Psoriasis is a chronic inflammatory skin disease, which can affect all ages characterized by reddish plaques that are covered by thick scales of silvery white and firmly bounded. In general, psoriasis lesions are distributed symmetrically with predilection especially in the elbow and knee, scalp, lumbosacral, buttocks, and genitalia [1,16-18].

Psoriasis can interfere with the quality of life of patients this is because the treatment often does not provide a satisfactory outcome, resulting in social and economic burden. Various studies over the past few decades have added to the knowledge of the pathogenesis of psoriasis, with the ultimate goal of getting more effective therapy or healing, but to date, the exact cause is still unknown [2].

Consensus by the American Academy of Dermatology states that any determination of the severity of psoriasis requires special attention and its effect on the quality of life of the sufferer [3]. One technique used to measure the severity of psoriasis is using the psoriasis area and severity index [4]. Although susceptibility genes have been identified, there is still no satisfactory treatment [5]. The treatment can be done still limited to physical treatment, not mental recovery [6].

Psoriasis which is a skin disorder characterized by hyperploration and inflammation of the epidermis with a clinical picture of erythematous plaque and layered plaque, which is chronic. Psoriasis can affects 2.5% of the world's population, about 20–30% suffer from moderate to severe psoriasis [7]. Until now the exact cause of psoriasis is still debated, but some of the factors reported to worsen the condition of psoriasis include physical trauma, infection, stress, seasonal, and climatic changes, certain drugs, including lithium salts, beta blockers, and chloroquine antimalarials [8]. Similarly, alcohol consumption, smoking, and obesity may aggravate psoriasis or complicate the management of psoriasis [9].

Based on medical record data of Haji Adam Malik General Hospital Medan, Indonesia, showed the increasing trend of psoriasis cases, especially in the period 2013–2015. Data, in 2013, diagnosed with psoriasis patients 47 new patients and 31 recurrent patients, then in 2014 increased new patient with psoriasis, 56 new patients, and 27 recurrent patients. The re-increment occurred in the period 2015 with 69 new patients and 20 recurrent patients (Medical record data of Haji Adam Malik General Hospital). Based on medical record data above can be concluded that the decreased number of patients who do follow-up every year against psoriasis disease while the new case of the trend to increase.

Research on the quality of life of psoriasis patients has also been the concern of some previous researchers, including research on the quality of life of psoriasis patients in the Osmanabad region, India. The results showed that the quality of life was low and very disturbing in life compared to other healthy individuals [10]. Another study examined the quality of life in patients with psoriasis in tertiary care hospitals concluded that psoriasis is a chronic recurrent disease and has a significant negative impact to the quality of life of the patient [11].

The common thing that is often found in people with psoriasis is despair of the disease because it cannot be cured so that sometimes occur psychological disorders and decreased the quality of life. Breaking expectations have an impact on mental health and quality of life so that it unknowingly affects the emergence of various other health problems. Psoriasis indirectly causes death, but the effects of discom forand length of the healing process have a serious impact on quality of life. Based on this phenomenon, researchers intend to know the implementation...
of the most effective health promotion model in support of efforts to improve the quality of life of patients with psoriasis.

In harmony with the impact of psoriasis on quality of life, the researchers gave the idea that it is necessary to approach health promotion in the form of health education so that various physical and mental impacts can be minimized. This idea is encouraged because as far as the researcher’s observation the attention of the treatment is still limited to pay attention to physical impact regardless of mental state. Although psoriasis generally does not cause death give a very great impact to quality of life of the sufferer, hence need to be done effort to improve quality of life through health promotion approach in the form of empowerment and health education.

METHODS
Study design using an experimental model with quasi-experimental type with Non-Equivalent Control Group design aimed to know the effort to improve the quality of life of psoriasis disease using health promotion method at Haji Adam Malik General Hospital Medan. Sample recruitment using consecutive sampling method from patient recorded in the medical record of Haji Adam Malik General Hospital.

The inclusion criteria are patient with a diagnosis of psoriasis, willing to follow the stages of research, age above 18 years old. The exclusion criteria in this research are respondents who did not willing to participate in the research stages. Quality of life assessment is done using the dermatology life quality index (DLQI), giving education is divided into three methods such as use lectures, booklets, and social media. Group receiving intervention was divided using the simple random method, and then made a comparison between the change of quality of life before and after the intervention. Statistical analysis used is normality test to find out data distribution and paired sample t-test to compare the quality of life before and after the intervention.

RESULTS
This study used 60 psoriasis patients who were divided into three groups equally, namely group lectures, booklet groups, and social media groups. Subject characteristics are shown in Table 1.

Based on Table 1, the age group of patients with psoriasis was the most in the range of 35–40 years, women tend to be more affected by psoriasis which is 35 people (58.3%), and the majority of research subjects have senior education in high school as many as 42 people (70%).

A description of the quality of life before and after the intervention can be shown in Tables 2 and 3.

In Table 2, it was found that the quality of life of the majority of respondents was disrupted, namely for the lecture group as much as 16 respondents (80%), for Booklet group as many as 15 respondents (75%), and for social media group as many as 11 respondents (55%). The result of the research on psoriasis patient after getting health promotion got DLQI with an average degree of disturbance of quality of life is 28.52 (slightly disturbed).

In Table 3, it is found that the quality of life of the respondents after getting the health promotion of the majority is slightly disturbed for the lecture group as much as 11 respondents (55%) and uninterrupted 6 respondents (30%), for booklet group as many as 12 respondents (60%), and group social media as much as 16 respondents (80%).

Normality test
Normality test is a requirement that must be fulfilled using t-test. The test of normality aims to find out whether the data used is normally distributed using Kolmogorov–Smirnov test. Based on the normality test on the variable of quality of life with lecture method, booklet, and social media, it is obtained that some normally distributed variables with p>0.05 (Table 4).

Influence of media model lecture on the quality of life of psoriasis patients
Because the data is normally distributed so that paired sample t-test is used to compare the quality of life in conditions before and after intervention.

The result of calculation influence of lecture media model to the quality of life, behavior, and stress degree of psoriasis patient is shown in Table 5. Based on Table 5, there was an improvement in DLQI score after lecture media model intervention from 22.80 (disrupted) to 30.55 (slightly disrupted). The result of paired t-test is obtained p<0.001 which means there is difference in dermatology quality of life index of person living with psoriasis before and after get health promotion with lecture method. This

### Table 1: Subject characteristics

| Characteristics         | Frequency (%) |
|-------------------------|---------------|
| Age (years)             |               |
| <35                     | 22 (36.67)    |
| 35–40                   | 24 (40)       |
| 40–45                   | 14 (23.33)    |
| Gender                  |               |
| Male                    | 25 (41.67)    |
| Female                  | 35 (58.33)    |
| Educational level       |               |
| Junior high school      | 10 (16.67)    |
| Senior high school      | 42 (70)       |
| Higher education        | 8 (13.33)     |

### Table 2: DLQI before health promotion

| Health promotion type          | Quality of life | Frequency (%) |
|--------------------------------|----------------|---------------|
| Before health promotion        |                |               |
| (lectures method)              | Not disturbed  | 0 (0)         |
|                                | Slight disturbed| 4 (20)        |
|                                | Moderately disturbed| 16 (80)     |
|                                | Very disturbed  | 0 (0)         |
|                                | Total          | 20 (100)      |
| Before health promotion        |                |               |
| (booklet method)               | Not disturbed  | 0 (0)         |
|                                | Slight disturbed| 2 (10)        |
|                                | Moderately disturbed| 15 (75)    |
|                                | Very disturbed  | 3 (15)        |
|                                | Total          | 20 (100)      |
| Before health promotion        |                |               |
| (social media method)          | Not disturbed  | 0 (0)         |
|                                | Slight disturbed| 2 (10)        |
|                                | Moderately disturbed| 11 (55)    |
|                                | Very disturbed  | 7 (35)        |
|                                | Total          | 20 (100)      |

DLQI: Dermatology life quality index

### Table 3: DLQI after health promotion

| Health promotion type          | Quality of life | Frequency (%) |
|--------------------------------|----------------|---------------|
| Before health promotion        |                |               |
| (lectures method)              | Not disturbed  | 6 (30)        |
|                                | Slight disturbed| 11 (55)       |
|                                | Moderately disturbed| 3 (15)    |
|                                | Very disturbed  | 0 (0)         |
|                                | Total          | 20 (100)      |
| Before health promotion        |                |               |
| (lectures method)              | Not disturbed  | 0 (0)         |
|                                | Slight disturbed| 12 (60)       |
|                                | Moderately disturbed| 8 (4)    |
|                                | Very disturbed  | 0 (0)         |
|                                | Total          | 20 (100)      |
| Before health promotion        |                |               |
| (lectures method)              | Not disturbed  | 0 (0)         |
|                                | Slight disturbed| 16 (80)       |
|                                | Moderately disturbed| 3 (15)    |
|                                | Very disturbed  | 1 (5)         |
|                                | Total          | 20 (100)      |

DLQI: Dermatology life quality index
Influence of media model lecture on the quality of life of psoriasis patients

| Variable            | Mean±SD       | p-value |
|---------------------|---------------|---------|
| Life quality DLQI   |               |         |
| Before intervention | 22.80±3.65   | <0.001**|
| After intervention  | 30.55±4.04   |         |
| Life quality        |               |         |
| Before intervention | 59.60±5.98   | <0.001**|
| After intervention  | 81.15±7.63   |         |

**Significant. DLQI: Dermatology life quality index, SD: Standard deviation

Table 5: Influence of media model lecture on the quality of life of psoriasis patients

Influence of media booklet model on quality of life of psoriasis patients

| Variable            | Mean±SD       | p-value |
|---------------------|---------------|---------|
| Life quality DLQI   |               |         |
| Before intervention | 20.60±3.23   | <0.001**|
| After intervention  | 26.95±3.70   |         |
| Life quality        |               |         |
| Before intervention | 61.10±4.86   | <0.001**|
| After intervention  | 74.40±8.70   |         |

**Significant. DLQI: Dermatology life quality index, SD: Standard deviation

Table 6: Influence of media booklet model on quality of life of psoriasis patients

Influence of social media model on quality of life, behavior, and degree of stress of psoriasis patients

| Variable            | Mean±SD       | p-value |
|---------------------|---------------|---------|
| Life quality DLQI   |               |         |
| Before intervention | 18.75±3.58   | <0.001**|
| After intervention  | 28.05±4.80   |         |
| Life quality        |               |         |
| Before intervention | 62.65±5.08   | <0.001**|
| After intervention  | 74.95±6.09   |         |

**Significant. DLQI: Dermatology life quality index, SD: Standard deviation

Table 7: Influence of social media model on quality of life, behavior, and degree of stress of psoriasis patients

The average value of quality of life before given method of the booklet is 61.10 (moderate) and after given booklet there is an increase that is 74.40 (Good). The result of paired t-test is obtained p<0.001 which means there is difference of dermatology quality of life index of person living with psoriasis before and after get health promotion by booklet method. This means that there is a significant influence model of booklet media on the dermatology quality of life index of people living with psoriasis.

In Table 6, the mean value of the dermatology quality of life index was given before booklet method 20.60 (disturbed) and after the booklet method was given an increase of 26.95 (slightly disturbed). The result of paired t-test is obtained p<0.001 which means there is difference of dermatology quality of life index of person living with psoriasis before and after get health promotion by booklet method. This means that there is a significant effect of media booklet model on the dermatology quality of life index of people living with psoriasis.

The average value of quality of life before given method of the social media is 62.65 (mediocre) and after being given a booklet an increase of 74.95 (Good). The results of paired t-test test results obtained p<0.001 which means there are differences in quality of life of psoriasis patients before and after getting health promotion by social methods. This means that there is a significant effect of social media model on the dermatology quality of life index of psoriasis patients.

In Table 7, the mean value of the dermatology quality of life index was given before the 18.75 (disrupted) booklet method and after the social method was given an increase of 28.05 (slightly disturbed). The result of paired t-test is obtained p<0.001 which means there is difference of dermatology quality of life index of psoriasis sufferer before and after get health promotion with the social method. This means that there is a significant influence model of social media model on the dermatology quality of life index of psoriasis patients.

The average value of quality of life before given the social media that is 62.65 (mediocre) and after being given a booklet an increase of 74.95 (Good). The results of paired t-test test results obtained p<0.001 which means there are differences in quality of life of psoriasis patients before and after getting health promotion by social methods. This means that there is a significant effect of social media model on the dermatology quality of life index of psoriasis patients.


### Table 8: Comparison of health promotion model for quality of life improvement in psoriasis patient

| Variable          | Mean±SD | F     | p-value |
|-------------------|---------|-------|---------|
| Life quality DLQI |         |       |         |
| Lecturer method   | 30.55±4.04 | 3.838 | 0.027*  |
| Booklet method    | 26.95±3.70 |       |         |
| Social media method | 28.05±4.80 |       |         |
| Life quality      |         |       |         |
| Lecturer method   | 81.15±7.63 | 4.922 | 0.011*  |
| Booklet method    | 74.40±8.78 |       |         |
| Social media method | 74.95±6.09 |       |         |

*Significant, DLQI: Dermatology life quality index

the DLQI sufferers of psoriasis after being given health promotion with media model lecture is better than the media booklet and social media. Where the average DLQI of psoriasis patients after being given health promotion with media lecture model is 30.55 higher than media booklet 26.95 and social media 28.05.

The improved quality of life can be explained that there are differences in the quality of life of psoriasis patients who are given health promotion with lecture media, booklet media, and social media with a value of F is 4.922 with p=0.011 (p<0.05). It is seen from the average value can be explained that the quality of life of psoriasis patients after being given health promotion with media model lecture is better than the media booklet and social media. Where the average quality of life of psoriasis patients after being given health promotion with media lecture model is equal to 81.15 higher than media booklet 74.40 and social media 74.95 (Table 8).

### DISCUSSION

Psoriasis is a stress-related disease; there is a close relationship between psoriasis and stress, which causes various clinical consequences. This suggests that psoriasis can be triggered by stress, leading to an increase in disease severity and a less than satisfactory outcome of therapy. A study conducted by Yang and Yang on the quality of life of psoriasis patients in Taiwan, which compares the quality of life of patients with psoriasis and other skin diseases. Patients with psoriasis tend to have a high level of stress and anxiety. Also regarding the social function of patients with psoriasis tend to have difficulty to interact with others, the fear to meet others, and difficulty to interact in work. Overall, it makes patients with psoriasis have a much lower quality of life compared to other skin diseases [11]. Another study by Garcia et al., who evaluated the quality of life in patients with psoriasis in Spain. The study found mean DLQI score was 12, so it can be concluded that patients with psoriasis experience a severe disability [12,13].

Patients with psoriasis experienced problems with interpersonal and stigmatic conditions, in one survey, 27% of psoriasis patients experienced difficulty in sexual activity, 81% experienced a shame when psoriasis was seen by others, and 88% were very worried about worsening of the disease. In addition to the stigma experienced also need to be considered, stigma is an attitude by the public against a condition and also the behavior of discrimination against patients with psoriasis which will cause psychological stress and disability of the patient [14].

In this study proved the existence of an improvement after the health promotion of the quality of life of patients with psoriasis. This is allegedly due to a change in the process of thinking of psoriasis disease, so this provides a change in the psychological mindset that can accept the continuity of life with the disease and a deeper knowledge of the disease itself [14,15].

### CONCLUSION

Patients with psoriasis tend to have moderate impairment regarding the quality of life as measured using the DLQI, teaching-based health promotion interventions, social media, and booklets can improve the quality of life in patients with psoriasis.

### AUTHOR’S CONTRIBUTION

All authors contributed to all of the writing process of this article.

### CONFLICTS OF INTEREST

Authors have no conflicts of interest regarding all elements in this study.

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