution of Respondents in the Intervention Group and Control Group

Respondent Characteristics	Intervention (n=19)		Control (n=19)	
	F	%	F	%
Age				
21-35 year	8	42.1	2	10.5
36-45 year	3	15.8	4	21.1
46-60 year	7	36.8	9	47.4
>60 year	1	5.3	4	21.1
Total	19	100	19	100
Gender				
Man	10	52.6	14	73.7
Woman	9	47.4	5	26.3
Total	19	100	19	100
Education				
SD	1	5.3	2	10.5
SMP	6	31.6	3	15.8
SMA	11	57.9	11	57.9
PT	1	5.3	3	15.8
Total	19	100	19	100
Work				
Work	10	52.6	14	73.3
Doesn't work	9	47.4	5	26.3
Total	19	100	19	100
Smoke				
No	9	47.4	8	42.1
Yes	10	52.6	11	57.9
Total	19	100	19	100
Accompanying Diseases				
DM	4	21.1	6	31.6
HT	5	26.3	5	26.3
There isn't any	10	52.6	8	47.4
Total	19	100	19	100
Duration of TB Treatment				
Fase Intensif	6	31.6		
Fase Lanjut	13	68.4	3	15.8
			16	84.2
Total	19	100	19	19

Based on table 1, it shows that almost half of the respondents in the intervention group (42.1%) were aged 21-35 years and almost half of the respondents in the control group (47.4%) were aged 46-60 years. The characteristics of respondents in the intervention group based on gender were half (52.6%) male and the majority of respondents in the control group (73.7%) were male. The characteristics of respondents in the intervention group based on education were half (57.9%) high school and the respondents in the control group were half (57.9%) high school. The characteristics of respondents in the intervention group based on occupation were half (52.6%) working and the respondents

b. Self-efficacy before and after the provision of telenursing-based health education in the intervention and control groups

Table 2 self-efficacy before and after the provision of telenursing-based health education in the intervention and control groups

		Groups				Groups			
		Intervention Pre		Intervention Post		Control Pre		Control Post	
		n	%	n	%	n	%	n	%
Self-Efficacy	Low	3	15.8	0	0	1	5.3	1	5.3
	Currently	9	47.4	7	36.8	10	52.6	10	52.6
	Tall	7	36.8	12	63.2	8	42.1	8	42.1
Total		19	100	19	100	19	100	19	100

Based on table 2 shows the self-efficacy of 19 respondents in the intervention group before being given telenursing-based health education intervention, almost half (47.4%) had moderate self-efficacy, after being given telenursing-based health education intervention there was an increase in self-efficacy, most (63.2%) had high self-efficacy. In the control group that received intervention according to Hospital standards, half (52.6%) had moderate self-efficacy and after being given action according to Hospital standards, half (52.6%) had no change in moderate self-efficacy.

c. Analysis of self-efficacy before and after providing telenursing-based health education in the intervention and control groups

Table 3 Analysis of self-efficacy before and after providing telenursing-based health education in the intervention and control groups with the paired t-tes

		N	Mean	SD	SE	P
Intervention	*Pre*	19	25.95	8.68	1.99	.000
	Post	19	33.00	5.97	1.37	
Control	*Pre*	19	26.95	7.39	1.69	.163
	Post	19	27.05	7.29	1.67	

Based on table 3, it shows that the self-efficacy level score of 19 respondents in the intervention group before being given telenursing-based health education intervention was 25.95 with a standard deviation of 8.68, after being given telenursing-based health education intervention, the self-efficacy level increased to 33.00 with a standard deviation of 5.97. The results of the paired t-test showed a P value $<\alpha = 0.05$, which is 0.000, which indicates that there is a difference in the level of self-efficacy before and after the telenursing-based health education intervention.

In the control group that received intervention according to Hospital standards, the self-efficacy level score before was 26.95 with a standard deviation of 7.39 and after being given action according to Hospital standards, the self-efficacy level score was 27.05 with a standard deviation of 7.29. The results of the paired t-test showed a P value $> \alpha = 0.05$, namely 0.163, which indicates that there is no difference in the level of self-efficacy before and after the intervention according to Hospital standards.

d. Analysis of the Influence of Telenursing-Based Health Education on Self-Efficacy in Tuberculosis Patients.

Table 4 Analysis of the Influence of Telenursing-Based Health Education on Self-Efficacy in Tuberculosis Patients with the Independent t-test

Variables	Group	Mean	SD	P
Self-efficacy	Intervention	7.05	4.47	0.000

Control	0.11	0.31

Based on table 3, the results of the statistical test show the average value of the difference in self-efficacy in the intervention group is 7.05 with a standard deviation of 4.47 and in the control group shows a difference in self-efficacy of 0.11 and a standard deviation of 0.31. The results of the Independent t-test to analyze the difference in self-efficacy level scores in the intervention group and the control group obtained a value of P = 0.000 and a value of α = 0.05 meaning P <α then Ho is rejected, meaning that telenursing-based health education can increase self-efficacy in tuberculosis patients at the Jemursari Islamic Hospital, Surabaya

2. Discussion

a. *Self-efficacy in tuberculosis patients before and after being given telenursing-based health education intervention*

Based on the results of the study, it was shown that in the intervention group there was an increase in self-efficacy after being given a telenursing-based health education intervention, while in the control group there was still no increase in self-efficacy after being given an intervention according to hospital standards. The study was conducted on tuberculosis patients at the Jemursari Islamic Hospital, Surabaya. In the intervention group and the control group, most of the respondents were male and most of the respondents smoked. The results of this study are in line with the research conducted by Rini, (2011) in (Maelani & Cahyati, 2019) it was found that most tuberculosis patients were male, namely 38 people (56.8%). This is in line with what was stated by WHO that the number of men who increased due to pulmonary tuberculosis in one year was at least 1 million, this can happen because men are more susceptible to diseases due to a decrease in the general system such as pulmonary tuberculosis due to the habit of men who like to consume alcohol and cigarettes.

Tuberculosis patients at the Jemursari Islamic Hospital in the intervention group and the control group were mostly in intensive phase treatment. According to (Masyhani et al., 2020), most tuberculosis patients do not have regular check-ups during the intensive phase due to inadequate self-efficacy, which results in a large number of non-adherence to treatment. This phenomenon is shown in the results of the study conducted in table 2 proving that there is an influence of providing health Based on the results of interviews with patients experiencing a decrease in self-efficacy due to boredom taking anti-tuberculosis drugs, not sure they are cured of tuberculosis, not confident in meeting other people.

One of the roles of nurses is as an educator in improving the health welfare of patients (Nursalam, 2019). Providing telenursing-based health education to tuberculosis patients can increase self-efficacy to the maximum in order to improve quality of life as optimally as possible. The results of the study in the control group before and after being given intervention according to Hospital standards did not experience changes in self-efficacy, this is evidenced in table 2, while in the intervention group there was a significant increase in self-efficacy telenursing-based education on increasing self-efficacy in tuberculosis patients with a ρ value = 0.000. Health promotion can be defined as an effort to disseminate or sell health messages so that the community accepts and knows to follow health messages (Bakrie et al., 2012).

This is in accordance with research conducted by (Herinawati et al., 2021) providing health education based on videos, images, leaflets can increase self-efficacy for hemodialysis patients. This is in line with research conducted by (Wu et al., 2019) Providing health promotion can increase self-efficacy for cardiometabolic patients. In addition to using health education, nurses can take advantage of existing developments and advances in information technology, one of which is communication technology in the form of telehealth, especially to provide nursing interventions using telenursing.

In recent years, the nursing profession has experienced very rapid development. This is due to the influence of globalization where the demands of society for the nursing profession to improve itself. The most basic and most challenging demands concern professional, quality and accessible nursing services. Nurses are increasingly required to be professional and prioritize the development of health technology, where patients/clients who need nursing care can come from various circles and in the "virtual world" (cybernet), which is increasingly marked by the high number of internet users in Indonesia, and the increasing number of websites in the health sector (Fadyllah & Prasetyo, 2021)

The rapid development of science and technology in the fields of education and health, including nursing services, has encouraged the creation of a long-distance nursing service model better known as telenursing. Telenursing occurs when nurses discover the client's health needs through assessment, triage and determination of information, using information, communication and network-based systems. Telenursing facilitates access to health services related to under-serviced and remote populations as well as facilitating home monitoring of services or individuals with chronic health problems (Dadgari et al., 2017).

Telenursing has been successful in countries with high growth rates due to several factors, namely savings in health costs, increasing aging and chronically ill populations and increasing coverage of remote health, rural and remote areas and telenursing can help resolve nurse shortages, reduce distance, visit times and maintain patients who have been discharged from the hospital. Health services, especially remote nursing using information technology media (internet) provide convenience for the community. The community or patients do not need to come to the hospital, doctor or nurse to get health services. The time required for health services is also getting shorter. Patients can just stay at home and make contact via the internet or via video conference to get health information, care and even treatment (M.Abd Elgaphar & Ibrahim Abd El Gafar, 2017).

b. The Influence of Telenursing-Based Health Education on Self-Efficacy in Tuberculosis Patients

Based on the results of the study in table 3, it shows that there is an influence of telenursing-based health education on self-efficacy in hemodialysis patients with a sig value of .000. Research that supports these results includes that conducted by (Saefulloh & Nuraeni, 2016) providing health education based on videos, pictures, leaflets can increase self-efficacy in hemodialysis patients. This is in line with research conducted by (Wu et al., 2019) Providing health promotion can increase self-efficacy in cardiometabolic patients. This is in line with research conducted by (Javanmardifard et al., 2017) Telenursing can increase self-efficacy in patients with non-alcoholic fatty liver disease. Telenursing intervention using telephone calls can increase self-efficacy in patients with diabetes mellitus (M.Abd Elgaphar & Ibrahim Abd El Gafar, 2017). education in general is any effort planned to influence others, whether individuals, groups or communities, so that they do what is expected by educators. Health counseling or health education is an effort to persuade or teach the community to take action to maintain and improve their health.

According to(Wahyuni & Maryati, 2024) who stated that health education is effective in increasing self-efficacy. The purpose of education is to change the understanding of individuals, groups and communities in the health sector so that health becomes something valuable, independent in achieving healthy living goals and can use existing health service facilities appropriately and appropriately (Suliha, 2016).

D. CONCLUSION AND SUGGESTIONS

The results of this study indicate that telenursing-based health education can improve self-efficacy in tuberculosis patients. Thus, hospitals and nurses can utilize telenursing as an

effective method in providing health education, especially for patients with chronic diseases such as tuberculosis who require long-term fulfillment of treatment. The limitation of this study is that the researcher could not directly supervise the respondents during the research process because most of them were outpatients. However, this finding remains very relevant, considering the rapid development of technology today that allows telenursing to be a practical and efficient solution to improve the quality of protection for tuberculosis patients undergoing anti-tuberculosis therapy.

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F. REFERENCES

Amudha, R., Nalini, R., Alamelu, R., Badrinath, V., & Naveen Sharma, M. (2017). Telehealth and telenursing – Progression in healthcare practice. *Research Journal of Pharmacy and Technology*, *10*(8), 2797–2800. https://doi.org/10.5958/0974-360X.2017.00495.4

Bakrie, U., Kuningan, K., Rasuna, J. H. R., Kav, S., & Jakarta Indonesia, C.-22. (2012). Strategi Pesan Promosi Kesehatan Cegah Flu Burung TUTI WIDIASTUTI. In *MIMBAR* (Vol. 28, Issue 2). Desember. http://disnak.jambiprov.go.id

Dadgari, F., Hoseini, S., Aliyari, S., & Masoudi, S. (2017). The effect of sustained nursing consulting via telephone (Tele Nursing) on the quality of life in hypertensive patients. *Applied Nursing Research*, *35*, 106–111. https://doi.org/10.1016/j.apnr.2017.02.023

Endro Sulistyono, R., Sukartini, T., Soenarnatalina, R. M., Hidayati, L., Magister Keperawatan, M., Keperawatan Universitas Airlangga, F., & Kesehatan, F. (n.d.). *PENINGKATAN EFIKASI DIRI MASYARAKAT DALAM PENCEGAHAN TUBERKULOSIS BERBASIS BUDAYA*.

Fadhila, R., & Afriani, T. (2019). PENERAPAN TELENURSING DALAM PELAYANAN KESEHATAN : Literature Review. *Jurnal Keperawatan Abdurrab*, *3*(2), 77–84. https://doi.org/10.36341/jka.v3i2.837

Fadyllah, M. I., & Prasetyo, Y. B. (2021). Pendidikan Kesehatan Menggunakan Metode Audiovisual dalam Meningkatkan Pengetahuan Ibu Merawat Anak dengan Stunting. *Jurnal Promosi Kesehatan Indonesia*, *16*(1), 23–30. https://doi.org/10.14710/jpki.16.1.23-30

Herinawati, H., Heryani, N., Susanti, S., Danaz Nst, A. F., Imelda, I., & Iksaruddin, I. (2021). Efektivitas Self Efficacy terhadap Pemahaman Tanda Bahaya Kehamilan menggunakan Video dan Buku Kesehatan Ibu dan Anak. *Jurnal Akademika Baiturrahim Jambi*, *10*(1), 109. https://doi.org/10.36565/jab.v10i1.290

Javanmardifard, S., Ghodsbin, F., Kaviani, M. J., & Jahanbin, I. (2017). Gastroenterology and Hepatology From Bed to Bench. The effect of telenursing on self-efficacy in patients with non-alcoholic fatty liver disease: a randomized controlled clinical trial The effect of telenursing on self-efficacy in patients with non-alcoholic fatty liver disease: a randomized controlled clinical trial. In *Gastroenterol Hepatol Bed Bench* (Vol. 10, Issue 4).

Kotsani, K., Antonopoulou, V., Kountouri, A., Grammatiki, M., Rapti, E., Karras, S., Trakatelli, C., Tsaklis, P., Kazakos, K., & Kotsa, K. (2018). The role of telenursing in the management of Diabetes Type 1: A randomized controlled trial. *International Journal of Nursing Studies*, *80*(December 2017), 29–35. https://doi.org/10.1016/j.ijnurstu.2018.01.003

Lee, M. H., Wu, H. C., Tseng, C. M., Ko, T. L., Weng, T. J., & Chen, Y. F. (2018). Health Education and Symptom Flare Management Using a Video-based m-Health System for Caring Women With IC/BPS. *Urology*, *119*, 62–69. https://doi.org/10.1016/j.urology.2018.05.027

Lister, M., Vaughn, J., Brennan-Cook, J., Molloy, M., Kuszajewski, M., & Shaw, R. J. (2018). Telehealth and telenursing using simulation for pre-licensure USA students. *Nurse Education in Practice*, *29*(March 2016), 59–63. https://doi.org/10.1016/j.nepr.2017.10.031

M.Abd Elgaphar, S., & Ibrahim Abd El Gafar, S. (2017). Effect Of Tele-Nursing (Phone-Based Follow-Ups) On Self-Efficacy, Healthy Lifestyle, And Glycemic Control In Diabetic Patients. *Journal of Nursing and Health Science*, *6*(3), 67–76. https://doi.org/10.9790/1959-0603056776

Maelani, T., & Cahyati, W. H. (2019). *625 HIGEIA 3 (4) (2019) HIGEIA JOURNAL OF PUBLIC HEALTH RESEARCH AND DEVELOPMENT Karakteristik Penderita, Efek Samping Obat dan Putus Berobat Tuberkulosis Paru Info Artikel*. https://doi.org/10.15294/higeia/v3i4/31852

Riskesdes. (2018). *Laporan%20Riskesdas%202018%20Nasional-2*.

Saefulloh, M., & Nuraeni, W. (2016). PENERAPAN EDUKASI TERSTRUKTUR MENINGKATKAN SELF EFFICACY DAN MENURUNKAN IDWG PASIEN HEMODIALISA DI RSUD INDRAMAYU. In *Jurnal Pendidikan Keperawatan Indonesia* (Vol. 2, Issue 1). http://ejournal.upi.edu/index.php/JPKI

Sahwanti, O., Sekolah, G., & Fakultas, D. (n.d.). PENGEMBANGAN MULTIMEDIA INTERAKTIF UNTUK MENINGKATKAN PEMAHAMAN MATERI SIKLUS HIDUP HEWAN PADA SISWA KELAS IV DEVELOPMENT OF INTERACTIVE MULTIMEDIA TO IMPROVE 4 TH GRADE STUDENT'S UNDERSTANDING OF ANIMAL LIFE CYCLE. In *Pengembangan Multimedia Interaktif .... (Okti Sahwanti)* (Vol. 1).

Salehitali, S., Noorian, K., Hafizi, M., & Dehkordi, A. H. (2019). Quality of life and its effective factors in tuberculosis patients receiving directly observed treatment short-course (DOTS). *Journal of Clinical Tuberculosis and Other Mycobacterial Diseases*, *15*, 100093. https://doi.org/10.1016/j.jctube.2019.100093

Setiyowati, E., Hanik, U., Juliasih, N. N., & Wahdi, A. (2020). Self-Management Education for the Quality of Life of Patients with Pulmonary Tuberculosis. *Journal for Quality in Public Health*, *4*(1), 10–19. https://doi.org/10.30994/jqph.v4i1.144

Shahrokhi, A., Azimian, J., Amouzegar, A., & Oveisi, S. (2018). Effect of telenursing on outcomes of provided care by caregivers of patients with head trauma after discharge. *Journal of Trauma Nursing*, *25*(1), 21–25. https://doi.org/10.1097/JTN.0000000000000338

Solikhah, M. M. atus, Nursasi, A. Y., & Wiarsih, W. (2019). The relationship between family's informational support and self-efficacy of pulmonary tuberculosis client. *Enfermeria Clinica*, *29*, 424–427. https://doi.org/10.1016/j.enfcli.2019.04.062

Sri Wahyuni, & Sri Maryati. (2024). Penerapan Promosi Kesehatan Metode Brainstorming Terhadap Pengetahuan Klien Tentang Tanda-Tanda Bahaya Kehamilan. *Journal of Health (JoH)*, *11*(1), 071–076. https://doi.org/10.30590/joh.v11n1.726

Wahdi, A., & Dewi Retno Puspitosari, Mt. (2021). *MENGENAL TUBERKULOSIS Tuberkulosis, Klasifikasi TBC, Cara Pemberantasan, Asuhan Keperawatan TBC dengan Aplikasi 3S (SDKI, SLKI & SIKI)*.

Wu, M. P., Wu, S. F. V., Lee, M. C., Peng, L. N., Tsao, L. I., & Lee, W. J. (2019). Health-promotion interventions enhance and maintain self-efficacy for adults at cardiometabolic risk: A randomized controlled trial. *Archives of Gerontology and Geriatrics*, *82*(365), 61–66. https://doi.org/10.1016/j.archger.2019.01.009