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Increasing Self Efficacy Behavior Prevention of Transmission and Compliance with Tuberculosis Medication through Health Promotion: A Systematic Review

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Abstract

Self efficacy, behavior and compliance are very important factors in achieving optimal health status in pulmonary TB patients. Health promotion, improveself efficacy, transmission prevention behavior and adherence to taking TB drugs are some of the factors that can support the Tuberculosis control program. The purpose of this systematic review is to determine the effectiveness of health promotion toself-effi cacy, transmission prevention behavior and compliance with tuberculosis medication. Search for articles using the PICOT framework in the database; Ebscho, Science direct, Sage Journals, Scopus, Pubmed, restricted to the last 5 years; 2015 to 2020, there were 16 international journals. Journal design criteria used prospective study, cross sectional study and RCT. The number of samples from the study varied from 27 to 1.213 respondents. Based on the results of the study, there are six methods, namely conventional health promotion, health promotion training, digital health promotion training, online videos about tuberculosis, SMS and traditional language educational videos via DVD. The patient's Self-efficacy can be seen when the patient has received digital health education and health promotion. On conventional methods and SMS can improve behavior and compliance, Prevention of transmission and adherence to taking medication in TB patients. The most effective method is using conventional methods that apply direct implementation or direct interaction between health promotion providers and participants.

Keywords: heath promotion, health education, self efficacy, tuberculosis

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INTRODUCTION

Tuberculosis is an infectious disease that attacks the lung parenchyma caused by the bacteria Mycobacterium tuberculosis. High tuberculosis (TB) is an important target group for TB prevention (Akram, 2020; Thomas, 2017). Treating tuberculosis (TB) is important to reduce morbidity and mortality as well as the risk of ongoing transmission, but it can be a challenge to support and monitor people with TB during full treatment. Treatment for active TB usually requires a daily combination of drugs for six months or more (eg 20 months or more for multi-drug resistant TB (Getahun et al., 2015; Gill et al., 2022).

In a low-incidence country such as Canada, TB develops predominantly from reactivation of latent TB infection (LTBI), an asymptomatic form of active TB commonly found in migrants from high incidence countries. Although treating LTBI with isoniazid for 9 months can prevent TB from developing in about 90% of infected people, acceptance and completion of LTBI treatment is generally low in immigrants from countries with a high TB

burden. Treatment completion is understood to depend, in part, on immigrants' knowledge and attitudes towards LTBI (Kiazyk & Ball, 2017; Muñoz et al., 2015).

Self-efficacy, transmission prevention behavior and medication adherence are several factors that can support the Tuberculosis (TB) control program. According to Nola J Pender, the Health Promotion Model (HPM) is a health behavior model. Motivation for healthy behavior is based on a desire to prevent disease (primary prevention) or to achieve a higher level of well-being and self-actualization (Tomey, M, A & Alligood, R, 2010).

Health promotion model is a combination of 2 theories, namely: 1). Expextancy value theory, this theory explains that people tend to work towards goals that are valuable to them. People will strive to achieve goals that are believed to be achieved and will produce the desired results. 2). Social cognitive theory (social cognitive theory), the main principle of this theory is self efficacy. Bandura's theory proposes that the greater a person's self-efficacy for behavior, the more likely that person is involved in it and is committed to acting and actually performing the behavior. For health promotion interventions to be effective, a suitable and locally relevant communication strategy must be identified, which can then be transformed into public health action. Such transformation can be achieved through the use of various health service provider media and communication platforms. Coordination of health promotion activities also needs to be strengthened through multi-sectoral involvement.

Another important aspect of strengthening health promotion in the country relates to training reform for public health practitioners, particularly around health education and health promotion strategies. (Chipare et al., 2020).

The purpose of this study was to conduct a systematic review on the effect of giving tuberculosis health promotion. In this study, the authors identified a journal of publication of research results on health education in tuberculosis for preventive behavior and medication adherence, where the study used a variety of methods to convey tuberculosis education / material with its effectiveness. The results of this systematic review are expected to be applied by health workers as well as in health services, especially nursing. This systematic review is presented in the form of articles consisting of; abstract, introduction, methods, results and discussion, implications for practice, conclusions, bibliography, and attachments.

METHOD

PICOT Framework

Population: Patients, families and health workers. *Intervention*: *Health promotion or Education. Control*: not using control. *Outcomes*: Interventions that increase self-efficacy in behavior prevention and adherence to taking medication by patients. *Time*: 2015-2020.

Keyword

Based on determining keywords according to the topics contained in the PECOT framework and equipped with the Boolean Logic method (Science Direct, Elseiver, Sage Journals, Scopus, Pudmed, and *CINAHL)*then the English keyword used is "Health promotion" OR health education AND self efficacy AND Tuberculosis. The keywords used are "health promotion, education, tuberculosis".

Selection of articles

Searching through the keywords above yields 267 (PubMed), 311 (Science direct), 303 (Sage Journal), 187 (Scopus), and 120 (CINAHL) articles, from all articles after reviewing their suitability with the topic, 16 articles were found in the language of English.

Flow diagram

The flow diagram in this systematic review can be seen in the Figure 1.

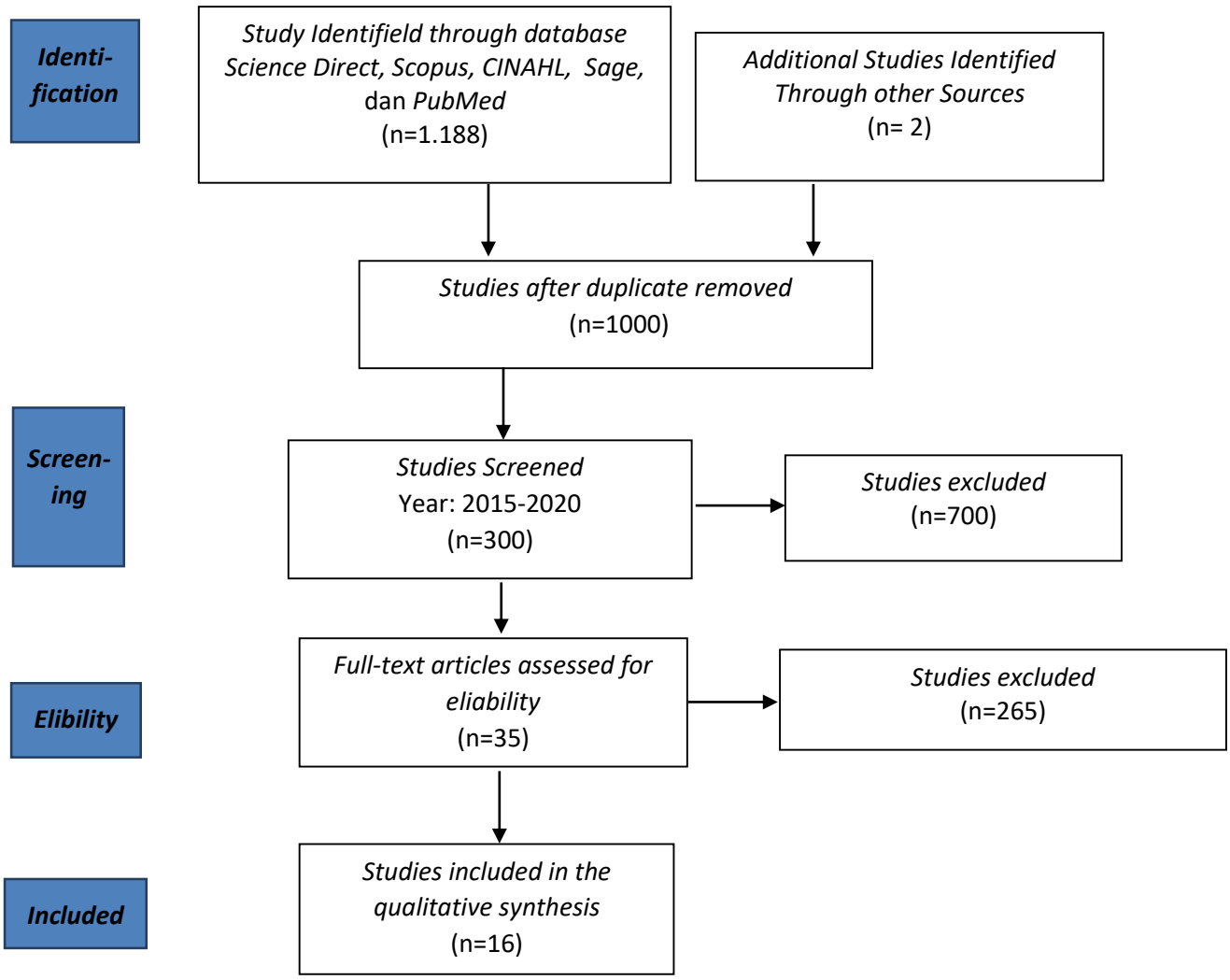

Figure 1. Flow diagram

RESULTS AND DISCUSSION

It reviews 16 selected articles and all of them are in English. Articles were obtained from a database of 2 articles from Science Direct, 1 article from CINAHL, 1 article from CINAHL, 9 articles from Scopus, and 3 articles from PubMed.

The results of the Systematic Review and PICOT from the 16 articles are attached to the table, and based on Table 1, the authors found variations in the study design, including 8 articles using a prospective study design, 2 articles using a cross sectional study, 6 articles using a randomized controlled trial (RCT) and 1 article using a quasi-experiment. The number of samples from the study varied from 27 to 1,213 respondents, in which the study used observation measuring instruments, questionnaires and knowledge level assessment sheets. From the results of the review, there are various methods of providing health promotion to tuberculosis patients in the Table 2.

Table 1. Results of literature search for systematic review

Source Language	Database	N	Types of Research Studies				
			Retrospective	*Prospective*	*Cross Sectional*	RCT	*Quasi-Experiment*
English	*Science Direct*	2	-	-	-	2	-
	Scopus	9	-	6	1	1	1
	CINAHL	1	-	-	-	1	-
	Sage	1	-	-	1	-	-

	PubMed	3	-	1	-	2	-
total		16	-	7	2	6	1

Table 2 List of methods that can be used in providing health promotion interventions

No.	Health Promotion Delivery Methods	Author
1.	Conventional health promotion	(Bisallah et al., 2018; Gashu et al., 2021; Kerr et al., 2020; Spruijt et al., 2020; Tola et al., 2016; Zare et al., 2017).
2.	Health promotion training	(Adane et al., 2019)
3.	Health promotion digital training	(Ali et al., 2018)
4.	Online video about tuberculosis	(Gao et al., 2018)
5.	SMS	Caminero et al (2017) and Georges Bediang et al (2018)
6.	Traditional language educational videos on DVD	(Massey et al., 2015)

Based on Table 2, the authors found 6 kinds of methods that can be used in providing health promotion about tuberculosis, namely conventional health promotion (delivery of promotions using direct education), health promotion training, digital health promotion training, online videos about tuberculosis, SMS and language educational videos. traditional via DVD. It can be concluded from a collection of article references that there are many methods that can be used in health promotion, but in the article there are still more conventional methods that apply direct implementation or direct interaction between health promotion providers and participants, so this systematic review discusses the effect of giving tuberculosis health promotion interventions in patients, families and communities.

In the results of the review above, from 16 journals, it was explained that there was an effect of health promotion on self-efficacy, transmission prevention behavior and compliance with taking medication in TB patients. Based on the mean value of the pretest and posttest, the treatment group experienced an increase in self-efficacy after being given health promotion than the control group. This increase in self-efficacy is marked by an increase in patient confidence that they can provide support for themselves in facing the disease, increased confidence that TB disease can be cured, increased confidence that health workers can help provide information about TB and increased confidence that TB disease can be cured if undergoing treatment regularly.

Several studies have shown that a number of factors influence TB treatment adherence. Among these factors, knowledge of TB and its treatment, distance to the nearest health facility, perceptions of stigma, perceptions of the disease and its treatment, psychological stress, changes in residence, and economic status (Kebede & Wabe, 2012). Where poor adherence to TB treatment can have detrimental effects, such as the potential for further TB transmission, recurrence, acquired drug resistance, treatment failure, and death (Kliiman & Altraja, 2010; Pablos-Méndez et al., 1997). So that many researchers and government programs implement health promotion for tuberculosis control.

In giving health promotion, the theory of health promotion model (HPM) can be used. The HPM theory is a theory that explains disease prevention behavior, but does not include fear or threats to the target, so that respondents are more motivated. The group process is one of the health promotion strategies and will occur as an individual and group interaction. This is very useful for the continuity of behavior implementation because between individuals and groups will have a positive impact. Seeing the importance of TB in community groups for health promotion and prevention of the risk of transmission, this can be done by providing health education using the group process method (Galloway, 2003; Hwang & Kim, 2020).

In recent years, patients and healthcare providers have benefited from increased access to digital communication technology. Cell phone ownership has grown rapidly in areas with high TB incidence and burden. The number of mobile subscriptions now exceeds the number

of people globally, with widespread penetration to low and middle-income countries, including people with low socioeconomic status (Lester et al., 2019). So that in research Caminero et al (2017) and Bediang et al (2018) provide education about TB via SMS, but we can re-develop this technique, such as using MMS or with existing social media to further reduce funding. Other innovations were also carried out by several other articles, namely digital health promotion training by Ali et al (2018), online videos about tuberculosis by Gao et al (2018) and traditional language educational videos via DVD by Massey et al (2015).

Thus, the advantages of health promotion help patients change their behavior towards improving health and well-being by teaching, training, motivating and facilitating patients. Prevention of pulmonary TB transmission skills such as wearing a mask, covering the mouth when coughing or sneezing, increasing the knowledge and attitudes experienced by respondents can change the respondent's actions in preventing TB transmission for the better.

Knowledge is one way to improve health in society, for example increasing knowledge about tuberculosis. Health promotion is an effort or program to increase knowledge in prevention of transmission and adherence to taking medication in tuberculosis sufferers. Where in carrying out health promotion, education will be given in the form of comprehensive information by health workers, so that people understand and can apply it.

By knowing the various methods of delivering material from health promotion, from using conventional models to using digital media (SMS, DVD, E-Learning, etc.) which are quite effective and make it easier for health workers to implement them. However, after conducting the research to get satisfactory results, it is hoped that health workers and the government will be able to reduce the incidence of transmission and recurrence due to non-compliance with taking medication in TB control.

CONCLUSION

Tuberculosisis one of the infectious diseases causing the biggest health problems in the world. Health promotion by health workers is needed by patients with tuberculosis or for families where one of their family members has tuberculosis. Through this systematic review, the authors try to identify how to prevent using health promotion interventions. And the results of the translation of several related articles, allow the provision of health promotion to be done digitally over time. From 16 journals that were reviewed, various methods were found to implement a health promotion and it can be concluded that the most effective method is to use conventional methods of health promotion for prevention of transmission and adherence to taking medication in patients.

RECOMMENDATION

Because the conventional method is given directly to patients and families by delivering direct promotions. After knowing the various kinds of methods and benefits of doing health promotion, it is hoped that they can become an appropriate reference for health workers and government programs in controlling tuberculosis.

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