



## The Effect of Using a Traditional Mask of Moringa Leaves for Dry Facial Skin Care

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### Abstrak

Kondisi kulit yang kering jika tidak dirawat dan diatasi akan menimbulkan rasa kurang percaya diri bagi penderitanya. Kulit wajah yang kering dapat disebabkan oleh beberapa faktor antara lain usia, paparan sinar matahari, cuaca, genetik, struktur kulit, pola makan, faktor lingkungan, dan penyakit kulit. Tujuan dari penelitian ini adalah untuk mengetahui pengaruh penggunaan masker tradisional daun kelor terhadap perawatan kulit wajah kering. Jenis penelitian ini adalah penelitian eksperimen dengan metode kuasi eksperimen. Sampel penelitian terdiri dari 6 sampel dengan menggunakan metode purposive sampling. Jenis data yang digunakan adalah data primer. Analisis data menggunakan uji normalitas, uji homogenitas, dan uji hipotesis (ANOVA), dilanjutkan dengan uji Duncan. Analisis normalitas dan homogenitas data digunakan untuk menguji prasyarat analisis sebelum dilakukan pengujian hipotesis. Hasil penelitian menunjukkan bahwa pada kelompok kontrol ( $X_0$ ) tanpa penggunaan masker tradisional daun kelor tidak terjadi perubahan tingkat kelembapan kulit dan tingkat kehalusan tekstur kulit wajah. Pada kelompok eksperimen  $X_1$  dan  $X_2$  yang menggunakan masker daun tradisional menunjukkan perubahan yang signifikan pada tingkat kelembapan dan kehalusan tekstur kulit wajah. Terdapat perbedaan pengaruh perawatan wajah kering pada wanita usia 35-45 tahun dengan menggunakan masker tradisional dari daun kelor pada tiga perlakuan berbeda untuk indikator kelembapan dan tekstur kulit wajah dengan signifikansi  $0,016 < 0,050$ .

**Kata kunci:** Efek, Masker Daun Kelor Tradisional, Perawatan Wajah, Kulit Kering

### Abstract

Dry facial skin can be caused by several factors including age, sun exposure, weather, genetics, skin structure, diet, environmental factors, and skin diseases. The purpose of this study was to determine the effect of using traditional Moringa leaf masks for dry facial skin care. This type of research is experimental research with quasi-experimental methods. The research sample consisted of 6 samples using the purposive sampling method. The type of data used is primary data. Data analysis used the normality test, homogeneity test, and hypothesis testing (ANOVA), followed by the Duncan test. Analysis of normality and homogeneity of the data is used to test prerequisite analysis before testing the hypothesis. The results showed that in the control group ( $X_0$ ) without the use of traditional moringa leaf masks, there was no change in the level of skin moisture and the level of smoothness of facial skin texture. In the experimental group  $X_1$  and  $X_2$  using a traditional leaf mask showed a significant change in the level of moisture and smoothness of facial skin texture. There are differences in the effect of treating dry faces on women aged 35-45 years using traditional masks from Moringa leaves in three different treatments for indicators of moisture and facial skin texture with a significance of  $0.016 < 0.050$ .

**Keywords:** Effect, The Traditional Moringa Leaf Masks, Face Treatment, Dry Skin

## 1. INTRODUCTION

The skin is the outermost layer of a person's body that can be seen directly. The skin becomes one of the parts of the body that becomes the main focus when a person meets his environment, especially the skin of the face. Clean, beautiful, bright, smooth skin and free from various diseases is everyone's dream, especially women. Previous research explains that healthy facial skin has criteria that are elastic/supple, soft, glowing skin tone, and normal skin type (Sanad & Mabrouk, 2016; Sopianti & Bulan, 2018). One of the skin problems that are usually experienced is dry facial skin which makes the level of confidence decrease to appear in public because dry skin gives the appearance of dull, flaky facial skin, causes fine wrinkles

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and facial makeup does not easily stick to the face. Normal skin is characterized by non-oily and non-dry skin, so it looks fresh and good, and pores are almost invisible (Kawarkhe et al., 2016; Rudi et al., 2017).

Dry skin is smooth, brittle, and dry skin with a condition on the cheeks (Asthana et al., 2021; Khansa, 2019). The lower part of the skin is less flexible, the pores are not clearly visible due to a lack of oil production from the sebaceous kelenjer (oil). Dry skin is caused by lack of oil production from sebaceous kelenjer (oil) which results in a tendency to premature aging and prone to wrinkles (Beringhs et al., 2013; Hendrawati et al., 2018; Nilforoushzadeh et al., 2018). Dry skin requires special care, one of which is using cosmetics that are able to moisturize dry skin so that oil levels remain balanced and skin moisture is maintained. Skincare is done to get healthy, fresh, and beautiful skin, but the most important thing is to do facial skin care should be regularly, both modern and traditionally. Skincare is divided into two types, namely traditional treatments and modern treatments. Traditional treatment means treatment using natural cosmetic ingredients whose process is carried out naturally. While modern treatment is treatment using cosmetic preparations made from chemicals that have been packaged into modern products and tools/advanced technology (Murnalis, 2019; Ningsih & Ambarwati, 2021; Putri, 2019). One of the treatments that can be done is to wear a face mask. Similar research explains that masks are an inseparable part of care and these masks are used at the last level in facial skin care (Almeida et al., 2021; Gaspar et al., 2022; Madikizella & Astuti, 2022).

Treatment for dry skin can be done periodically. Previous research states that the use of masks can be done 2x a week or 1x a week (Couteau & Coiffard, 2016). Meanwhile, other research states that the use of masks can be done once a week or 2 times a week (Paramsothy et al., 2017; Tepper et al., 2017; Virgita & Krisnawati, 2014). The benefits of masks are as a protector and conditioner and moisturizer on the face so that the skin of the face becomes fresh and moisturized, eliminates skin dullness, remove old and dead cells, refreshes the skin, tightens the skin, and prevents wrinkles on the face (Burlando & Cornara, 2013; Lomban et al., 2020; Umah & Herdanti, 2017). Facial mask treatment also closes pores and breaks the skin, removes excessive fat on the skin, and improves the level of hygiene, health, and beauty of the skin, affecting and re-stimulate skin cell activities (Fauzi, 2013; Rahmawaty, 2020; Siregar et al., 2019). In general, women prefer facial treatments using masks made from natural ingredients. The manufacture of cosmetics using natural ingredients is better than synthetic ingredients. Synthetic ingredients can cause side effects and can damage the natural shape of the skin (Lee et al., 2016; Nilforoushzadeh et al., 2018; Tiwari et al., 2022). One of the natural care cosmetics is a mask. The use of natural masks is believed to produce safe skin beauty (Ismayanti et al., 2021; Lee et al., 2016; Tiwari et al., 2022). In addition to being safe, natural masks are also easy to process. Traditional masks are masks whose content is from natural ingredients that are easy to get from around the environment, and the processing method does not require much time (Fongzossie et al., 2017; Fujiko et al., 2022; Wiendarlina et al., 2020).

Previous research stated that moringa leaves have high antioxidants and can be used to prevent free radicals (Badriyah et al., 2017; Kusmardika, 2020). Moringa itself is already known as a miracle tree in the world because Moringa has many properties ranging from its stems, flowers, seeds, fruits and leaves. Feasibility of Moringa Leaf Traditional Masks for Dry Face Skin Care products that Moringa leaves are worthy of being used as dry facial skin care masks because Moringa leaves contain vitamins B1 and C which are good for dry facial skin treatment. Vitamin B1 contained in moringa leaf masks which have a function as antioxidants that help improve blood circulation. However, this traditional mask of Moringa leaves has not been used to the face for dry skin care

## 2. METHODS

This type of research is a quasi-experiment with the design of Nonequivalent Control Group Design, which is to explain the influence of using traditional Moringa leaf masks for dry facial skin care. The object of the study was a wanuta aged 35-45 years who lived around the Padang State University campus who had a dry face. Sampling used purposive sampling technique was carried out voluntarily by 6 people. This study consisted of three different groups, namely the control group (X0), the experimental group 1 (X1) with a frequency of use 1x in a week, and the experimental group 2 (X2) with a frequency of use 2x in a week. The type of data used in this study was primary data, a data analysis technique using Vanriens analysis (ANOVA), followed by the Duncan test to see significant differences in the results of the variance analysis.

## 3. RESULTS AND DISCUSSION

### Result

The description of the data from this study is the difference in the effect of using traditional Moringa leaf masks for keirng facial skin care on three different treatment groups, namely the control group (X0) without treatment, the experimental group 1 (X1) with a frequency treatment of 1x in a week, and the experimental group 2 (X2) with a frequency treatment of 2x in a week.

**Table 1.** Normality Test Results of Skin Texture Indicator Research Data

No	Assessment Indicators	Sample	Sig	Alpha	Mean
1	Moisture	X0	0.186	0.05	Normal
		X1	0.200	0.05	Normal
		X2	0.200	0.05	Normal
2	Texture	X0	0.200	0.05	Normal
		X1	0.200	0.05	Normal
		X2	0.200	0.05	Normal

Based on [Table 1](#), it can be seen that the probability significance score for the control group (X0) is 0.186, the experimental group 1 (X1) is 0.200 and the experimental group 2 (X2) is 0.200. Because of the value of Asymp. Sig. (2-tailed) greater than 5% or 0.05 then it is stated that all data for normality testing on skin moisture indicators have a normal data distribution. While in the texture indicator it can be seen that the probability significance score for the control group (X0) is 0.200, the experimental group 1 (X1) is 0.200 and the experimental group 2 (X2) is 0.200. Because of the value of Asymp. Sig. (2-tailed) greater than 5% or 0.05 then it is stated that all data for normality testing on skin texture indicators have a normal data distribution.

**Table 2.** Results of Homogeneity Test Data Research Indicators of Skin Moisture Indicators

No	Assessment Indicators	Sample	Sig	Alpha	Mean
1	Moisture	X0	0.231	0.05	Homogeneous
		X1	0.229	0.05	Homogeneous
		X2	0.711	0.05	Homogeneous
2	Texture	X0	0.324	0.05	Homogeneous
		X1	0.305	0.05	Homogeneous
		X2	0.087	0.05	Homogeneous

From [Table 2](#), it can be seen that the probability significance score for the control group (X0) is 0.231, the experimental group 1 (X1) is 0.229 and the experimental group 2 (X2) is 0.711. Since the value of Sig. is greater than 5% or 0.05, it is stated that all data for homogeneity testing on skin moisture indicators are homogeneous. On the texture indicators, it can be seen that the probability significance score for the control group (X0) is 0.324, the experimental group 1 (X1) is 0.305 and the experimental group 2 (X2) is 0.087. Since the value of Sig. is greater than 5% or 0.05, it is stated that all data for homogeneity testing on skin texture indicators are homogeneous.

Based on the results of the data analysis, it can be seen that the significance score is 0.032, because  $0.032 < 0.05$  it is stated that the hypothesis that reads "There is a difference in the effect of dry facial skin care using traditional Moringa leaf masks with three different treatments on indicators of inertia and skin texture" was accepted with a confidence level of 95% and an error rate of 5%. Because it was stated that the three groups of data were significantly different, further tests were carried out to analyze which treatment groups were different, the Advanced Test analysis was carried out the Ducan test.

**Table 3. Advanced Test Results (Duncan) Skin Moisture Indicator Research Data**

No	Assessment Indicator	Sample	Mean
1	Moisture	X0	25.000
		X1	29.286
		X2	36.143

Based on the analysis of the Ducan Test presented in [Table 3](#), it can be explained that the control group (X0) with an average (25.0) differed significantly from the frequency treatment group of 1 x in 7 days (X1) with an average value (29.2), and the frequency treatment group of 2 x in 7 (X2) with an average value (36.1). Thus it is stated that between X0 is different from X1 and X2, while X1 and X2 do not differ significantly (markedly).

That the Significance score is 0.016, because  $0.016 < 0.050$  it is stated that the hypothesis that reads "There is a difference in the effect of dry facial skin care using traditional Moringa leaf masks with three different treatments on skin texture indicators" was accepted with a 95% confidence level and an error rate of 5%. Because it is stated that the three groups of data are significantly different, further tests are carried out to analyze which treatment groups are different, the Advanced Test analysis is carried out with the Duncan Test.

**Table 4. Advanced Test Results (Duncan) Skin Texture Indicator Research Data**

No	Assessment Indicator	Sample	Mean
1	Texture	X0	23.857
		X1	32.071
		X2	38.143

Based on the analysis of the Duncan Test presented in [Table 4](#), it can be explained that the control group (X0) with an average (23.8) was significantly different from the treatment group with a frequency of 1x in 7 days (X1) with an average value (32.0), which did not differ significantly from the treatment group with a frequency of 2x in 7 days (X2) with an average score (38.1). Thus it is stated that between X0 is different from X1 and X2, while X1 and X2 do not differ significantly (markedly).

## **Discussion**

Comparison of the results of facial skin moisture levels from the three treatment groups showed that in the control group (X0) who were not treated using traditional moringa leaf masks the average score of the moisture level of the skin of the two samples showed towards dry skin, in the experimental group 1 (X1) given facial skin care with traditional masks of Moringa leaves with a frequency of use 1x in 7 days showed the average results of the level of facial moisture of both samples towards the seventh normal and moist skin, while in the experimental group 2 (X2) who were given facial skin care using traditional Moringa leaf masks with a frequency of 2x in 7 days obtained the average moisture level of the second facial skin sample towards normal and moist skin in the sixth to seventh treatment actions.

Based on ANOVA statistical testing to see the differences in results from the three treatment groups significantly, a calculated significance of  $0.032 < 0.050$  was obtained, which means that the hypothesis that reads "there is a difference in the effect of dry facial skin care using traditional Moringa leaf masksters with three different treatments on skin moisture indicators" was accepted at a 95% confidence level and a significance of 5%. Duncan Test analysis states that between X0 is different from X1 and X2 whereas X1 and X2 are not significantly different (markedly). Thus it was stated that the experimental group 2 treated using traditional masks of Moringa leaves with a frequency of 2x in days had the best results because they had the highest average results.

The results of this study are in accordance with the previous research which states that Moringa leaf masks contain vitamins B1 and C and moringa leaves contain Vitamins A, C, E, B1, B2, and B3 (Madikizella & Astuti, 2022; Perwita, 2019). Meanwhile, other research stated that several factors that cause dry skin include lack of certain nutrients such as vitamins A, B, and C are one of the triggers for dry skin (Dattola et al., 2020). Thus the problem of vitamin deficiency in dry skin can be overcome by using traditional Moringa leaf masks that contain vitamins A, B, and C that the skin needs. By doing facial skin care using a traditional Moringa leaf mask that contains many vitamins can be useful in moisturizing dry facial skin, while the results of the study recommend that treatments with a frequency of 2x in 7 days have better results if done regularly. Therefore, to moisturize dry facial skin, you can use a traditional mask of Moringa leaves with a frequency of 2x in 7 days for 6 treatments.

Differences in the results of facial skin moisture levels from the three treatment groups showed that in the control group (X0) that was not treated using traditional Moringa leaf masks the average score of the facial skin texture level of the two samples showed towards the skin is not smooth, in the experimental group 1 (X1) given facial skin care with traditional Moringa leaf masks with a frequency of use 1x in 7 days showed the average results of the facial texture level of both samples towards the seventh normal and smooth skin, while in the experimental group 2 (X2) who were given facial skin care using traditional Moringa leaf masks with a frequency of 2x in 7 days obtained an average level of moisture from the two samples towards normal and smooth skin in the sixth to seventh treatment actions. Based on ANOVA statistical testing to see the significant difference in the results of the three treatment groups, a calculated significance of 0.016 was obtained, because  $0.016 < 0.050$ , it was stated that the hypothesis that reads "there are differences in the influence of the use of traditional Moringa leaf masks for dry facial skin care with three different treatments on skin texture indicators" was found at a level of 95% confidence level and 5% significance. Duncan's Test analysis stated that between X0 is different from X1 and X2 while X1 and X2 are not significantly different (markedly), meaning that experimental group 2 treated using traditional Moringa leaf masks had the best results because it had the highest average yield.



The results of this research that has been carried out state that there are differences in the influence of facial skin care results using traditional Moringa leaf masks and use at a frequency of 2x in 7 days shows the best results. Supported by similar research which states that Moringa leaf masks contain vitamins B and C which are good for dry facial skin care (Almeida et al., 2021; Madikizella & Astuti, 2022). Moringa leaves contain a lot of high antioxidants so that they can maintain the softness and smoothness of skin texture (Arauzo et al., 2021). One of the most efficacious moringa plant content is antioxidants, especially in the leaves that contain high antioxidants, one of which is vitamin E. Previous research explained that vitamin E is very useful for preventing aging and smoothing the skin (Draeos, 2018). Thus, to overcome the problem of dry facial skin, one of the solutions offered to increase the brightness of facial skin is to do facial skin care using traditional Moringa leaf masks.

#### 4. CONCLUSION

Facial skin care without the use of traditional Moringa leaf masks in the control group (X0) showed no significant change in results from the beginning of the study (pretest) to the last treatment in the seventh facial cleansing treatment on skin moisture level indicators and skin texture indicators. Facial skin care using traditional Moringa leaf masks in the experimental group (X1) showed significant changes in results from the beginning of the study (pretest), on the indicators of skin moisture levels towards normal after the first treatment and became normal in the seventh treatment, while in the skin texture indicators showed a smooth or general condition in the seventh treatment. Facial skin care using traditional Moringa leaf masks in the experimental group (X2) showed significant changes in results from the beginning of the study (pretest), on the indicators of skin moisture levels towards normal after the first treatment and became normal in the sixth and seventh treatments, while in the skin texture indicators showed a smooth or general condition in the sixth and seventh treatments. Hypothesis test showed that there was a difference in facial skin moisture results between the three treatment groups at a significance level of 95% and there was a difference in facial skin texture results between the three treatment groups at a significance level of 95%

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