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# Effectiveness of Snakehead Fish Extract (*Channa starata*) on Perineal Wounds

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**Abstract:**
Injuries to the birth canal can occur accidentally, such as in an episiotomy. Of 85% of maternity mothers who experienced injuries, 35% experienced perineal rupture, 25% experienced cervical rupture, 22% experienced vaginal injuries, and 3% experienced urethral rupture. This study aimed to determine the effectiveness of snakehead fish extract on the healing of perineal wounds in maternity mothers at the Z Clinic, Tangerang. This study is experimental research with a quasi-experimental research design with a non-equivalent control group design. The sample in this study was maternity mothers. Data in this study were analyzed using Univariate and bivariate analyses (Mann-Whitney test). It was found that the average healing of perineal wounds in the group given snakehead fish extract on day 3 was 9.2, while the average healing of perineal wounds on day 8 was 6.1. Then the average healing of perineal wounds in the group not given snakehead fish extract on day 3 was 9.2, while the average healing of perineal wounds on day 8 was 7.0. There is an effect of snakehead fish extract on the healing of perineal wounds in maternity mothers at the Z clinic, Tangerang with a p-value = 0.001. There is an effect of snakehead fish extract on the healing of perineal wounds in maternity mothers.

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## INTRODUCTION

Injuries to the birth canal can occur accidentally, such as in an episiotomy. Incisions, where the tears are straight (flat) are easier to repair and faster to heal than lacerations, which are irregular and uncontrolled (Sinaga et al., 2022). Nearly 90% of the labor process experienced perineal rupture, either with or without an episiotomy (Idhayanti et al., 2020). Perineal rupture can cause postpartum hemorrhage so that it is at risk of causing maternal death (Suharja et al., 2022).

There are 2.7 million cases of perineal rupture in maternity mothers worldwide. This figure is estimated to reach 6.3 million in 2050 (Triyanti et al., 2017). In America, 26 million or 40% of maternity mothers experience perineal rupture (Febrianti, 2022). In Asia, perineal rupture is also quite a problem in society, 50% of perineal rupture cases worldwide occur in Asia. Meanwhile, in Indonesia, the prevalence of maternity mothers who experienced perineal rupture in the age group of 25-30 years old was 24%, while in the age group of 32-39 years old was 62%. Then the prevalence of maternity mothers who experienced birth canal injuries was 85% of Indonesia's 20 million maternity mothers. Of 85% of maternity mothers who experienced injuries, 35% experienced perineal rupture, 25% experienced cervical rupture, 22% experienced vaginal injuries, and 3% experienced urethral rupture (Haryanti & Dahliana, 2022).

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The healing of perineal wounds are varied, some experience normal healing (6-7 days) and some experience delayed healing (Darwati, 2019). Perineal wound care is carried out to prevent infection during the puerperium because the perineal area is an area that is difficult to keep dry and clean (Novelia et al, 2021). This has the risk of causing postpartum infection because of the wound. The causes of infection include exogenous (germs from outside), autogenous (germs from other places in the body), and endogenous (germs from the birth canal itself) bacteria. In general, the frequency of puerperal infection is around 1-3%. So it is necessary to treat the wound properly so as not to get infected (Kurniasari et al., 2018).

The first impact of delayed healing of perineal wounds is the occurrence of infections and the second is complications. The appearance of infections in the perineum can spread to the urinary tract or to the birth canal, which can result in the emergence of complications of infections in the bladder and in the birth canal. Puerperal infections that can occur because of perineal wound complications include metritis, endometritis, peritonitis, and even pelvic abscesses. Then the third is the occurrence of postpartum maternal deaths. Slow handling of complications can cause death in postpartum mothers considering that the physical condition of postpartum mothers is still weak (Purnani, 2019). Immediate proper care after delivery or suturing can help reduce edema and bruising. If the perineal area fails to heal or is still causing pain even though an initial phase of healing should have occurred, it may be recommended to resuture or repair (Antini et al., 2016).

The wound healing process consists of 3 phases: inflammation, proliferation (epithelialization), and maturation (remodeling). Factors that affect wound healing include stress, nutrition, tissue perfusion, circulatory disorders, metabolic changes, early mobilization, age, and obesity (Hardono et al., 2020). Efforts to prevent infection of perineal rupture can be done by giving pharmacological and non-pharmacological therapy. Pharmacological therapy Firdayanti (2014) is done by administering antibiotics and antiseptic drugs (povidone-iodine) for the treatment of perineal rupture, but these drugs and materials have side effects such as allergies and inhibiting the production of collagen for wound healing (Zeranika et al., 2022). Treating perineal wounds using antiseptics or antibiotics tends to be avoided (Darulis et al., 2021). Meanwhile, non-pharmacological therapy to speed up wound healing so that infection does not occur is done by using binahong leaves, cinnamon, red betel leaves, green betel leaves, and snakehead fish.

Snakehead fish (Channastriata) can increase immunity because it contains high protein and albumin (Sari et al., 2020). Snakehead fish extract contains 70% protein and 21% albumin. In addition, snakehead fish extract contains complete amino acids and zinc, selenium, and iron micronutrients. Other ingredients in snakehead fish extract are allicin, allyl sulfide, and furostanol glycosides (Suprayitno, 2013). Protein and albumin can function as building blocks for damaged cells so that wound healing will take place more quickly (Triyanti et al., 2017). Revealed that giving snakehead fish extract orally or by mouth can increase albumin levels, speed up the wound healing process, and shorten hospital stays (Turnip et al., 2022). This study aimed to determine the effectiveness of snakehead fish extract on the healing of perineal wounds in maternity mothers at the Z Clinic, Tangerang.

## METHOD

This study used a quasi-experimental design. In this study, the two experimental groups were compared by giving a test in the form of a pretest to know the conditions of the groups before being given treatment. Then the two experimental groups were compared again by giving a posttest test to know the group's conditions after being given treatment (the snakehead fish extract). The population in this study was all maternity mothers who came to the Z Clinic,

Tangerang, from November to December 2022. The sample in this study was 40 people. The sample was collected using a quota sampling technique. The treatment (intervention) was given 500 mg of snakehead fish extract to drink thrice daily.

## RESULT

### Univariate Analysis Results

Table 1. Mean (Average) Healing of Perineal Wounds in The Group of Maternity Mothers Given Snakehead Fish Extract (Intervention Group) and Not Given Snakehead Fish Extract Control Group)

| Wound Healing | Means | Standard Deviation | Minimum | Maximum |
|---|---|---|---|---|
| Intervention Group | | | | |
| Day 3 | 9.2 | 1.0 | 8 | 11 |
| Day 8 | 6.1 | 0.8 | 5 | 7 |
| Control Group | | | | |
| Day 3 | 9.2 | 0.9 | 8 | 11 |
| Day 8 | 7.0 | 0.9 | 5 | 8 |

Table 1 shows that the average healing of perineal wounds in the group given snakehead fish extract on day 3 was 9.2, with a standard deviation of 1.0, a minimum value of 8, and a maximum value of 11. Whereas the average of the healing of perineal wounds on day 8 day was 6.1, with a standard deviation of 0.8, a minimum value of 5, and a maximum value of 7. It is known that the average of the healing of perineal wounds in the group not given snakehead fish extract on day 3 was 9.2, with a standard deviation of 0.9, a minimum value of 8, and a maximum value of 11. Whereas the average of the healing of perineal wounds on day 8 was 7.0, with a standard deviation of 0.9, a maximum value of 5, and a maximum value of 8.

### Bivariate Analysis Results

Table 2. Effectiveness of Snakehead Fish Extract on the Healing of Perineal Wounds in Maternity Mothers

| Wound Healing | Median | Minimum | Maximum | p-values |
|---|---|---|---|---|
| Intervention Group | 6.00 | 5 | 7 | 0.001 |
| Control Group | 7.00 | 5 | 8 | |

From the Mann-Whitney test, it is known that the average of healing of perineal wounds in the intervention group was 6.1, and in the control group was 7.00. Based on the table above, it is known that the statistical test results obtained a p=0.001 (p-value<α=0.05), meaning that snakehead fish extract affects the healing of perineal wounds in maternity mothers.

## DISCUSSION

### Average healing of perineal wounds in the group of maternity mothers given snakehead fish extract (intervention group)

Based on the study's results, it was found that the average of the healing of perineal wounds in the group given snakehead fish extract on day 3 was 9.2, with a standard deviation of 1.0, a minimum value of 8, and a maximum value of 11. Whereas, the average of the healing of perineal

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wounds on day 8 day was 6.1, with a standard deviation of 0.8, a minimum value of 5, and a maximum value of 7.

These results follow the results of a study conducted by Susilowati (2019) that there is a significant difference between the treatment (intervention) group and the control group. The overall results of this study indicate that protein and albumin levels can be used as promising non-pharmacological treatments for lacerations. Efforts to prevent infection of perineal rupture can be done by giving pharmacological and non-pharmacological therapy. Pharmacological therapy is done by administering antibiotics and antiseptic drugs (povidone-iodine) for the treatment of perineal rupture, these drugs and materials have side effects such as allergies and inhibiting the production of collagen for wound healing (Rositah & Herawati, 2022). Meanwhile, non-pharmacological therapy to speed up wound healing so that infection does not occur is done by using, one of which is, snakehead fish extract.

According to researchers, postpartum mothers who were given snakehead fish extract to treat perineal wounds experienced a faster healing process. This is because 70% protein and 21% albumin content in snakehead fish extract, besides snakehead fish extract also contains complete amino acids that can function to repair damaged body tissues and have a role in increasing body resistance.

**Average healing of perineal wounds in the group of maternity mothers not given snakehead fish extract (control group)**

Based on the study's results, it was found that the average of the healing of perineal wounds in the group not given snakehead fish extract on day 3 was 9.2, with a standard deviation of 0.9, a minimum value of 8, and a maximum value of 11. Whereas, the average of the healing of perineal wounds on day 8 was 7.0, with a standard deviation of 0.9, a maximum value of 5, and a maximum value of 8.

According to Maryunani (2014), factors that affect wound healing include oxygenation, hematoma, age, nutrition, sepsis, drugs, lifestyle, and mobilization (Hardono et al., 2020). Researchers think that, in fact, the average healing of perineal wounds is varied, some take place normally (6-10 days), and some take place slowly (more than 10 days). The slow healing of perineal wounds is influenced by several factors, including internal factors, namely age, tissue handling, hemorrhagic, and hypovolemia. Local factors of edema, nutritional deficits, personal hygiene, oxygen deficits, and activity—and external factors, namely the environment, tradition, knowledge, socio-economic, handling of officers in providing health education on perineal wound care and mobilization exercises, maternal condition, and nutrition.

**Effectiveness of snakehead fish extract on perineal wound healing in maternity mothers**

Based on the statistical test results, it was found that the p-value obtained was 0.001 (p-value < α=0.05) meaning that there is an effect of snakehead fish extract on the healing of perineal wounds in maternity mothers at the Z Clinic, Tangerang

The most important need that postpartum mothers must meet with wounds is good nutrition for the immune system and wound healing. Nutrition here must adhere to the recommendations for a balanced and highly nutritious diet. Foodstuffs consisting of four main groups, namely proteins, fats, carbohydrates, and micronutrients (vitamins and minerals) are important for normal biochemical processes, which can also help the body increase its defense mechanism (immune system), and will ultimately help the wound healing process (Sinaga et al., 2022).

These results follow a previous study that gave 100 grams of steamed snakehead fish for 10 days. It was found that giving steamed snakehead fish was more effective in healing perineal

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lacerations in maternity mothers, with a p-value of 0.000 (p<0.005) and an average wound healing of 7 days. In this study, the results also showed that snakehead fish extract was effective in wound healing in maternity mothers. Modern processing of snakehead fish, namely snakehead fish extract capsules, can make it easier for maternity mothers to consume and is more economical.

Giving snakehead fish extract is proven to accelerate (speed up) the wound healing process. This is because giving snakehead fish extract will increase albumin levels in the blood. Increased levels of albumin can support the repair of damaged cells. The speed of the cell repair process is marked by a decrease in the inflammatory process around the wound and is followed by the formation of epithelial cells of the skin epidermis.

## CONCLUSION

From the results of this study, it can be concluded that snakehead fish extract influences the healing of perineal wounds in maternity mothers; in other words, snakehead fish extract is effective to be used to heal perineal wounds in maternity mothers.

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