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Relationship between knowledge level and compliance with leprosy treatment

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ABSTRACT

Indonesia is not immune to the global epidemic of leprosy, an infectious illness. The purpose of this research is to identify any correlation between leprosy treatment adherence and level of knowledge. Data included in this literature review comes from secondary sources rather than primary ones; in other words, it is not based on first-hand observation but rather on the findings of earlier studies. From these five articles, we may infer the following about the respondents: their ages range from zero to fourteen, their levels of education, whether or not they are employed, and the extent to which they know about leprosy: high, medium, and low. The study's findings demonstrate that the five publications provide solid proof that leprosy patients' adherence to treatment is correlated with their level of understanding. The greater the level of information that lepers possess, the more compliant they will be in regards to leprosy treatment.

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INTRODUCTION

Leprosy is an infectious disease that causes very complex problems. The problem in question is not only from a medical perspective but extends to social, economic, cultural, security and social security issues (Rashid, 2022). This disease can have an impact on permanent disability if not handled properly. Not only from a medical perspective, leprosy also affects social and economic problems(Noratikasari & Ariyanto, 2020).Lepers will tend to lose productivity at work. In addition, the negative attitudes and behavior of the community will cause leprosy sufferers to feel that they do not have a place in the family or community environment (Curnelia & Kiswono, 2016).

The Ministry of Health (2018) revealed that based on data from the Weekly Epidemiological Report (2016) worldwide there were 210,758 cases of leprosy spread across 6 world regions, namely for Africa there were 20,004 cases, America 26,806 cases, Mediterranean 2,167 cases, Southeast Asia 156,118 cases, Pacific West as many as 3,645 cases and Europe as many as 18 cases. The East Java Provincial Health Office stated that in 2017 East Java Province contributed to the highest prevalence of leprosy in all of Indonesia, namely as many as 3373 new cases of sufferers with a total of 3645 registered cases and known disabled leprosy sufferers of type

II by 8.8% (East Java Provincial Health Office, 2018). The East Java Provincial Health Office (2018) explained that in Jember Regency there were 353 new cases of leprosy. This makes Jember Regency the Regency with the second highest prevalence of leprosy after Sumenep Regency with 463 cases. The Jember District Health Office (2017) revealed that there were 353 new cases of leprosy where 58 cases were of the Pausi Basiler (PB) type of leprosy and 295 cases were of the Multy Basiler (MB) type. The working area of the Sumberbaru Health Center is the area with the highest prevalence of leprosy in Jember Regency, namely 35 cases, where there are 3 cases of Paused Basiler (PB) type and 32 cases of Multy Basiler (MB) type (DODIK, 2021).

Factors related to leprosy treatment include patient knowledge, adherence to taking medication, family support, access to health services and the role of health workers in providing KIE about leprosy as well as availability of drugs and availability of examination places (Ministry of Health RI, 2012). Research conducted (Robikhati Zakiyyah & Budiono, 2015) shows that there is a relationship between family knowledge and adherence to taking medication for leprosy patients. In addition to knowledge and family support factors, community stigma is also related to patient adherence in taking medication. Providing facilities for treatment, officers also teach how to take care of themselves to prevent disability from progressing to a more severe level. Some of the officers' roles include treating and following-up leprosy reactions, and providing education about wound care to sufferers (Hannan et al., 2020) Leprosy sufferers must be able to carry out regular self-care so that the disability that has already occurred does not get worse. This situation requires the family to have good knowledge of the problem of leprosy (Mahanani & Nurmasfufah, 2020).

This disease has a fairly severe impact on sufferers. This impact can be in the form of a disability that causes a change in growth shape (Lestari, Arwani, & Purnomo, 2013). The psychological impact of leprosy is quite large and causes very deep anxiety, not only for the sufferers themselves but for their families, communities and the State. This underlies the concept of the behavior of acceptance of sufferers towards their disease where in this condition many sufferers still think that leprosy is a contagious disease, cannot be treated, is a hereditary disease, cursed by God, unclean, and causes disability. As a result of this wrong assumption, leprosy sufferers feel hopeless, causing depression (Wiyaniputri & Su'udi, 2019).The impact of leprosy on the family is that the family feels ashamed to the public about the disease experienced by one of their family members and there is a risk of transmission to other family members (Seshadri dkk., 2014).

In the year 2000, the World Health Organisation (WHO) spearheaded worldwide efforts to eradicate the disease. Programmes such as the Special Action for Elimination (Sapel) and the Leprosy Elimination Campaign (LEC) have been initiated by Indonesia since then (Hajid dkk., 2019). Maximising the accessibility and affordability of Multi Drug Therapy (MDT) treatment in all primary health centres or leprosy special hospitals, enhancing the competencies and expertise of responsible officers, and fostering more collaborative partnerships across programmes and sectors are all potential strategies for eliminating leprosy (Zul & Rustam, 2021).

Even in modern-day Indonesia, leprosy (also known as Hansen's disease) remains a major concern for public health. One of the biggest problems with modern medicine is that many still don't take their medications as prescribed. Several variables influence leprosy patients' adherence to therapy, according to prior research. But we don't yet know how exactly information affects compliance rates. Previous research by (Agusstyawan, 2020) indicated that family social support plays a crucial role in medication adherence among leprosy patients in Bondowoso, Indonesia. Similarly, a study by (Jachak & Saklani, 2007) on polypharmacology highlighted the complexities and opportunities in drug discovery and compliance. This literature review seeks to differentiate from past studies by focusing exclusively on the relationship between knowledge levels and compliance with leprosy treatment. This study aims to provide a comprehensive overview of how knowledge influences adherence, addressing the broader implications for public health strategies and education programs aimed at leprosy patients.

Understanding how patients' knowledge levels relate to their adherence to prescribed leprosy treatments is the main goal of this study (Mankar dkk., 2011). Our hope is that by drawing attention to these possible solutions, we might strengthen educational activities and thereby increase treatment adherence. The purpose of this review is to provide fresh insights into the role of knowledge in treatment adherence by comparing these results with prior research. This will eventually lead to more effective public health interventions for leprosy management.

The background of this study is rooted in the observation that knowledge about leprosy and its treatment significantly impacts patient compliance. Knowledge about the disease, its transmission, symptoms, and the importance of adhering to the treatment regimen can empower patients to take their medications correctly and complete the treatment course. This study aims to explore the relationship between the level of knowledge about leprosy among patients and their compliance with the treatment regimen. Previous studies have indicated that a higher level of understanding of the disease and its treatment correlates with better compliance rates. However, there is limited comprehensive research on this topic, especially in regions where leprosy is endemic. By investigating this relationship, the study seeks to contribute to the development of educational interventions that can improve treatment compliance and ultimately aid in the control and eradication of leprosy.

This research adds to what is already known about leprosy treatment compliance by showing how important patient education is. This study will have significant ramifications since it will reveal a direct correlation between patients' levels of knowledge and their adherence to therapy. The first thing it will do is highlight how important it is for leprosy treatment programmes to include extensive educational programmes. These findings may be used by healthcare providers and lawmakers to create and execute patient education programmes that are more efficient, which would improve health outcomes.

This research is a review of the literature that draws on prior studies' secondary data. We used Google Scholar to find national publications and journals in August and September 2020 for our secondary data. A combination of keywords like "Knowledge" and "Medication adherence" as well as "Leprosy sufferers" were used to narrow the search results using Boolean operators (AND, OR, NOT) in accordance with the Medical Subject Heading (MSH) standards. In light of the above, the researcher intends to do a Literature Review investigating the correlation between patient education and leprosy treatment adherence.

The specific objectives of the research on the relationship between knowledge level and compliance with leprosy treatment can be outlined to propose evidence-based strategies and educational interventions aimed at improving patient knowledge and compliance with leprosy treatment and to recommend policy changes or health system improvements that support better management and control of leprosy.

RESEARCH METHOD

Data included in this literature review comes from secondary sources rather than primary ones; in other words, it is not based on first-hand observation but rather on the findings of earlier studies. Secondary data sources were sourced in August and September 2020 from national articles and journals through Google Scholar. Keywords based on Boolean operators (AND, OR, NOT) were utilised to either broaden or specify searches, making it easier to determine which articles or journals were utilised. Adapted to the Medical Subject Heading (MSH), the following keywords comprise this literature review: Subjects: "Knowledge" and "Medication adherence" as they pertain to people with leprosy.

The strategy used in searching for articles uses the PEOS framework, which consists of (Tolibah, 2021): firstly, the population/issuein particular the target audience or issue at hand as identified by the reviewed literature, namely leprosy patients' familiarity with the disease and their willingness to take prescribed medication, (2) Caught in the Mixin particular, the elements that

impact the state of the populace as discussed in the next literature review, (3) Results, including those from prior research that corroborate the patterns identified in the literature review and (4) Research methodology, or the specific methods used to compile the data for the reviewed article.

Article quality may be evaluated via critical appraisal by using evaluation checklists that include many questions to evaluate the article's research designs. Every evaluation criterion is given a score between one and three, with one point going to criteria that were deemed 'yes' and zero points going to those that were deemed 'unclear' or 'not relevant.' The scores from each research are then added together. To ensure the validity of the results and review recommendations, studies can be included in the criteria provided their research score is at least 50% and meets the critical appraisal criteria with an agreed-upon cut-off point value. However, studies of low quality will not be included in this process (Nurul Basyiroh & Lailiyah, 2022): (1) hypothesis: Unsuitable, out-of-date hypothesis that does not hold water, (2) Methodology: The methodology does not support the aims of the study, (3) Sampling: The samples, population, sampling method, and sample size do not follow the regulations for sampling. Quantitative, confounding variable, and other variable appropriateness considerations rule out the selected variable. (4) Technology: The used technology lacks sensitivity, specificity, validity, dependability, and (5) Data analysis: The data analysis does not follow the criteria for analysis.

After adjusting the keywords for the Garudan site and Google Scholar, the researchers conducted a literature search via two databases and discovered 120 articles that fulfilled the criteria. After that, we check the retrieved search results for duplicate content. Out of the 77 articles, we eliminate 43 that are too similar. After being re-screened using PEOS, five articles were selected for a critical evaluation. These articles were then altered to fit the topic of the literature review and met the requirement of over 50%. Five papers met the inclusion and exclusion criteria, and their eligibility was considered for the literature review. It is possible to illustrate the outcomes of the article selection process using a flowchart.

RESULTS AND DISCUSSIONS

Our search for scholarly articles and journals covering the subject of "Relationship of knowledge of leprosy patients with leprosy treatment adherence" turned up five publications; all of these publications were quantitative in nature and used descriptive statistics in their cross-sectional studies. Overarchingly, this research delves at the correlation between leprosy patients' awareness and treatment adherence. These five articles:

Table 1. Article search results

Journal/Volume Name	Title	Results
(Robikhati Zakiyyah & Budiono, 2015)	Factors related to the level of adherence to taking medication for leprosy sufferers in Brebes Regency	The findings demonstrated a correlation between medication adherence and factors such as attitudes, perceptions, family support, and staff assistance. Twenty-one people who took the survey had strong medication adherence, and twenty-one showed high knowledge. In addition, 24 responders exhibited knowledge, but only 8 demonstrated drug adherence..
(Meru & Winarsih, 2017)	Relationship between the level of knowledge about leprosy and adherence to taking MDT (MultiDrug Therapy) in Leprosy Patients at the Kejayan Health Center and Pohjentrek Health Center, Pasuruan Regency	Only 29 participants (or 70.7% of the total) had a very low degree of awareness regarding leprosy, according to the findings of this research. A noteworthy correlation ($p = 0.025$, $p<0.05$) was found between the amount of leprosy knowledge and the adherence to the MDT in leprosy patients at Kejayan Health Centre and Pohjentrek Health Centre in Pasuruan Regency, with the majority of respondents falling into the obedient category

Journal/Volume Name	Title	Results
		regarding their drinking compliance (23 respondents, or 56.1%).
(Panonsih & Lestari, 2017)	Relationship between family knowledge and compliance with leprosy treatment at RSUD dr. A Dadi Tjokrodipo Bandar Lampung.	The study's findings indicated that a correlation between family awareness and medication adherence existed, with a P-Value of 0.003 (α <0.005), according to the analytical test.
(Amelia et al., 2019)	Analysis of the Relationship between Leprosy Sufferers' Behavior in Seeking Treatment in the Work Area of the Tamalanrea Public Health Center, Makassar City	With a p value of 0.010, this research found that leprosy patients' knowledge was associated with their treatment-seeking behaviour.
(Agustin Fatmala, 2016)	Analysis of Factors Associated with Compliance Taking Leprosy Drugs in Pragaan District	Knowledge and adherence to leprosy drug regimen are positively correlated (p=0.01).

Reviewing all five papers revealed that there are distinct groups among the four that deal with knowledge level. While articles 3, 4, and 5 make use of the excellent, sufficient, and bad categories, articles 1 and 2 use the high, medium, and low categories. The results of Article 2's knowledge tend to be high, whereas Article 1's results are intermediate. There is a fair amount of dominating knowledge in the third article, sufficient in the fourth, and less in the fifth. According to a meta-analysis of five papers on the topic of medicine adherence, four of them utilised adherent and non-adherent categories, while one used good, adequate, and poor. The findings were overwhelmingly compliant in the four articles that employed the compliance category: articles 1, 2, 3, and 5. Article 4 was adequate for the most part.

Table 2. Relationship between knowledge level and treatment adherence

Article	Findings
(Robikhati Zakiyyah & Budiono, 2015)	In Brebes Regency, there is a correlation between the amount of adherence to medicine use by leprosy victims and the respondent's knowledge, as shown by the p value of 0.001 <α = 0.05, as derived from the chi square alternative test with cell merging.
(Meru & Winarsih, 2017)	A chi-square test significant P value of 0.025 <0.05 was shown by the findings. This suggests that being aware of the need of drinking MDT and actually doing so correlates.
(Panonsih & Lestari, 2017)	The substantial association between the amount of family awareness and adherence to treatment for leprosy victims was shown by the Spearman rank test findings, which got a significance value of 0.003 <0.05.
(Amelia et al., 2019)	The chi-square test yielded a p-value of 0.010 <0.05, indicating a correlation between leprosy patients' knowledge and their treatment-seeking behaviour at the Tamalanrea Health Center's working region, Makassar City.
(Agustin Fatmala, 2016)	Leprosy patients' knowledge and adherence to medicine taking were shown to be related, according to the results of the Fisher's Exact test (p = 0.01 <0.05).

A study of five publications indicated that all of them support the idea that leprosy patients' commitment to treatment is correlated with their level of education. There is a correlation between the level of adherence to medication for leprosy sufferers in Brebes Regency and the respondent's knowledge, as indicated by the p value of 0.001 <α = 0.05 in the analysis obtained from the chi square alternative test with cell merging in article 1. Article 2: A significant value of P value 0.025 <0.05 is shown by the chi-square test findings. This suggests that being aware of the need of drinking MDT and actually doing so correlates. The significance value of 0.003, which is less than 0.05, obtained from the Spearman rank test in the third article suggests a significant association between the amount of family knowledge and compliance with leprosy treatment. The findings of the chi-square test in article 4 showed a significant association between leprosy patients'

knowledge and their behaviour in seeking treatment, with a p-value of 0.010 <0.05. In the fifth article, it was shown by Fisher's Exact test that leprosy patients' knowledge and adherence to medicine taking were related, with a p-value of 0.01 <0.05.

Based on the results of the article review, it is known that of the 5 articles reviewed, there were 4 articles that used the compliant category, showing dominant results of compliance, namely article 1, article 2, article 3 and article 5. While article 4 was mostly sufficient. Age is related to compliance. The results of a review of 5 articles provide information if the respondent's age is> 14 years. According to Notoatmodjo, in terms of trust, people who are more mature will be trusted more than people who are not mature enough. This is as a result of the experience and maturity of his soul (Kusumastuti Hendrawan et al., 2020). The more mature a person is, the more mature the way of thinking and regular treatment. This is because medication adherence cannot be determined by a person's age. The more mature a person does not guarantee adherence to taking medication also increases. It all depends on each individual and the information obtained. Researchers understand that age is related to adherence.

The next compliance factor is knowledge. The results of a review of 5 articles provide information that respondents tend to have good knowledge. According to Notoatmodjo, knowledge is the result of knowing and this happens after people sense a certain object, from experience and research it is proven that behavior based on knowledge will be more lasting than behavior that is not based on knowledge (Kustantya & Anwar, 2017). In this study, referring to the results of the review of articles that have comparable levels of knowledge. According to its function, knowledge is a basic impetus to be curious, to seek reasoning, and to organize experience. The existence of elements of experience that were originally inconsistent with what is known by the individual will be rearranged, rearranged or changed in such a way as to achieve a consistency. The higher the level of knowledge, the better leprosy sufferers are in carrying out their treatment (Sulidah, 2016).

The researcher understands that the reviewed articles show results that are predominantly adherent. The researcher's assumption is because the respondents' compliance is based on their knowledge. Respondents know well that treatment is very important in recovery (Mull dkk., 1989). This knowledge will become literacy or the basis for the respondent's behavior, including adherence to taking medication. In general, the knowledge in this study is in the sufficient category, but a person's adherence does not always come from knowledge, it can be due to other people's experiences and opportunities in drug consumption.

The next compliance factor is education. The results of the review show that the dominant respondents have low education (Wahyuni & Selum, 2012) that there is no relationship between education and regularity of leprosy treatment. In the regularity of treatment between low and medium education levels is not much different. Regular treatment of a person does not depend on the high level of education that has been taken, but depends on how much knowledge the patient has about leprosy. Client education can increase adherence, as long as it is an active education. Researchers understand that education is the ability to receive direction and information. Education will also be a person's literacy in behavior. The higher a person's education, the more obedient he will be in carrying out treatment.

Referring to the research results from several articles showing that 5 research articles which stated that there was a relationship between the level of knowledge of leprosy sufferers and treatment adherence from all the articles reviewed.(Desviana et al., 2017) states that knowledge can be a driving force for someone to change their behavior. With the existence of supporting factors such as education and information, the respondents' knowledge of adherence to taking medication will be better. Factors related to leprosy treatment include patient knowledge, adherence to taking medication, family support, access to health services and the role of health workers in providing KIE about leprosy as well as availability of drugs and availability of examination places (Ministry of Health RI, 2012).

According to the study's findings, knowing that there is a connection between knowledge and adherence stems from the premise that people act in accordance with what they know. For example, if someone is well-informed about the advantages of medications and the process of leprosy healing, they will likely work to speed up the healing process and adopt healthy habits. as he has previously said. What this means is that the way people act, even when they're being submissive, is a reflection of the information they possess. The efficacy of leprosy therapy depends on patients receiving accurate information on the disease's transmission, treatment objectives, medicine side effects, phases of treatment, and potential complications. A person's actions, goals, and choices are shaped by the information he possesses. Treatment efficacy is highly dependent on patient education on leprosy. Reason being, patients often don't follow treatment plans to become well, which is due to their lack of understanding. Possessing accurate information can empower one to respond to things in a variety of ways, including taking them in, processing them, valuing them, sharing them with others, and even influencing or encouraging others to do the same. Reason being, patients often don't follow treatment plans to become well, which is due to their lack of understanding. Possessing accurate information can empower one to respond to things in a variety of ways, including taking them in, processing them, valuing them, sharing them with others, and even influencing or encouraging others to do the same. Reason being, patients often don't follow treatment plans to become well, which is due to their lack of understanding. Possessing accurate information can empower one to respond to things in a variety of ways, including taking them in, processing them, valuing them, sharing them with others, and even influencing or encouraging others to do the same.

CONCLUSION

The following inferences may be drawn from this (1) There was a wide range of findings regarding the amount of knowledge held by leprosy victims throughout the five articles. While article 2 usually had a high degree of knowledge, article 1 had a moderate level. Article 3 provides solid dominant knowledge, article 4 provides adequate dominant knowledge, and article 5 does not provide any dominant knowledge at all. (2) Of the five articles examined, four (articles 1, 2, 3, and 5) demonstrated dominant results of adherence regarding leprosy patients' treatment compliance. While (3) the information included in the five articles is adequate on its own, the correlation between knowledge and leprosy treatment adherence is much stronger. The greater the level of information that lepers possess, the more compliant they will be in regards to leprosy treatment. Research on the relationship between knowledge level and compliance with leprosy treatment is poised to make significant contributions across both theoretical and practical domains. Theoretically, this research enriches behavioral health models by elucidating how knowledge levels influence patient compliance, thereby advancing theories such as the Health Belief Model and Social Cognitive Theory. It also provides insights into the cognitive processes shaping patient decision-making regarding treatment adherence, expanding understanding of patient empowerment in healthcare decisions. Moreover, the study validates educational strategies in healthcare, underscoring their role in improving health outcomes through enhanced patient knowledge. Practically, the findings can inform the development of targeted educational programs tailored to leprosy patients, identifying critical knowledge gaps essential for effective treatment compliance. By pinpointing factors that hinder adherence and proposing strategies to promote it, the research supports improved treatment outcomes, reduces disease transmission rates, and prevents associated disabilities. Policy recommendations derived from these insights can enhance healthcare delivery by fostering supportive environments for patient education and adherence. Furthermore, the research contributes to global health initiatives by emphasizing the importance of patient education in combating leprosy, aligning with Sustainable Development Goal 3 (Good Health and Well-being). Addressing knowledge deficits also plays a crucial role in reducing stigma surrounding leprosy, thereby promoting social inclusion and enhancing overall quality of life for

affected individuals. Economically, improved treatment adherence can yield cost savings by minimizing the need for extended treatment courses and averting complications requiring additional medical resources. The limitation of this literature just sufferers from 5 article. Future works can have more literature showed various results. Limitations in research on the relationship between knowledge level and compliance with leprosy treatment include its predominantly cross-sectional nature, which restricts establishing causal relationships between knowledge and adherence. Reliance on self-reported data introduces biases like social desirability or recall bias. Findings may not generalize across diverse populations due to varying healthcare access, cultural beliefs, and socio-economic factors. Moreover, compliance with leprosy treatment is influenced by multifaceted factors beyond knowledge, such as socio-economic status, stigma, and healthcare system nuances, which may not be fully captured in studies focusing solely on knowledge levels. Variability in measurement tools further complicates comparisons across studies. Future research could benefit from longitudinal studies to track changes in knowledge and adherence over time, validating causal relationships. Utilizing mixed-methods approaches integrating qualitative insights could provide a deeper understanding of factors influencing adherence. Intervention studies are needed to design and evaluate educational programs that enhance knowledge and improve treatment adherence. Including diverse populations and developing standardized measurement tools would enhance generalizability and comparability of findings. Investigating health system factors and exploring digital health interventions could further optimize strategies for improving treatment outcomes and disease management. Addressing these aspects will advance our understanding and contribute to more effective interventions in leprosy treatment compliance.

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