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COUNSELLING AND EDUCATION TO IMPROVE ADHERENCE TUBERCULOSIS TREATMENT

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ABSTRACT

With the development of nursing science and practice, it is important for nurses to make efforts to control TB, one of the nursing interventions that can be developed in a family-centred TB control programme is counselling and education. This study aims to determine the effectiveness of counselling and education in improving TB treatment adherence in the Puskesmas Ciamis working area. This study is a quantitative study with Quasy experimental design with non-randomised control group design. The population of this study were all TB patients in Puskesmas Ciamis Working Area, a total of 28 patients divided into intervention and control groups. This research was conducted from August 2023 to January 2024. The research instruments used were questionnaires which has been tested for validity and reliability and observation sheets. Data analysis was performed using univariate and bivariate techniques with paired t-test and independent t-test. The results showed that there was an increase in medication adherence before and after the provision of counselling and education in the intervention and control groups. The intervention group experienced a more significant increase in medication adherence p-value 0.027 < 0.05 compared to the control group p-value 0.030 < 0.05, while the comparison of the increase in the intervention and control groups showed a p-value of 0.021 < 0.05. Conclusions: There is a significant effect of the application of counselling and education to improve compliance with the COVID-19 pandemic.

Keywords: adherence; counseling; education; tuberculosis

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INTRODUCTION

The Covid-19 pandemic continues to be one of the factors disrupting achievements, particularly in case finding and diagnosis, access to care and treatment of tuberculosis (TB). Treatment progress made in previous years has often been hampered and even halted since 2019. The global TB-free target is now "off track" from what was planned. In 2021, TB will be the second (2nd) deadliest infectious disease in the world after HIV/AIDS and the thirteenth (13th) leading cause of death worldwide (WHO, 2022).

WHO reported that the estimated number of people diagnosed with TB worldwide in 2021 was 10.6 million cases, an increase of about 600,000 cases from the 10 million cases diagnosed in 2020. Of these 10.6 million cases, 6.4 million (60.3%) are reported and on treatment, while the remaining 4.2 million (39.7%) are undiagnosed and unreported. TB can affect anyone; of the total 10.6 million cases in 2021, at least 6 million cases will be among adult men, 3.4 million cases will be among adult women, and another million cases will be among children. In addition, the total number of deaths from TB is also very high, with at least 1.6 million people dying from TB, an increase from the previous year, when around 1.3 million people died (WHO, 2022).

The death rate from TB in Indonesia reached 150,000 cases (one person every 4 minutes), a 60% increase from 2020 to 93,000 cases with a death rate of 55 per 100,000 population. Of the total estimated 969,000 TB cases in Indonesia, only 443,235 (45.7%) were detected, while the remaining 525,765 (54.3%) were undetected and unreported. In 2020, the number of undetected cases will be 430,667, which means that there has been a significant increase in the number of undetected cases. Meanwhile, the number of cases detected will increase by 393,323 by 2020. In addition, the total number of drug-resistant TB (DR-TB) cases in Indonesia, or multidrug-resistant (MDR) cases, is 8,268, with 5,234 people reported to have started treatment (WHO, 2022).

Documentation studies and interviews conducted at the level of Ciamis District Health Office for Disease Prevention and Control (P2P) stated that the TB situation for the period January - December 2022 was as follows; the achievement of examination of TB suspects served according to SPM (Minimum Service Standards) with a target of 12,508, an achievement of 14,685 (117%), with details of drug sensitive TB suspects 14,443 people, drug resistant TB suspects 242 people. Treatment coverage (treatment of all TB cases) estimated cases of 2,582 people reached 2,074 people (90%) with details of drug sensitive TB cases, drug resistant TB cases (MDR) 28 people. Treatment success rate as follows 1,316 people recovered and completed treatment, 4 people failed treatment, 57 people died, 95 people were lost to follow-up and 134 people were not evaluated (Dinkes Ciamis, 2023).

Based on reports from the Puskesmas Ciamis, there were several cases of TB patients who stopped taking their medication because of side effects such as nausea, allergies and itching, and there were also TB patients who stopped treatment because they felt cured, also because they were tired of taking medication continuously. Therefore, the Ciamis District Health Office has recommended to the Puskesmas to routinely budget for family care activities six times a year (once a month during the treatment period), including a study of medication adherence through drug monitoring coaching, which is part of family care, but the recording process remains through the TB information system. According to health cadres, the registration system through the TB Information System is quite difficult and complicated. Based on data from the Ciamis District Health Office, most of these programmes are not running well, with only 2 puskesmas running them successfully, although only a small proportion.

Non-compliance with TB treatment and control can be caused by various factors such as education, knowledge, attitude, stigma and support system from family and environment including motivation to recover (Adhanty & Syarif, 2023; Loh et al., 2023). Motivation is the desire/encouragement to take positive action. Motivation to recover is one's own desire by thinking positively that TB is a disease that can be cured by taking (anti-TB drugs) OAT (Mujamil et al., 2021; Zuliani, 2019). Limited family knowledge about TB control and treatment is a challenge in itself, so it is necessary to have the support of all stakeholders, especially health workers, so that the TB control programme can be achieved (Febriani et al., 2021; Stang et al., 2023).

Therefore, with the development of nursing science and practice, it is important for nurses to make efforts to control TB, and one of the nursing interventions that can be developed in a family-centred TB control programme is counselling and education (Anggiareni et al., 2023). Several studies have shown that counselling and education are interventions needed by patients with TB problems. A quantitative study in Puskesmas Gorontalo found that there was an effect of counselling on TB treatment adherence with a p-value of 0.000 (Rasdianah et al., 2024). Another study found that preventive and promotive efforts through community counselling on risk factors for TB incidence can increase community knowledge to reduce the risk of TB infection (Sutryawan, Nofianti, & Halim, 2020).

Counselling and education appear to be effective tools for improving adherence to TB treatment. Counselling and education do not eliminate the need for closely monitored treatment, but they are useful additional strategies to improve treatment adherence and require a mediating relationship between counsellors and patients, who are often stigmatised. The impact of information and motivation through counselling has the potential to open mechanisms that ultimately reduce the stigma of TB patients. Based on the various reviews above, the researcher is interested in conducting research related to "Counselling and Education to Improve Tuberculosis Treatment Adherence in the UPTD Puskesmas Ciamis Working Area". The aim of this study was to determine the effectiveness of counselling and education on treatment adherence in tuberculosis patients, while improving the knowledge, attitudes and behaviour or actions of tuberculosis patients towards their current condition.

METHOD

This study is a quantitative study with a non-randomised control group Quasy experimental design. The population of this study were all TB patients in UPTD Puskesmas Ciamis work area in the period of August 2023, a total of 31 patients, but 3 patients were excluded because they were still toddlers / under 12 years old, so the total sample was 28 patients divided into intervention and control groups (14 people each). This study was conducted during the advanced treatment phase of TB patients, for + 4 - 5 months, from preparation to evaluation, namely August 2023 to January 2024.

In the early stages of the study, the researchers first conducted socialisation sessions with TB patients and their families, as well as with local health workers. The researcher then explained the purpose of the study and asked for the patient's willingness to become a research participant by completing an informed consent form. Intervention and control group allocation was done by the researcher alone, without the knowledge of the respondent. Counselling and education sessions lasted 30-60 minutes in the intervention group, while the control group only received education at the time of drug collection at the health facility. The counselling and education interventions were carried out at each scheduled drug collection, with the modification that the counselling process was carried out at the patient's home if the patient did not go to the health facility to take the medicine, between +4 meetings. At the 4th meeting, observations were made by looking at the drug collection records at the puskesmas as well as at the PMO to monitor whether the patient was taking the medication properly, and behavioural measurements (knowledge, attitudes, stigma and actions) were made using questionnaire sheets, as well as patient adherence to medication by completing the MMAS-8 questionnaire which has been tested for validity and reliability with a Cronbach's alpha coefficient value (0.824), test-retest reliability using Spearman's rank correlation (0.881), and convergent validity on the Indonesian version of the MMAS-8 is r = 0.883 (Riani et al., 2017). Data were analysed using univariate and bivariate techniques. Univariate analysis was used to describe the characteristics of the respondents, including age, gender, education, occupation and duration of treatment. Meanwhile, bivariate analysis was used to determine the effect of counselling and education on drug adherence among TB patients using paired t-tests, and to determine the difference in drug adherence between the intervention and control groups using independent t-tests.

RESULTS

Tabel 1.
Respondent Characteristics (n=28)

Characteristics	Intervention Group (n=14)		Control Groupn (n=14)	
	f	%	f	%
Age				
Teenagers	4	28.6	5	35.7
Adult	6	42.9	5	35.7
Elderly	4	28.6	4	28.6
Gender				
Female	6	42.8	7	50.0
Male	8	57.2	7	50.0
Education				
Primary	5	35.7	4	28.6
Sencondary	8	57.1	10	71.4
Higher	1	7.1	0	0
Occupation				
Not Working	6	42.9	4	28.6
Housewife	4	28.6	4	28.6
Labourer	1	7.1	2	14.3
Farmer	1	7.1	0	0
Self-Employed	1	7.1	2	14.3
Trader	1	7.1	2	14.3
Duration Of Treatment				
< 2 months	13	92.9	13	92.9
> 2 months	1	7.1	1	7.1

Tabel 2.
Compliance and normality test of respondents before and after education and counselling (n=28)

Compliance	Intervention				Control			
	Pre tes		Post tes		Pre tes		Post tes	
	f	%	f	%	f	%	f	%
Compliance Low	12	85.7	1	7.2	13	92.8	2	14.3
Compliance Medium	2	14.3	1	7.2	1	7.2	2	14.3
Compliance High	0	0	12	85.7	0	0	10	71.4

Tabel 3
Independent t-test of adherence to medication for TB patients (n=28)

Group	Pre			Post					*p-value*
	Mean	SD	Perbedaan	Mean	SD	Perbedaan	*p-value*	Peningkatan	
Intervention	3.93	2.369	0.14	6.64	1.151	1.79	0.027*	2.71	0.021**
Control	3.79	2.359		4.85	2.075		0.030*	1.06	

* there is a significant effect, paired t-test
** there is a significant difference, independent t-test

The results of the study based on the characteristics of respondents found that the age of patients between adolescents, adults and the elderly in the intervention group and control group were relatively balanced, as well as the gender between men and women in both groups was almost the same, for the level of education in both groups the highest was secondary education, in both groups for work more were not working because the number of elderly coupled with adolescents who did not work. Further analysis obtained the results of compliance in the intervention group before counselling and education most respondents were in the low compliance category as many as 12 people (85.7%), and after counselling and education most became high compliance 12 people (85.7%). Whereas in the control group, before education, most of the respondents were in the low compliance category, 13 people (92.8%), and after education, 10 people (71.4%) became highly compliant. The results of the paired t-test showed that there was an increase in medication adherence in the intervention and control groups before and after the provision of counselling and education. The intervention group experienced a more significant increase in medication adherence p-value 0.027 <0.05 compared to the control group p-value 0.030 <0.05, while the results of the independent t-test obtained a p-value of 0.021 <0.05.

DISCUSSION

The results showed that there was an increase in medication adherence before and after the provision of education and counselling in the intervention and control groups. The intervention group experienced a more significant increase in medication adherence p-value 0.027 <0.05 compared to the control group p-value 0.030 <0.05. In addition, there was a significant difference in the increase in medication adherence between the intervention and control groups p-value 0.021. This is in line with the results of a narrative study (Oktaviani & Mahwati, 2022) which conducted a narrative study entitled Interventions to Improve Tuberculosis Treatment Adherence and concluded that psychological counselling and educational interventions were the most effective interventions compared to other interventions such as digital-based drug monitoring (DOTS, WOT, Pillbox and Treatment Monitor) and peer support. In addition, research (Parwati et al., 2021) showed that the HBM-based MI model of motivational communication counselling was effective in improving adherence and treatment success among TB patients. Research in Peru also found that social support and service quality based on health education were effective in improving TB treatment adherence (Dilas et al., 2023).

Family and community factors may manifest as positive social support, but may also manifest as stigma towards the disease and TB patients (Chen et al., 2021). Stigma is a thought associated with a health problem/disease that is formed as a social process or personal experience characterised by demeaning attitudes, exclusion, rejection, blame and negative social assumptions about the individual and his/her group in relation to a particular health problem (Akbari, Mohammadi, & Hosseini, 2023; Subu et al., 2021). Similarly, in the management of tuberculosis, stigma in tuberculosis disease can cause delays in treatment and negatively affect treatment retention in tuberculosis patients, resulting in treatment not being completed (Lay et al., 2020). Health education about TB disease, the risks and consequences of not adhering to treatment, the benefits of TB treatment and adherence, and methods to develop self-efficacy are important to provide to TB patients in order to increase knowledge about TB disease and reduce negative stigma among patients, families and communities around patients (Rimache et al., 2023; Erwinsyah et al., 2023; Saidi & Abdul Manaf, 2023). The model used to help counsellors provide counselling to clients is Egan's skilled helper model. This model is widely used in counselling or training situations where the aim is to achieve change and empower people to manage their own problems more effectively. The model aims to help clients develop the skills and knowledge needed to solve their current problems and those that may arise in the future (Serrao, 2019).

Scientifically, counselling is a dynamic process of client-counsellor interaction that aims to help clients make their own decisions by providing impartial information and professional emotional support (Diwyarthi et al., 2023). Counselling is an activity of meeting and discussing between someone who needs help (client) and someone who provides support and encouragement (counsellor) in such a way that the client gains confidence in his or her ability to solve problems (Nurhafiza, Karneli, Hariko, & Hasgimianti, 2023). Counselling aims to bridge changes in a person's behaviour towards solving their own problems. According to Skinner as cited by (Notoatmodjo, 2010),behaviour is a person's response or reaction to an external stimulus. Behaviour occurs through a process of stimulus to the organism and then the organism responds, so Skinner's theory is called the "S-O-R" theory (Stimulus - Organism - Response). Based on these limitations, behaviour is an activity or action performed by a person to satisfy desires, wants, needs, passions, etc., which includes cognitive, emotional, and conative activities (Zhai et al., 2020). Actions or behaviours performed by TB patients are the result of knowledge and attitudes and the stigma they believe (Mohammedhussein et al., 2020). Based on the results of the study, it can be seen that there is a change in behaviour towards a better direction, this behaviour arises because of the counselling and education process undertaken by TB patients, thus increasing their knowledge about TB, both the concept of disease, treatment and transmission. Based on the findings that have been carried out by researchers, it is found that there are changes in compliance in taking medication before and after counselling and education interventions, counselling and education have an influence and change in treatment compliance, counselling and education have a significant effect on treatment compliance, this happens because it is influenced by changes in knowledge, attitudes, stigma so that it affects the treatment actions of TB patients, besides that family support and support from fellow sufferers during group counselling are very influential, because during discussions with other sufferers, many inputs can be adopted, related to solving the problems experienced by each sufferer.

CONCLUSION

The provision of counseling and education interventions has been shown to have a significant impact on improving treatment adherence among TB patients. In addition, the results showed that there was a significant difference between the intervention and control groups in increasing adherence to medication. In this study, the researchers used only one related variable without exploring other causal factors that may affect adherence in TB patients. Therefore, further research can be developed using pure experimental research methods, as well as more variables and research subjects, to obtain better research results and minimize bias in research findings.

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