

The Effect of Leaflet Education and WhatsApp Group Discussion on Patient Knowledge in the Management of Scabies at Lumajang Islamic Hospital

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ABSTRACT

Introduction: Education is one of the key components in the management of scabies, particularly in improving patients' knowledge and attitudes toward prevention and treatment. This study aims to determine the difference in the effectiveness of educational methods using leaflets and WhatsApp group discussions on patients' knowledge regarding scabies management.

Method: This study employed a quasi-experimental design with a pretest-posttest approach, and the sample was selected using accidental sampling. The study sample consisted of 36 scabies patients who visited the dermatology clinic at Lumajang Islamic Hospital.

Result: The results of the study show that before the intervention, the majority of respondents had adequate knowledge (77.8%) and only 11.1% had good knowledge. After the intervention, the proportion of respondents with good knowledge increased to 33.3%, those with adequate knowledge to 66.7%, and none had insufficient knowledge. Meanwhile, education via WhatsApp group discussions showed a more significant improvement. Before the intervention, 77.8% of respondents had adequate knowledge and 11.1% had good knowledge. After the education, the proportion with good knowledge rose to 72.2%, adequate knowledge to 27.8%, and none had insufficient knowledge. Analysis using the Wilcoxon test showed significant results for both methods (flyers: $Z = -2.121$; $p = 0.034$ and WhatsApp: $Z = -3.606$; $p = 0.000$).

Conclusion: Both methods have distinct characteristics and approaches to conveying information to patients. Leaflets rely on passive information delivery through reading, whereas WhatsApp group discussions are interactive and facilitate direct, two-way communication.

Keywords: Health Education; Scabies; WhatsApp Group; Leaflet; Knowledge of Patients

Introduction

Scabies is a skin disease caused by an infestation with *Sarcoptes scabiei* var. *hominis*. This disease is a public health problem in many countries, including Indonesia, due to its high prevalence, particularly in environments with poor sanitation and high population density (WHO, 2022). Ineffective treatment of scabies can lead to complications, such as secondary bacterial infections, sleep disturbances due to severe itching, and a reduced quality of life for those affected. Scabies is one of the infectious skin diseases that has become a public health problem in many countries, including Indonesia. This disease is primarily found in environments with poor sanitation and high population density, which are the main factors in the spread of the mites that cause this disease. This situation underscores the importance of effective management to prevent further adverse impacts on the quality of life of the population (Hayati et al., 2021)

According to a report by the World Health Organization (WHO), the global prevalence of scabies reached approximately 200 million cases in 2022. This figure indicates that scabies remains a significant health issue, particularly in developing countries with limited access to healthcare services (WHO, 2022). In Indonesia, research findings indicate that the prevalence of scabies ranges from 5% to 15% in densely populated settings, such as dormitories, Islamic boarding schools, and prisons, with the highest incidence observed among adolescents and children (Nasruddin et al., 2020). The high prevalence of scabies in Indonesia is attributed to a lack of education regarding the prevention and management of this disease. Additionally, limited access to digital health information poses a challenge in improving public knowledge. According to data from the Central Statistics Agency (BPS) in 2021, only about 70% of households in Indonesia have internet access, making conventional educational methods such as leaflets still relevant for use. However, the use of digital platforms like WhatsApp is on the rise, particularly among adolescents and young adults, opening opportunities to integrate technology-based education. To date, scabies cases in Indonesia, according to data from the Indonesian Ministry of Health, have reached 261.6 million, with a prevalence of 4.60% to 12.95%, making scabies the third most common skin disease affecting the Indonesian population. Meanwhile, the number of scabies patients in East Java has reached 72,500, with a prevalence of 0.2%. Based on

data obtained from Lumajang Islamic Hospital, the prevalence of scabies cases over the past three months has shown a significant increase. In October, there were 6 reported cases of scabies. This number remained consistent in November with 6 cases. However, there was an increase in December, when the number of cases reached 8.

The primary issue contributing to the high incidence of scabies is the public's lack of understanding regarding the risk factors and modes of transmission of this disease. The majority of patients are unaware of the importance of maintaining personal and environmental hygiene, and they often fail to adhere to the treatment prescribed by healthcare providers (Mutia et al., 2021). This situation is exacerbated by the social stigma surrounding scabies sufferers, who are often perceived as having the disease due to poor personal hygiene, leading patients to hide their condition and avoid seeking treatment. Additionally, limited resources and access to healthcare services, particularly in remote areas, also contribute to the high incidence of scabies. The ineffectiveness of health education efforts to date is one of the factors exacerbating this problem. Education is often not conducted systematically and lacks a targeted approach, thus failing to optimally raise public awareness (Karimah & Zara, 2024). To resolve this issue, a more effective educational approach tailored to the characteristics of the target population is needed. The use of leaflets as an educational medium has proven effective in increasing public knowledge about various diseases, including scabies (Devlin, 2023). However, this method has limitations in terms of interaction and in-depth discussion. In contrast, WhatsApp group discussions offer advantages in terms of two-way communication and flexibility in timing, thereby enabling a deeper understanding among patients (Devlin, 2023).

Therefore, patient education regarding scabies management is a critical aspect in reducing the incidence and complications of this disease. Education is a key component in scabies control, particularly in improving patients' knowledge and attitudes toward prevention and treatment. Various educational methods have been implemented, such as the use of print media and digital platforms. However, the effectiveness of these methods in changing patient behavior has not been extensively studied, especially among populations in endemic regions (Kurniawan et al., 2020). It is important to conduct research comparing educational methods using leaflets and WhatsApp group

discussions to improve patients' knowledge and attitudes toward scabies management. The increase in the number of cases underscores the need for more effective health education to prevent the spread of scabies in the community. As a hospital serving diverse segments of the community, Lumajang Islamic Hospital faces challenges in providing information and education to patients, particularly regarding the prevention and management of scabies (Setyorini & Lutfah, 2022).

Based on this phenomenon, the researchers were interested in further examining the effect of educational methods using leaflets and WhatsApp group discussions on patients' knowledge regarding scabies management at Lumajang Islamic Hospital.

Method

The study used a quasi-experimental design with a pretest-posttest approach. The population used as the study subjects consisted of all scabies patients who visited the dermatology clinic at the Islamic Hospital between November 2024 and January 2025, totaling 40 respondents. The sample in this study consisted of 36 scabies patients who underwent examination at the dermatology clinic of the Islamic Hospital. The sample was divided into 18 respondents in the leaflet group and 18 in the WhatsApp group. The sampling technique used in this study was non-probability sampling with accidental sampling.

Results

The study results showed data on the characteristics of the respondents. The general data presented included age, education, and employment. The specific data in this study focused on identifying patients' knowledge levels regarding scabies management before and after receiving education via leaflets at Lumajang Islamic Hospital, identifying patients' knowledge levels regarding scabies management before and after receiving education via WhatsApp group discussions at Lumajang Islamic Hospital; and analyzing the effect of educational methods using leaflets and WhatsApp group discussions on patients' knowledge regarding scabies management at Lumajang Islamic Hospital.

1. General Data

Table 1.1 Frequency distribution of respondents' ages at Lumajang Islamic Hospital

Age	Group F	Leaflet %	Group F	WhatsApp group %
18-25 years	11	61,1	12	66,7
26-35 years	5	27,8	4	22,2
>35 years	2	11,1	2	11,1
Total	18	100,0	18	100,0

Source: 2025 frequency data

Table 1.1 shows that the majority of respondents at Lumajang Islamic Hospital were aged 18–25, with 11 respondents (61%) in the leaflet-based education group. Similarly, the majority of respondents at Lumajang Islamic Hospital were aged 18–25, with 12 respondents (66.7%) in the WhatsApp group discussion-based education group.

Table 1.2 Frequency distribution of respondents' level of education at Lumajang Islamic Hospital

Level of Education	Group F	Leaflet %	Group F	WhatsApp group %
Junior High School	11	61,1	13	72,2
Senior High School	7	38,9	5	27,8
Total	18	100,0	18	100,0

Source: 2025 frequency data

Table 1.2 shows that the majority of respondents at Lumajang Islamic Hospital had a junior high school education, with 11 respondents (61%) in the leaflet-based education group. Similarly, the majority of respondents at Lumajang Islamic Hospital had a junior high school education, with 13 respondents (72.2%) in the WhatsApp group discussion-based education group.

Table 1.3 Frequency distribution of respondents' employment at Lumajang Islamic Hospital

Employment	Group F	Leaflet %	Group F	WhatsApp group %
unemployed	11	61,1	12	66,7
employee	6	33,3	3	16,7
Entrepreneur	1	5,6	3	16,7
Total	18	100,0	18	100,0

Source: 2025 frequency data

Table 1.3 shows that the majority of respondents at Lumajang Islamic Hospital 11 respondents (61%) did not participate in the leaflet-based education group.

Similarly, the majority of respondents at Lumajang Islamic Hospital 12 respondents (66.7%) did not participate in the WhatsApp group discussion-based education group.

Table 1.4 Frequency distribution of respondents' gender at Lumajang Islamic Hospital

Gender	Group F	Leaflet %	Group F	WhatsApp group %
Male	9	50,0	8	44,4
Female	9	50,0	10	55,6
Total	18	100,0	18	100,0

Table 1.4 shows that half of the respondents at Lumajang Islamic Hospital were male and female, with 9 respondents (50%) each in the leaflet-based education group. Meanwhile, the majority of respondents at Lumajang Islamic Hospital were female, with 10 respondents (55.6%) in the WhatsApp group discussion-based education group.

2. Specific Data

The specific objective of this study was to identify patients' level of knowledge regarding scabies management before and after receiving education via leaflets at Lumajang Islamic Hospital, to identify patients' knowledge levels regarding scabies management before and after receiving education via a WhatsApp group discussion at Lumajang Islamic Hospital, and to analyze the effect of educational methods using leaflets and WhatsApp group discussions on patients' knowledge regarding scabies management at Lumajang Islamic Hospital.

Table 2.1 Frequency distribution of pre-respondents' knowledge at Lumajang Islamic Hospital

Knowledge (Pre Test)	Group F	Leaflet %	Group F	WhatsApp group %
Good	2	61,1	12	66,7
Fair	14	33,3	3	16,7
Less	2	5,6	3	16,7
Total	18	100,0	18	100,0

Source: 2025 frequency data

Table 2.1 shows that the majority of respondents at Lumajang Islamic Hospital 14 respondents (77.8%) had adequate knowledge in the leaflet-based education group. Similarly, the majority of respondents at Lumajang Islamic Hospital 14

respondents (77.8%) had adequate knowledge in the WhatsApp group discussion-based education group prior to receiving the education.

Table 2.2 Frequency distribution of respondents' knowledge post-intervention at Lumajang Islamic Hospital

Knowledge (Post Test)	Group F	Leaflet %	Group F	WhatsApp group %
Good	6	33,3	13	72,2
Fair	12	66,7	5	16,7
Total	18	100,0	18	100,0

Source: 2025 frequency data

Table 2.2 shows that the majority of respondents at Lumajang Islamic Hospital had adequate knowledge (12 respondents, or 66.7%) in the leaflet-based education group. Additionally, the majority of respondents at Lumajang Islamic Hospital had good knowledge (13 respondents, or 72.2%) in the WhatsApp group discussion-based education group after receiving education.

Table 2.3 Identify The Level Of Patients' Knowledge Regarding Scabies Management Before and After Receiving Education Using a Leaflet at Lumajang Islamic Hospital

Knowledge (Pre)	Group Knowledge Leaflet (Post)		Total
	Good	Fair	
Good	1 5,6%	1 5,6%	2 11,1%
Fair	5 27,8%	9 50,0%	14 77,8%
Less	0 0,0%	2 11,1%	2 11,1%
Total	6 33,3%	12 66,7%	18 100,0%

Source: 2025 frequency data

Based on the research results presented in Table 2.3, it was found that there was an increase in patients' knowledge levels regarding scabies management after receiving education via leaflets at Lumajang Islamic Hospital. Before receiving education, the majority of respondents fell into the "adequate knowledge" category (77.8%), while only 11.1% had "good knowledge" and 11.1% had "insufficient knowledge." Following the educational intervention with the leaflet, a significant

improvement was observed: the proportion of patients with good knowledge increased to 33.3%, and those with adequate knowledge rose to 66.7%, while no patients remained in the insufficient knowledge category.

Table 2.4 Identify The Level Of Patients’ Knowledge Regarding Scabies Management Before And After Receiving Education via a WhatsApp group discussion at Lumajang Islamic Hospital

Knowledge (Pre)	Group Knowledge		Total
	Leaflet (Post)		
	Good	Fair	
Good	2 11,1%	0 0,0%	2 11,1%
Fair	11 61,1%	3 16,7%	14 77,8%
Less	0 0,0%	2 11,1%	2 11,1%
Total	13 72,2%	5 27,8%	18 100,0%

Source: 2025 frequency data

Based on Table 2.4, it can be seen that there was a significant increase in patients’ knowledge levels regarding scabies management after receiving education through WhatsApp group discussions at Lumajang Islamic Hospital. Before the intervention, the majority of patients fell into the “adequate” knowledge category (77.8%), and only 11.1% had “good” knowledge. After the education, there was a quite striking increase, with 72.2% of respondents reaching the good knowledge category and only 27.8% remaining in the adequate category. There were no longer any respondents in the poor knowledge category.

Table 2.5 The Effect of Educational Methods Using Leaflets and WhatsApp Group Discussions on Patients’ Knowledge of Scabies Management at Lumajang Islamic Hospital

	<i>Uji Wilcoxon Test</i>	
	Leaflet	WhatsApp Group Discussion
Z	-2,121 ^b	-3,606 ^b
Asymp. Sig. (2-tailed)	,034	,000

Source: 2025 frequency data

The results of the Wilcoxon statistical test showed a Z-value of -2.121 with a significance level (Asymp. Sig. 2-tailed) of 0.034 ($p < 0.05$), indicating that there was a significant difference between knowledge levels before and after education

using the leaflet. Thus, education via leaflets proved effective in improving patients' knowledge regarding scabies management. The results of the statistical test using the Wilcoxon test showed a Z-value of -3.606 with a significance level (Asymp. Sig. 2-tailed) of 0.000 ($p < 0.05$), indicating that there is a highly significant difference between knowledge levels before and after the educational intervention via WhatsApp group discussions. Thus, it can be concluded that the educational method using WhatsApp group discussions is highly effective in improving patients' knowledge regarding scabies management.

Discussion

The study showed that patients' knowledge of scabies management improved after receiving education via leaflets at Lumajang Islamic Hospital. Before the education, most respondents fell into the "adequate knowledge" category (77.8%), while only 11.1% had "good knowledge" and 11.1% had inadequate knowledge. Following the educational intervention with the leaflet, a significant improvement was observed: the proportion of patients with good knowledge increased to 33.3%, and those with adequate knowledge rose to 66.7%, while no patients remained in the insufficient knowledge category.

A pre- and post-test assessment of patients' knowledge regarding scabies management before and after receiving education via a WhatsApp group discussion at Lumajang Islamic Hospital revealed a significant increase in patients' knowledge of scabies management following the educational intervention. Prior to the intervention, the majority of patients fell into the "adequate" knowledge category (77.8%), and only 11.1% demonstrated "good" knowledge. After the education session, there was a notable improvement, with 72.2% of respondents achieving the "good" knowledge category and only 27.8% remaining in the 'adequate' category. No respondents were in the inadequate knowledge category.

Before receiving education via the WhatsApp group discussion, the majority of patients demonstrated low levels of knowledge regarding scabies management. Many of them did not clearly understand the causes of this disease, its modes of transmission, clinical signs and symptoms, as well as prevention and treatment efforts. Limited access

to valid health information, low awareness of the importance of personal and environmental hygiene, and the absence of ongoing education were the main causes of patients' low knowledge in this regard (Karimah & Zara, 2024).

Following the implementation of education via WhatsApp group discussions, there was a significant increase in patients' knowledge. This method proved to be quite effective because it facilitated two-way communication, allowing participants to ask questions directly to healthcare providers, share experiences, and seek clarification on matters they did not fully understand. Discussions in this group also took place flexibly since they could be accessed at any time, meaning patients were not limited by time or location when receiving education (Devlin, 2023).

The use of WhatsApp as an educational medium is considered efficient because most patients are already familiar with the app. Health education is delivered in the form of text, images, short videos, and voice notes to cater to various learning styles. The interactions fostered within the group make patients feel more engaged and motivated to pay attention to the material. Additionally, the more relaxed atmosphere in the discussions encourages active participation without any sense of awkwardness (Setyorini & Lutfah, 2022).

However, there are several challenges in implementing education through WhatsApp group discussions. Some participants are less active in following the discussions due to busy schedules, limited internet data, or being unaccustomed to expressing their opinions in a group. This can affect the consistency of understanding among members.

Based on the results of the educational program, the researchers concluded that WhatsApp group discussions are an effective method for improving patients' knowledge of scabies management, particularly because they allow for direct interaction and flexible delivery of educational materials. To maximize the educational outcomes, it is recommended that discussions be conducted in a structured manner, with an active moderator, varied content, and periodic assessments of understanding. Additionally, it is important to support less active participants to encourage greater engagement, thereby ensuring equitable knowledge distribution within the group.

The results of the analysis on the Effect of Educational Methods Using Leaflets and WhatsApp Group Discussions on Patients' Knowledge Regarding Scabies Management at Lumajang Islamic Hospital, as indicated by the Wilcoxon statistical test, showed a Z-value of -2.121 with a significance level (Asymp. Sig. 2-tailed) of 0.034 ($p < 0.05$), indicating that there is a significant difference between knowledge levels before and after education using leaflets was provided. The results indicate that education via leaflets is effective in improving patients' knowledge of scabies management.

Statistical analysis using the Wilcoxon test yielded a Z-value of -3.606 with a significance level (Asymp. Sig. 2-tailed) of 0.000 ($p < 0.05$), indicating a highly significant difference between knowledge levels before and after the educational intervention via WhatsApp group discussions. Thus, it can be concluded that the educational method using WhatsApp group discussions is highly effective in improving patients' knowledge regarding scabies management.

This indicates that there is a meaningful difference between the two educational methods in influencing patients' knowledge. Thus, it can be concluded that education via WhatsApp group discussions is more effective than leaflets in improving patients' knowledge regarding scabies management.

Health education is a key strategy for improving patients' knowledge and behavior, including in the management of scabies. In this study, the two educational methods used were print media in the form of leaflets and WhatsApp group-based discussions. Both have distinct characteristics and approaches in conveying information to patients. Leaflets depend on passive information delivery through reading, whereas WhatsApp group discussions are interactive and allow for direct two-way communication (Krizdiana, 2023). The results show that education using the WhatsApp group discussion method is more effective than leaflets in improving patient knowledge. This is evident from the higher knowledge scores in the discussion group compared to the leaflet group. The main advantage of WhatsApp group discussions is the two-way communication that allows patients to ask questions, discuss, and receive more detailed and real-time explanations from healthcare providers, compared to simply reading the written information available in leaflets (Natalia, 2020).

Additionally, WhatsApp group discussions create a collaborative learning environment. Patients can share experiences with one another, provide mutual emotional support, and form an active learning community. Interactions within the group also help patients feel more engaged and accountable in understanding the educational material. Meanwhile, with the leaflet method, patients tend to learn individually and do not have the opportunity for immediate clarification if there is information they do not understand (Siti Riptifah, 2019).

The WhatsApp group also excels in terms of flexibility because it can be accessed anytime and anywhere, allowing patients to participate in educational sessions without having to be physically present or view the materials simultaneously. Educational materials can be delivered in a variety of formats ranging from text, images, and educational videos to voice notes tailored to participants' learning preferences. In contrast, leaflets only present information in a static format, which tends to be less engaging without guidance (Marwan, 2022).

Nevertheless, both methods have their own strengths and limitations. Leaflets remain useful as a supplementary tool and a written information reminder that can be saved and reviewed later. However, their effectiveness heavily depends on patients' reading interest. WhatsApp group discussions require an internet connection and active commitment from both participants and facilitators. With adequate support, this discussion method can foster deeper understanding and more tangible behavioral changes (Gumilang & Farakhin, 2022). The researchers assumed that education using WhatsApp group discussions proved more effective than leaflets in improving patients' knowledge about scabies management. This method provides opportunities for interaction, clarification, and active engagement, which contribute to enhancing participants' understanding. It is recommended that healthcare workers integrate this interactive discussion method into community education programs, particularly in settings where digital media can be utilized, and combine it with print materials such as leaflets to reinforce the information.

Conclusion

Health education is a key strategy for improving patients' knowledge and behavior, including in the management of scabies. In this study, two educational methods were used: printed materials in the form of leaflets and WhatsApp group discussions. Both methods have distinct characteristics and approaches to conveying information to patients. Leaflets rely on passive information delivery through reading, whereas WhatsApp group discussions are interactive and facilitate direct, two-way communication. Based on the results of the education program, the researchers concluded that WhatsApp group discussions are an effective method for improving patients' knowledge regarding scabies management, particularly because they facilitate direct interaction and flexible delivery of materials.

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