The Impact of Maternal Age and Parity on the Necessity of Episiotomy during Vaginal Delivery in Childbirth.

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Abstract: Childbirth is a complex process, and the decision to perform an episiotomy, a surgical incision made in the perineum during childbirth, has been a subject of discussion in obstetrics. This research aims to understand the relationship between the mothers's age and the number of parity concerning the necessity of episiotomy during childbirth. The data was collected from the Obstetrics and Gynaecology Department, Hospital Sultan Ismail. The respondents were in the age range of 16 to 40, with first child to fifth child. The independent variable is the mother, and the number of parity—dependent variables are necessary for episiotomy during childbirth. Two statistical methods were employed to analyze the collected data. Analysis of Variance (ANOVA) was used to determine if there was a significant difference in the mean age groups concerning the necessity of episiotomy. Pearson Correlation is utilized to explore the correlation between the number of parity and the need for episiotomy. There is a significant difference in the mean age group and the need for episiotomy, indicating that the age group of mothers relates to the need for episiotomy. The findings of this study contribute valuable insights into the factors influencing the necessity of episiotomy during childbirth. The mother's age and the number of parity were identified as significant variables in this context. Medical practitioners can use this information to make more informed decisions regarding the necessity of episiotomy based on the age and mother's parity. Policymakers can consider these findings when developing guidelines related to episiotomy procedures.

Keywords: Episiotomy, Government Hospital, Maternal Age, Parity,

1. Introduction

Episiotomy is a minor surgery on a women's perineum (vagina) during the process of child delivery. The perineum is the area between the vagina and the anus. It is made up of skin and muscle. During an episiotomy, an incision is made in the perineum. (Lucey JR, 2015). The basic idea of episiotomy is to ease the process of childbirth and to avoid uncontrollable tears over the perineum. However, there is no proven scientific reason for the practice of episiotomy.

There is also a perception among clinicians that episiotomy results in faster wound healing and reduces the risk of severe tear over the perineum, sexual satisfaction delivery, and other complications such as urinary incontinence (inability to control urination). The episiotomy rate largely depends on the clinician who conducts the delivery, whether it is a routine practice or a selective chase based on each individual.

All surgical procedures run the risk of causing an infection; by breaking the natural skin barrier, bacteria and other infectious agents readily gain access to the body. With episiotomies, infection is recognized as a complication. A study in 1965 states that 70 patients post episiotomy were cultured and found that 76% were positive even with a sterile technique. The error in this study was that there was no differentiation in the results about infection versus contamination or colonization. Further studies showed that infections from episiotomies included febrile morbidity and stitch abscesses in roughly 1%, with wound infection and severe abscesses in approximately 0.5 to 3.0% of women. Those studies did not compare the rate and

type of infections with women who had not undergone an episiotomy. In the instance of a severe infection, death can occur.

2.   Methodology

The secondary data was analyzed from 147 respondents to study the need for episiotomy. Secondary data was collected from the patient database in the hospital portal, which was accessed with the help of a medical officer to investigate the contribution of age and parity in the decision to conduct episiotomy during vaginal delivery.

In statistics, normality tests are used to determine if a data set is well-modeled by a normal distribution and to compute how likely it is for a random variable underlying the data set to be normally distributed. The one-way analysis of variance (ANOVA) is used to determine whether there are any statistically significant differences between the means of three or more independent (unrelated) groups. The one-way ANOVA compares the means between the groups you are interested in and determines whether any of those means are statistically significantly different. Correlation is used to test relationships between quantitative variables or categorical variables.

3.   Analysis and Findings

The data was collected from the medical portal used at Hospital Sultan Ismail, Johor Bahru. One hundred forty-seven respondents who gave birth within three weeks of the date of data collection were considered and selected for this study to maintain the standard timing. The respondents were distributed and tabulated as per their age group and parity.

3.1   Distribution of Respondent by Age

The distribution of the respondents by age group is tabulated in Figure 1 below. The respondents between 16 and 20 were 2.72%, and most women in this age range will still be studying. Thus, they do not get married and conceive. However, it was said that most of the mothers within the range of 16 to 20 are not married and conceive a child out of wedlock. Mothers aged 21 to 25 were 23.13%, where most conceive their first child. The highest number of mothers, 37.41%, is between 26 and 30. Most women get married at this age in Malaysia; if it is early, they conceive either a second or third child at this age. The mother's age between 31 and 35 was 23.13% and 36 to 40 was 13.61%. The numbers drop back as this age is almost a passive age to conceive, as the ovum's health must be considered.
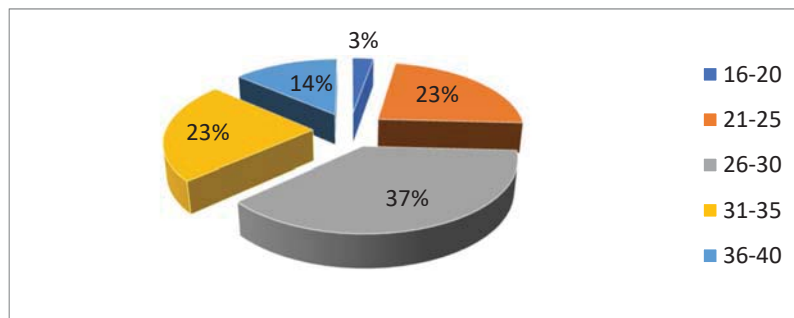

Figure 1. The Distribution of Respondents by Age Group

3.2 Distribution of Respondent by Number of Parity

The respondent was distributed per several parties the mother had and tabulated. As shown below, the mother with one child has a frequency of 36 (24.49%). There are 56 (38.10%) respondents with two children; as per this busy era, mothers prefer to have two or fewer children. This is because, nowadays, raising a child requires the parents to be mentally and financially strong. Thus, they choose one or two children. Moreover, mothers with three children are 40 (27.21%), likely smaller than the mothers with two children. The respondent with four children is 8 (5.44%), and lastly, seven respondents with five children (4.76%). It is rare to see mothers with 4th or 5th children, as raising and educating a child is expensive. However, most of them with 4 or 5 children are from the ethnicity of Malay.
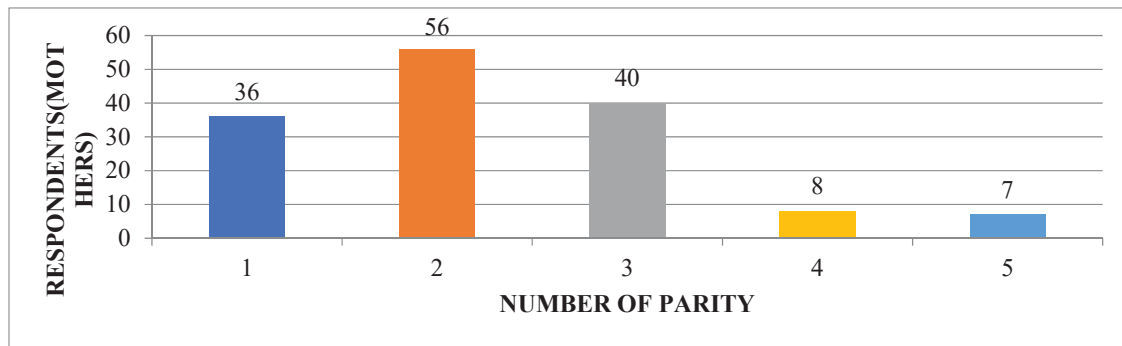

Figure 2. The Distribution Of Respondents By Number of Parity

4.   Result and Statistical Findings

4.1   The Age Group and Need for Episiotomy

The data associated with the age group and the need for episiotomy was analyzed. The normality test using Shapiro-Wilk was conducted to determine whether the data collected was normally distributed or not. Continue with the ANOVA test and Bonferroni Test.

4.1.1 Normality Test

To test for normality, the following hypothesis is conducted: Table 4 shows the Shapiro-Wilk Test, Kolmogorov-Smirnov, Cramer-von Mises, and Anderson-Darling. Since our respondents in this study are less than 200, the Shapiro-Wilk test will be focused. The Shapiro-Wilk shows that the p-value is less than 0.0001, which is smaller than the significant level of 5%. Therefore, the null hypothesis is rejected, and we can conclude that episiotomy data is not a normal distribution. By using the central limit theorem, since the episiotomy category Yes (1) is equal to 47 and category No (0) is equal to 100, is more than the rule of sample size, n larger or equal to 30, we assume it is the normal distribution data set.

4.1.2 Anova Among Age Groups and Episiotomy

This section elaborates on the result of the independent t-test and the Analysis of Variance (ANOVA) used. Two statistical methods were employed to analyze the collected data. Analysis of Variance (ANOVA) was used to determine if there was a significant difference in the mean age groups concerning the necessity of episiotomy.

H_0: No significant difference between the mean age group affects the need for episiotomy.

H_1: There is a significant difference between the mean of age group effect of the need for episiotomy

Based on Table 5 above, the result shows that the mean square of the variable age group is 0.22. The p-value is less than 0.0001. Since the p-value is less than the 5% significant levels, reject the null hypothesis. Thus, it can be concluded that there is a significant difference in the age group on episiotomy.

4.1.3 Relationship Between Parity and the Need of Episiotomy

The numbers measure the strength and direction of the linear relationship between the Number of Parity and Episiotomy variables. The variable Number of Parity and Episiotomy have a linear relation in numerical description r equal to -0.61754. This indicates a negative linear relation between the number of parities and Episiotomy, where when the number of parities increases, the need for episiotomy decreases.

5. Conclusion

There is a relationship between the parity and the need for episiotomy. The parity and need for episiotomy have a negative correlation. A negative correlation is a relationship between two variables in which one increases as the other decreases and vice versa. Therefore, the need for episiotomy decreases when the number of parities increases. It can be interpreted that the need for episiotomy during vaginal delivery for mothers with first parity is more. On the other hand, if it is not a first childbirth, episiotomy is not needed much.

From the previous chapter on the distribution of respondents on Episiotomy, the average percentage of episiotomies took place in Hospital Sultan Ismail, Johor Bahru, was 31.97%, where according to the circular by the Malaysian Medical Council, episiotomy is not reasonable if the rate is higher than 30%. From the sample we took, the average percentage of episiotomies done overall in a particular Hospital was slightly higher than the bar set by the Malaysian Medical Council.

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