Effect of Counselling on Medication Adherence in Tb Patients with the DOTS Strategy: A Scoping Review

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ABSTRACT

Tuberculosis (TB) is an infectious disease caused by the bacteria Mycobacterium tuberculosis; these bacteria can attack various organs especially the lungs. Lack of knowledge and awareness of the importance of taking medication which leads to poor patient adherence in treatment thus increases the risk of morbidity, mortality and drug resistance in TB patients. Providing counselling is an effort to increase patient's knowledge and understanding to increase their compliance with medication. This study aims to determine the effect of counselling in increasing medication adherence to TB patients with the DOTS strategy through a literature review. This study used a literature study research method by examining 11 journals related to counselling in increasing medication adherence to TB sufferers. The data was collected by searching data based on article data published on the Google Scholar, Proquest, Pubmed, and EBSCOhost websites. Then the data were analyzed using descriptive analysis. The data was then assessed using the Joanna Briggs Institute (JBI) and data extraction was carried out. In 11 journals related to counselling in improving medication adherence to TB patients, it was found that 11 journals proved that there was an effect of counselling in increasing medication adherence of TB patients with the DOTS strategy. Counselling added to the DOTS strategy is effective in increasing medication adherence to TB patients compared to the DOTS strategy without counselling. There are several methods of providing counseling such as individual counseling, counseling with a psychological approach, telephone counseling, leaflet-based counseling, counseling-based motivational interviewing. The conclusion of this study is that counselling can improve medication adherence to TB patients with the DOTS strategy. By providing counselling, it can increase the patient's knowledge and understanding so that it can change the patient's behavior to a better and positive direction, which is shown by the patients' behavior who adherence to TB medication.

Keyword: Counselling, Medication Adherence, Tuberculosis, Sufferers, Directly Observed Treatment Short

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Kata kunci:
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Kepatuhan pengobatan
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ABSTRAK

Tuberkulosis (TB) adalah penyakit menular yang disebabkan oleh bakteri Mycobacterium tuberculosis; bakteri ini dapat menyerang berbagai organ terutama paru-paru. Kurangnya pengetahuan dan kesadaran akan pentingnya minum obat yang menyebabkan rendahnya kepatuhan pasien dalam pengobatan sehingga meningkatkan risiko morbiditas, mortalitas dan resistensi obat pada pasien TB. Pemberian konseling merupakan upaya untuk meningkatkan pengetahuan dan pemahaman pasien untuk meningkatkan kepatuhatannya dalam minum obat. Penelitian ini bertujuan untuk mengetahui pengaruh konseling dalam meningkatkan kepatuhan minum obat pada pasien TB dengan strategi DOTS melalui studi pustaka. Penelitian ini menggunakan metode penelitian studi kepustakaan dengan menelaah 11 jurnal terkait penyuluhan dalam meningkatkan kepatuhan minum obat pada penderita TB. Pengumpulan data dilakukan dengan...
mencari data berdasarkan data artikel yang dipublikasikan di website Google Scholar, Proquest, Pubmed, dan EBSCOhost. Kemudian data dianalisis dengan menggunakan analisis deskriptif. Data tersebut kemudian dinilai menggunakan Joanna Briggs Institute (JBI) dan dilakukan ekstraksi data. Pada 11 jurnal terkait konseling dalam meningkatkan kepatuhan minum obat pada pasien TB ditemukan 11 jurnal yang membuktikan adanya pengaruh konseling dalam meningkatkan kepatuhan minum obat pasien TB dengan strategi DOTS. Konseling dengan strategi DOTS lebih efektif dalam meningkatkan kepatuhan minum obat pada pasien TB dibandingkan dengan strategi DOTS tanpa konseling. Ada beberapa metode pemberian konseling seperti konseling individu, konseling dengan pendekatan psikologis, konseling telepon, konseling berbasis leaflet, dan wawancara motivasi berbasis konseling. Kesimpulan dari penelitian ini adalah penyuluhan dapat meningkatkan kepatuhan minum obat pada pasien TB dengan strategi DOTS. Dengan memberikan penyuluhan dapat meningkatkan pengetahuan dan pemahaman pasien sehingga dapat mengubah perilaku pasien ke arah yang lebih baik dan positif, yang ditunjukkan dengan perilaku pasien yang patuh minum obat TB.

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INTRODUCTION

Tuberculosis is an infectious disease caused by the bacteria Mycobacterium tuberculosis, this bacterium more often attacks the lung organs but does not rule out attacking other respiratory organs. Tuberculosis can spread through the air, for example when a person cough. Tuberculosis (TB) is one of the ten diseases that cause death in the world (World Health Organization, 2019). Tuberculosis (TB) is currently still a public health problem both in Indonesia and in the world, so it is one of the goals of sustainable health development (SDGs). Tuberculosis in Indonesia is in the 3rd rank in the world with the most TB sufferers after India and China (Kementrian Kesehatan Republik Indonesia, 2020).

According to the World Health Organization (WHO) in 2018, there were an estimated 10.0 million people with cases of tuberculosis (TB), around 1.2 million deaths due to tuberculosis, and an additional 251,000 deaths from tuberculosis with HIV (World Health Organization, 2019). Tuberculosis mostly affects men over 15 years of age (57%), women (32%), and children under 15 years of age (11%). In all TB cases, 8.6% of patients were also HIV positive. In Indonesia, the incidence of tuberculosis (TB) in 2019 was 526,977 cases, with details of 303,656 men, 223,321 women, and 63,111 children. Meanwhile, East Java province in 2019 ranks second-most in Indonesia with 64,946 cases with details of 35,929 men, 29,017 women, and 5,239 children (Kementrian Kesehatan Republik Indonesia, 2020).

Failure in handling TB is due to patient non-compliance in taking medication, lack of knowledge, and low awareness of the importance of taking medication. Patients’ non-compliance with treatment was the main cause of failure of treatment as much as 19.3% of the total TB sufferers in Indonesia (Rojali & Noviatuzzahrah, 2018). The rate of non-adherence to treatment is estimated to be more than a quarter of TB sufferers who fail to complete treatment for 6 months, so this is considered one of the causes of the emergence of 6 months, so it is considered one of the causes of the emergence of multidrug-resistant (TB MDR) (Alsahar, 2020). In 2018 MDR TB cases in the world were estimated at 186,772, of which only 156,071 cases received treatment. Indonesia is one of the 30 countries with the highest MDR TB cases as many as 24,000 cases with 13% having undergone treatment (World Health Organization, 2019).

Tuberculosis control and treatment efforts in Indonesia since 1995 have implemented a strategy according to the recommendations of the World Health Organization (WHO), namely the DOTS (Directly Observed Treatment Short-course) strategy. The DOTS strategy can be defined by direct supervision of taking short-term medication by the Supervisor for Drug Swallowing (Inayah & Wahyono, 2019). This strategy is used in the control of TB disease by further enhancing the diagnosis of TB with microscopic sputum examination, treatment with Supervisor for Drug Swallowing, short-term anti-TB drug supplies with guaranteed quality and recording and reporting to facilitate monitoring and evaluation of TB control programs (Kementrian Kesehatan Republik Indonesia, 2020).

The key to TB patient adherence in treatment depends on the patient’s level of knowledge about the disease and support from family (Saragih & Sirait, 2020). One of the efforts to increase the knowledge of TB sufferers is by providing counseling. Counseling is the process of providing assistance carried out by nurses or counselors to individuals through interviews and behavioral change techniques to identify and solve problems currently faced by clients. If the client’s problem can be resolved, of course, it will foster enthusiasm and behavior change towards a better and positive direction. Behavioral changes are indicated by behaviors that are different from usual, such as changes in knowledge, changes in understanding, and attitudes (Kurniash & Rahmat, 2019).

Based on the background description above, the researcher wants to conduct further research on the effect of counseling in increasing treatment adherence to TB patients with the DOTS strategy, which aims to know whether there is an effect of counseling in increasing treatment adherence to TB patients with the DOTS strategy through literature studies.

METHOD

Search Strategy

The literature search in this literature review uses 4 databases with high and moderate-quality criteria, namely

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Google Scholar, ProQuest, Pubmed, EBSCOHost. Keywords in this literature review consist of: ("Counseling") AND ("Medication Adherence") AND ("Tuberculosis Sufferers") AND ("DOTS"). Search results for journals: Google Scholar for 6 journals, Proquest for 2 journals, Pubmed with 3 journals, and EBSCOhost for 0 journal. The search was conducted to determine the effect of counseling in increasing treatment adherence to TB patients with the DOTS strategy.

**Inclusion Criteria**

The inclusion criteria in this study are as follows: 1) Journals published in the 2015-2020 timeframe. 2) International and national journals 3) Journals with RCT research designs, Quasi Experiment and Comparative Study. 4) Journals that discuss Counseling, Medication Adherence, and Tuberculosis Patients. 5) Patients undergoing TB treatment with the DOTS strategy. 6) Journal that can be accessed in full (Full text).

**Study Selection and Data Extraction**

![Diagram Flowchart](image)

**RESULT AND DISCUSSION**

**Literature Search**

The literature search resulted in 169,640 journals which were then screened into 57,752 with the criteria of journals published in the 2015-2020 timeframe, journals with RCT research designs, quasi-experiments, comparative studies, journals that discuss counseling, medication adherence, and tuberculosis patients, a journal that can be accessed in full (full text). The second screening of journals was carried out by looking at titles and abstracts according to PICO (Problem, Intervention, Compare, Outcome) which resulted in 11 journals that met the inclusion criteria.
Table 1
Data Analysis

<table>
<thead>
<tr>
<th>Author</th>
<th>Study Design</th>
<th>Total of Patients</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Suwannakeeree et al., 2015)</td>
<td>Randomized Controlled Trial</td>
<td>50 Tb patients</td>
<td>The results showed that the mean score of treatment adherence in the intervention group at three months after program implementation was significantly higher (p = 0.000) than in the control group.</td>
</tr>
<tr>
<td>(Hussain et al., 2016)</td>
<td>Randomized Controlled Trial</td>
<td>100 female TB patients</td>
<td>The success rate in the intervention group was 100%. The self-esteem score before the intervention was 10.42, after the intervention became 17.44 (p &lt;0.05). This study showed that patients with higher self-esteem were more likely to adhere to treatment. The results showed that there was an effect of the telephone counseling approach in improving treatment adherence in TB DOTS patients with poly tuberculosis at Dungus Madiun Hospital (sig = 0.007 &lt;=a = 0.05).</td>
</tr>
<tr>
<td>(Winarto &amp; Bintoro, 2018)</td>
<td>Quasi-Experimental Study</td>
<td>15 Tb patients</td>
<td></td>
</tr>
<tr>
<td>(Muller et al., 2019)</td>
<td>Randomized Controlled Trial</td>
<td>169 Tb patients</td>
<td>The cure rate in the intervention group was 71.3% and in the control group 58.4%. This strategy increases TB cure rates and directly affects one of the challenges of TB control, namely increasing adherence to treatment.</td>
</tr>
<tr>
<td>(Prasetyo et al., 2015)</td>
<td>Quasi-Experimental Study</td>
<td>68 Tb patients</td>
<td>The results showed that the TB health promotion program was effective in increasing the compliance with TB patients taking medication (p &lt;0.01).</td>
</tr>
<tr>
<td>(Karuniawati et al., 2019)</td>
<td>Quasi-Experimental Study</td>
<td>75 Tb patients</td>
<td>Counseling added with leaflets was effective in increasing medication adherence. The results showed that pharmacist-mediated counseling in tuberculosis patients showed a significant increase in knowledge and level of treatment adherence (p &lt;0.05).</td>
</tr>
<tr>
<td>(Coruntla et al., 2020)</td>
<td>Quasi-Experimental Study</td>
<td>258 Lung TB patient smear positive</td>
<td></td>
</tr>
<tr>
<td>(Khachadourian et al., 2020)</td>
<td>Randomized Controlled Trial</td>
<td>385 Tb patients</td>
<td>The results showed that the treatment success in the intervention group was not lower than in the control group. The intervention group resulted in improved treatment adherence.</td>
</tr>
<tr>
<td>(Tola et al., 2016)</td>
<td>Randomized Controlled Trial</td>
<td>698 Tb patients</td>
<td>The results showed that psychological counseling and educational interventions were effective in reducing the level of non-adherence in the intervention group.</td>
</tr>
<tr>
<td>(Aamir et al., 2016)</td>
<td>Comparative Study</td>
<td>60 Tb patients</td>
<td>The results showed the dropout rate in the experimental group (16.6%) and the control group (70%).</td>
</tr>
<tr>
<td>(Zuliani, 2019)</td>
<td>Quasi-Experimental Study</td>
<td>18 Tb patients</td>
<td>The results showed that counseling-based motivational interviewing had an effect on decreasing despair (p = 0.000) and increasing motivation and medication adherence (p = 0.000).</td>
</tr>
</tbody>
</table>

Tabel 2
Counselling intervention

<table>
<thead>
<tr>
<th>Author</th>
<th>Intervention group</th>
<th>Control group</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Suwannakeeree et al., 2015)</td>
<td>MAEP Program (Medication Adherence Enhancement Program) consists of two components, including: activities to increase self-awareness of self-regulation to comply with TB treatment, and the second component provides environmental support such as selecting family support, telephone reminders and counseling. Counseling is given in 3 sessions where 1 session is individual counseling and 2 sessions are group counseling. Added education about TB treatment and also given strategies in dealing with anxiety.</td>
<td>Routine care includes health education about the treatment of pulmonary tuberculosis, treatment of tuberculosis, as well as counseling on side effects and prevention of TB transmission.</td>
</tr>
<tr>
<td>(Hussain et al., 2016)</td>
<td>Counseling was given on D-7 and D-2 before scheduled control. Educational strategies are provided with educational materials regarding TB available on the website, pre-discharge counseling regarding illness, importance of follow-up, treatment in primary health care and monitored</td>
<td>Educational intervention that includes comprehensive information regarding treatment, etiology, duration, drug side effects, and consequences of treatment failure. there is no control group</td>
</tr>
<tr>
<td>(Winarto &amp; Bintoro, 2018)</td>
<td>Telephone counseling was given on D-7 and D-2 before scheduled control.</td>
<td>Usual care according to the Brazilian TB control program.</td>
</tr>
<tr>
<td>(Muller et al., 2019)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
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(Counseling Intervention)

DISCUSSION

Counseling Intervention

Of the 11 journals that have been analyzed discussing counseling interventions in increasing treatment adherence to TB sufferers. There are several methods of providing counseling such as individual counseling, counseling with a psychological approach, telephone counseling, leaflet-based counseling, and counseling-based motivational interviewing.

Based on the 11 journal articles that have been analyzed, the results show that:

1. Counseling can improve the adherence of TB patients in carrying out their treatment. In the study (Winarto & Bintoro, 2018) it was found that counseling using the telephone method could improve medication adherence with a value of sig = 0.007 < α = 0.05, which means that there is an effect of providing telephone counseling on patient compliance. In another study (Karuniawati et al., 2019) the counseling method with leaflets showed a value (p 0.003), where there was an effect of providing counseling with leaflets on treatment adherence of TB patients.

2. Counseling is provided by several methods such as telephone counseling, psychological counseling, motivational interviewing (counseling), individual counseling, and counseling with leaflets.

Providing counseling is very important in order to avoid failure in the treatment of TB caused by patient non-compliance in taking medication, lack of knowledge, and low awareness of the importance of taking medication.

Taking anti-tuberculosis (OAT) drugs for a long time resulted in the patient experiencing several side effects such as dizziness, vomiting, boredom, and laziness, even the patient felt he had recovered no complaints so he no longer took the medicine so that it made the patient disobedient in underwent treatment for Tb. The benefit of the counseling provided is the increased compliance of TB sufferers in treatment so that it can reduce the mortality rate and cost or other losses. Counseling is proven to be effective in increasing TB sufferers' adherence to treatment, this is evidenced by the increased patient adherence after being given counseling. Most of the respondents adhered to treatment based on routine control and taking medication.

Effect of Counseling on Medication Adherence in Tb Patients

In the counseling process, there is an approach or process of establishing a relationship between the counselor and the patient, whereby creating a positive relationship between the two, it is hoped that the patient can open up and talk about whatever is on their mind. That way the counselor can find out the patient's problems that make the patient behave maladaptively and help the patient to overcome the problem. Selain dilakukannya pendekatan, di dalam proses konseling juga terdapat pemberian motivasi oleh konselor
CONCLUSION AND RECOMMENDATIONS

After carrying out a series of research processes, based on the results of research in national and international journals regarding the study of the effect of counseling in increasing treatment adherence to TB patients with the DOTS strategy, it can be concluded that counseling given by nurses and pharmacists can improve treatment adherence to TB sufferers so that it can increase treatment success. Counseling given by several kinds of methods can significantly increase knowledge and treatment adherence to TB sufferers.

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Conflict of Interest statement

The author declares that there is no conflict of interest.

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