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# Post Caesarean Section Wound Healing among Postpartum Women who Consumed Boiled Eggs

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## ABSTRACT

Post caesarean section (CS) suture wound healing is influenced by several factors, one of which is the consumption of high protein nutrition such as eggs. This study aimed to determine post-CS wound healing among postpartum women who consumed boiled eggs at the RSIA Pasutri, Bogor in 2021. This research method was a quasy experiment design with a post-test approach with Control Group. The total population was 30 postpartum women post CS, with a sample of 15 experimental groups and 15 control groups taken by purposive sampling, while data analysis used parametric test is Independent T-Test. The results of the study found that post CS postpartum women who consumed boiled eggs all respondents experienced post CS wound healing with good wounds which was 15 respondents (100%) compared to those who did not consume boiled eggs which was only 8 respondents (53.3%) experienced good wound healing. while the others experienced poor wound healing which was 7 respondents (46.7%). Based on the Independent T-Test statistical test in the experimental and control groups, the results of p value = 0.002 <0.05, thus there was a difference in post-SC wound healing between experiment and control group. Midwives can provide knowledge to post-SC women to consume boiled eggs in order to improve wound healing.

Keywords: post CS wounds; boiled eggs; wound healing

## INTRODUCTION

Caesarean section is giving birth to a fetus through an incision in the abdominal wall (abdomen) and uterine wall (uterus). Caesarean section is an artificial birth, in which the fetus is born through an incision in the abdominal wall and uterine wall with the condition that the uterus is intact and the fetal weight is above 500 grams. Cesarean section is an action to give birth to a baby weighing more than 500 grams, through an incision in the uterine wall that is still intact and causes pain (Jitowiyono, 2017; Sri Wahyuningsih, Hayati, & Safitri, 2021).

The results of the 2018 Basic Health Research (Riskesdas) show that the caesarean section birth rate in Indonesia was 17.6%, DKI Jakarta was the highest (31.1%), Papua was the lowest (6.7%), and South Sumatra was ranked 28 out of 34. Data obtained from the Health Service of South Sumatra was 90.2% of which 9.4% was carried out by surgery. In general, the number of cesarean deliveries in government hospitals was around 30% - 35% of total deliveries, while in private hospitals the number was very high, which was around 30% - 80% of total deliveries (Ayuningtyas et al., 2018). In 2020 the incidence of cesarean delivery at the RSIA Pasutri Bogor reached 2,351 cases, a very large number when compared to the vaginal delivery rate, which was 153 cases.

The National Nosocomial Infection Surveillance (NNIS, 2010) United States America indicates that surgical wound infection is the third most common infection that occurs in hospitals, about 14-16% of total patients in hospital experience surgical wound infections. For obstetric surgery cases Studies that have been carried out in several developing countries found the incidence of surgical wound infection with SC as follows: 12.5% ILO SC in Nigeria, 29.38% ILO SC in Oman and 9.6% ILO SC in Thailand (Novelia, Sia & Songwathana, 2017; Novelia & Songwathana, 2017).

Based on a preliminary study conducted by researchers, using interviews and observations on 20-21 June 2021 in the obstetrics polyclinic room of RSIA Pasutri Bogor, 2 post op sc wet wounds were obtained from 10 respondents who were observed. Patients say they don't eat eggs because they don't like these foods and other reasons cause itching.

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Post sectio caesarea wound healing is influenced by several factors including local factors consisting of oxygenation, hematoma, etc., common factors include age, nutrition, sepsis, steroids, and drugs, and other factors are mobilization and lifestyle. Someone who has stitches really needs adequate protein intake because stitches need protein so that the body makes new tissue so that the stitches will dry up quickly and heal (Feriyanto, 2014: Darulis, Kundaryanti, & Novelia, 2021; Nurul, Widowati, & Novelia, 2022).

Chicken eggs are a food that has a high protein content. The types of eggs commonly consumed by Indonesian people are chicken eggs and duck eggs. Consumption of broiler eggs is higher because the price is relatively cheap and the level of availability is high in the market. It is known that albumin in eggs (ovalbumin) is most abundant in the egg white than the yolk (Prastowo, 2014).

In a study conducted by Lia Dharmayanti in 2018 showed that there was an effect of consuming steamed egg white on the healing of post sectio caesarea sutures at the Maternity Home of Mrs. Bertha, Pasuruan City. Consumption of steamed egg whites is effective in increasing the healing time of post sectio caesarea wounds. Continuous efforts are needed to convey information on research results to the community, especially those who hold the tradition of abstaining from food during the puerperium so that the wounds experienced will recover quickly and postpartum mothers can immediately carry out activities.

Furthermore, in the research of Desi et al. (2016) with the title The Relationship of Protein Intake with Wound Healing in Post Op Sectio Caesarea (Sc) Patients at the Pringsewu Regional General Hospital Lampung in 2016, carried out with the aim of analyzing the relationship between protein intake and wound healing in Post Op SC patients at the General Hospital Pringsewu Region, Lampung in 2016. This study also shows consistent results that there was a relationship between protein intake and post-op SC wound healing. This study recommends that respondents can increase protein intake to accelerate wound healing.

## METHOD

This study uses a quasy experiment design with a post-test approach with control group design. The independent variable is the consumption of boiled eggs while the dependent variable is the CS wound healing. In this study, the population was all women who performed cesarean section at the RSIA Pasutri Bogor in 2021. The total population was 30 with a sample of 15 postpartum women in the treatment group and 15 postpartum women in the control group, which were taken by purposive sampling, and data analysis using parametric tests which was Independent T-Test. Inclusion criteria in this study including willing to be a respondent, post-op patient for CS on the 2nd day, and age 20-35 years. While the exclusion criteria for this study were Post Op SC women with complications, a history of DM, and blood clotting disorders.

The instrument used in this study was to observe the CS wound. Examination of CS scars was carried out by observation using the REEDA scale observation sheet and found the total number of wound healing rates based on the REEDA scale. The aim is to describe post-SC wound healing. Then give consumption to the control group by consuming boiled eggs as much as 4 eggs per day for 7 consecutive days and the experimental group is not given an experimental stimulus.

## RESULT

The results of the research conducted at RSIA Pasutri Bogor on August 13 - August 26, 2021 with a sample of 30 post CS patients on day 2 which were divided into two groups, 15 respondents were the experimental group and 15 other respondents were the control group.

The age data shows that of 15 respondents in the Experimental group, the mean or average age was 28.73 with a minimum age of 24 years and a maximum age of 35 years, while of 15 respondents in the control group having a mean or average age of 27.73 with a minimum age of 22 years and a maximum age of 33 years. In the education data, it was obtained that the respondent's education with the highest frequency in the experimental group was senior high school (60%) and the lowest education frequency was elementary school (13.3%), while in the control group the education with the highest frequency was senior high school (40.0%) and education with the lowest frequency was Elementary School (6.7%). In the experimental group's work data, it was found that the frequency of 100% of work as housewives, while in the control group the highest frequency was 66.7% as housewives and the lowest frequency was civil servants (6.7%) and the others were private as much as 26.7%.

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Table 1. Frequency Distribution of Respondents Characteristics

| Variable | Group | | | |
|---|---|---|---|---|
| | Experimental | | Control | |
| | f | % | f | % |
| Age (min-max)<br>Experimental group (24-35)<br>Control group (22-33) | M = 28.73 | SD = 3.63 | M = 27.73 | SD = 3.43 |
| Education | | | | |
| Elementary school | 2 | 13.3 | 1 | 6.7 |
| Junior high school | 4 | 26.7 | 3 | 20.0 |
| Senior High School | 9 | 60.0 | 6 | 40.0 |
| College | 0 | 0 | 5 | 33.3 |
| Jobs | | | | |
| Housewife | 15 | 100 | 10 | 66.7 |
| Government employees | 0 | 0 | 1 | 6.7 |
| Private sector employee | 0 | 0 | 4 | 26.7 |

Table 2. Differences in Post-SC Postpartum Wound Healing at Pasutri Bogor Hospital for Mothers and Children

| Group | N | Mean | Std. Deviation | t-test | p-value |
|---|---|---|---|---|---|
| Experimental | 15 | 4.87 | 2.588 | 3.374 | 0.002 |
| Control | 15 | 2.27 | 1.486 | | |

Based on table 2 shows that p value = 0.002 <0.05, so it can be concluded that there was a difference in post-SC wound healing in postpartum mothers between those who consume boiled eggs and those who did not consume boiled eggs.

## DISCUSSION

The results showed that post sectio caesarea mothers who consumed 4 boiled eggs per day for 7 consecutive days had good suture wound healing criteria was 15 respondents, while those who did not consume boiled eggs had poor stitch wound healing criteria that was respondents. The age data shows that the age frequency distribution in the experimental and control groups has almost the same mean or average age; 28.73 and 27.73. Meanwhile, the minimum-maximum age in each group was 24-35 years and 22-33 years. The age of the respondent is one of the risk factors that affect the healing of CS wounds. This study was in line with Damayanti's research (2013) with the title Factors Associated with Post Sectio Caesarea Wound Healing at Arifin Achmad Hospital, Riau Province in 2013. The results showed that there was a relationship between age and post-section caesarea wound healing with (p = 0.002 < 0 ,05).

Age can interfere with all stages of wound healing such as: vascular changes disrupt circulation to the wound area, decreased liver function interferes with the synthesis of clotting factors, slow inflammatory response, decreased antibody and lymphocyte formation, less soft collagen tissue, less elastic scar tissue. Healthy reproductive age is a safe age for a woman to get pregnant and give birth, the age of 20-35 years. Intact skin in healthy young adults is a good barrier against mechanical trauma as well as infection, as well as the efficiency of the immune system, cardiovascular system and respiratory system allowing faster wound healing. With age, changes that occur in the skin are the frequency of use of epidermal cells, the inflammatory response to injury, sensory perception, mechanical protection, and skin barrier function. The speed of cell repair takes place in line with the growth or maturity of a person's age, but then the aging process can reduce the cell repair system so that it can slow down the wound healing process (Nurani, 2015).

The education data in the experimental group are mostly junior and senior high schools, while in the control group most of them have tertiary education and high school education, according to Notoatmodjo (2018) education is an effort of persuasion or learning to the community, so that people are willing to take actions (practices) to maintain (solve problems), and improve their health. A high level of education tends to have good knowledge. This is because mothers have broad insight so that they are easier to receive information and respond to health problems properly and are able to implement them in daily behavior and lifestyle.

Occupational data shows that the majority of respondents in both the experimental and control groups were housewives. Work is a necessity that must be done, especially to support life and family life. Work is generally a time-consuming activity and can provide experience and knowledge either directly or indirectly. The work environment can

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form knowledge because of the exchange of information between friends in the work environment (Wawan & Dewi, 2010). Based on the observations of the researchers, the work factor also affects the healing of suture wounds; in terms of income and work activities carried out. With the respondent's occupation, it can affect the economic status which will be related to the consumption pattern of the daily type of food. High economic status tends to meet the nutritional needs needed to support post-SC wound healing.

The results showed that there was a relationship between the consumption of boiled eggs among postpartum women with post CS wound healing at RSIA Pasutri Bogor area by the p value < 0.002. out of 30 respondents studied, who consumed animal protein foods such as boiled eggs in the control group experienced post-SC wound healing with good wounds was 15 respondents (100%) compared to those who did not consume boiled eggs, only 8 respondents (53.3%) experienced good healing. The others had poor wound healing which was 7 respondents (46.7%). Chicken eggs are a food that has the high protein content. Consumption of broiler eggs is higher because the price is relatively cheap and the level of availability is high in the market.

According to Almatsir (2017), improving nutrition is one of the keys to wound healing. Postpartum women are advised to eat a balanced diet, sufficient carbohydrates, protein, fat, vitamins, and minerals. The main nutritional factor of protein will greatly affect the healing of post sectio caesarea sutures because tissue replacement really needs protein that functions as a building block for damaged cells. Increased protein requirements are required for inflammatory processes, immunity and granulation tissue development. The main protein synthesized during the wound healing phase is collagen. The strength of collagen determines the strength of the wound skin after it heals. Lack of protein intake during the wound healing process significantly delays wound healing. One source of food that is rich in protein is eggs.

With the content contained in eggs, especially the protein content in which there is a complete amino acid content, eggs are an excellent food for suture wounds (Barasi, 2017). The function of protein is to help the body make new tissue in wounds. Of course, if a person's protein intake is fulfilled properly, the wound healing process will be faster. On the other hand, a lack of protein in the body will cause the wounds suffered to take a longer time in the wound healing process, including stitches (Dina, 2016).

According to the Wound Healing Society (WHS) an ideal wound healing is the return to normal skin structure, function and anatomy. There are 3 phases of wound healing, including the inflammatory phase that occurs at the beginning of the incident or when the wound occurs on day 0 to day 3 or day 5, the proliferative phase occurs on day 5 to day 7 after 3 days. Closure of the incision, and the remodeling phase occurs from day 8 to one to two years. In this phase the formation of collagen tissue in the skin for wound healing (Arisanty, 2013).

The REEDA scale is a tool that assesses the inflammatory process and tissue healing in perineal trauma, through an evaluation of 5 points: redness (hyperemia), edema, ecchymosis, discharge and approximation at the edges of the wound (Alvarenga et al, 2015). The results of data collection using the Reeda Scale in the experimental group found that wound healing was not good with a total of 6 respondents. Meanwhile in the control group all respondents experienced normal wound healing (100%). This suggests that nutritional support can be provided by providing additional protein sources to surgical patients. An example of a protein source that can be given as extra food to surgical patients is boiled eggs.

In a previous study by Henny Novita (2017), the results of data analysis showed that there was an effect of consuming domestic chicken boiled eggs with perineal wound healing in postpartum women in the South Tangerang Health Center area with a p-value <0.05. The conclusion of this study is that the healing of perineal wounds in postpartum women at the South Tangerang Regional Health Center who consumed boiled eggs from domestic chickens was faster than those who do not consume boiled eggs. There was an effect of consuming domestic chicken boiled eggs on the healing of perineal wounds in postpartum women at the South Tangerang Regional Health Center.

The results of another study conducted by Dharmayanti explained that there was an effect of consuming steamed egg whites on the healing of post CS sutures at the Maternity Home of Mrs. Bertha, Pasuruan City. Nutrient intake has an effect, especially steamed egg whites which contain high protein, thereby accelerating the healing process of post CS sutures. Although there are many factors that influence it, maintaining a high protein nutritional intake with egg white is more dominant for meeting protein needs in the body, because in the process of healing sutures the main thing needed is nutritional intake, especially protein.

Subsequent research was carried out by Tyas (2019) with the title Acceleration of Post CS wound healing among postpartum women who consumed boiled eggs with the results showing that post CS postpartum women who consumed boiled eggs all respondents experienced normal wound healing (100%) and those who did not consumed boiled eggs 8 respondents experienced normal wound healing (36.4%) and who experienced delayed wound healing were 7 respondents (63.6%).

Based on the results of the researcher's observations, after the intervention in the control group by consuming 4 hard-boiled eggs for 7 consecutive days showed a faster wound healing process. According to researchers, boiled eggs

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are a source of animal protein that is easy to apply as one of the additional protein intakes for postpartum women, seen from the high protein content in it. In addition, boiled eggs are also easy to find and processing is easier when consumed daily.

## CONCLUSION

Based on the research that has been done, there were differences in post SC wound healing between those who consumed boiled eggs and those who did not consume boiled eggs in the RSIA Pasutri Bogor area by looking at the p value < 0.002. Midwives can provide knowledge to post-SC women to consume boiled eggs in order to improve wound healing.

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