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RELATIONSHIP BETWEEN PATIENTS' LEVEL OF KNOWLEDGE ABOUT CAESAREAN SECTION SURGERY AND PRE-OPERATIVE ANXIETY IN THE OPERATING ROOM KARUNIA KASIH HOSPITAL

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Abstract

Cesarean section is the most appropriate alternative to ensure the safety of the mother and fetus, such as in cases of placenta previa, preeclampsia, or abnormal fetal presentation. However, prior to undergoing a cesarean section, some pregnant women experience feelings of fear and anxiety. These feelings are influenced by various factors, including level of knowledge, educational background, support from a partner, economic circumstances, and psychological aspects. Limited understanding of a condition can increase a person's vulnerability to anxiety. Ignorance about medical procedures is often perceived as a threat or pressure, which in turn triggers stress and fear. This situation is often experienced by pregnant women who do not understand the process of childbirth, especially the stages of a cesarean section and its consequences. This increases the risk of anxiety prior to childbirth. Methods this study used a correlational analytical design with a cross-sectional approach. It was conducted in the Operating Room of Karunia Kasih Hospital, Indonesia, from November to December 2025. A total of 48 respondents were selected using total sampling. Data were collected using a combined Hamilton Anxiety Rating Scale (HARS) and State-Trait Anxiety Inventory (STAI) questionnaire to measure the respondents' anxiety levels and a questionnaire on the respondents' level of knowledge that had been adapted to assess the respondents' knowledge of caesarean section. Data analysis included univariate and bivariate analysis using the Chi-square test with a significance level of 0.05. Results the results showed that 8 respondents (25.8%) of the 31 respondents had low knowledge of preoperative anxiety and did not experience anxiety, while 23 respondents (74.2%) experienced anxiety. Among the 17 respondents with a good level of knowledge about preoperative anxiety, 10 respondents (58.8%) did not experience anxiety, while the other 7 respondents (41.2%) experienced preoperative anxiety. The statistical test results between the level of knowledge and preoperative anxiety obtained a P value of 0.051. Respondents with a good level of knowledge tended not to experience preoperative anxiety about cesarean section. Discussion this study shows a significant relationship between knowledge level and preoperative anxiety in cesarean section patients. Insufficient knowledge can exacerbate patients' preoperative anxiety. These findings highlight the importance of effective communication by health workers and also the importance of patients' curiosity to gain more knowledge to reduce preoperative anxiety.

Keywords: Cesarean section; level of knowledge; anxiety; preoperative

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INTRODUCTION

Cesarean section is a medical procedure involving surgery performed through an incision in the abdominal wall and uterus with the aim of delivering the fetus, especially if the fetus weighs more than 500 grams (Asriani & Sartika, 2023). Sirait (2022) states that cesarean section is a surgical delivery procedure performed by opening the abdominal wall and uterus to allow the birth process. This procedure is limited to the delivery of the fetus, but it can also be performed based on certain indications, such as uterine rupture or ectopic pregnancy developing in the abdominal cavity. Thus, it can be concluded that a cesarean section is a surgical procedure aimed at assisting the delivery process in mothers who cannot give birth vaginally due to medical conditions that could potentially endanger the safety of the mother or baby, by making an incision in the abdominal wall and uterus to remove a fetus weighing more than 500 grams.

The World Health Organization (WHO) recommends that the ideal proportion of deliveries by cesarean section should be in the range of 10-15% of all births. WHO data from 2021 shows an increase in the number of cesarean sections globally, with a prevalence of around 21% of total births worldwide. Furthermore, in 2022, the WHO emphasized that an increase in the caesarean section rate up to 10% is associated with a decrease in maternal and infant mortality, while an increase beyond that limit does not show a significant contribution to the reduction in mortality rates (Hizkianta Sembiring, 2022). Regionally, the use of cesarean sections has reportedly increased by 46% in China and by around 25% in Asia, Latin America, and Europe. In Indonesia, the 2022 Basic Health Research (Riskesdas) recorded that the percentage of deliveries by cesarean section reached 17.6%. In 2024, out of a total of 4,039,000 births, 927,000 were performed through cesarean section. The provinces with the highest rates were DKI Jakarta at 31.3%, Bali at 30.2%, North Sumatra at 23.9%, East Java at 22.4%, and West Java at 6.7%. In addition, data from a private hospital in Bekasi City in 2022 showed that out of 915 deliveries, 403 cases (44%) were vaginal deliveries, while 498 cases (54%) were performed by cesarean section (Riskesdas, 2022).

In certain medical situations, a cesarean section is the most appropriate alternative to ensure the safety of the mother and fetus, such as in cases of placenta previa, preeclampsia, or abnormal fetal presentation. However, prior to undergoing a cesarean section, some pregnant women experience feelings of fear and anxiety. These feelings are influenced by various factors, including level of knowledge, educational background, support from a partner, economic circumstances, and psychological aspects. Knowledge plays a significant role in influencing an individual's level of anxiety. Information is obtained through sensory processes, such as hearing, sight, and direct experience. Limited understanding of a condition can increase a person's vulnerability to anxiety. Ignorance about medical procedures is often perceived as a threat or pressure, which in turn triggers stress and fear. This situation is often experienced by pregnant women who do not understand the delivery process, especially the stages of a cesarean section and its consequences. This increases the risk of anxiety prior to delivery (Anggit Madhani, 2021).

Anxiety is an emotional state characterized by feelings of discomfort, tension, and worry about uncertain conditions (Anggit Madhani, 2021). Pardede and Simangunsong (2020) argue that anxiety is a response in the form of fear and worry that arises from uncertainty in facing a situation. In line with this, Utami and Musyarofah (2021) define anxiety as an individual's psychological and physiological response to a situation that is perceived as a threat. The factors that cause anxiety can be classified into internal and external factors. External factors are related to threats to the fulfillment of basic needs and individual comfort, while internal factors include the ability to manage stress, level of education, economic status, health conditions, personality characteristics, age, and level of knowledge. One condition that has the potential to cause anxiety is medical procedures, including cesarean section.

METHODS

Study Design and Setting

This study used a correlative analytical design with a cross-sectional approach. A cross-sectional design was chosen to analyze the relationship between patients' knowledge levels and preoperative

anxiety at a specific point in time. This study was conducted in the Operating Room of Karunia Kasih Hospital in Bekasi, Indonesia, from November to December 2025. The Operating Room was chosen because of its critical environment and the psychological impact experienced by preoperative patients.

Population and Sample

The population in this study consisted of pregnant women scheduled for cesarean section in the operating room at Karunia Kasih Hospital during November-December 2025. Total sampling was applied, so that all pregnant women who met the criteria were included as respondents. The final sample consisted of 48 respondents. Inclusion criteria included pregnant women scheduled for cesarean section at Karunia Kasih Hospital, pregnant women scheduled for cesarean section who were willing to be respondents and had signed informed consent, and pregnant women scheduled for cesarean section who were conscious and cooperative so that they could fill out the questionnaire. Exclusion criteria included pregnant women who did not plan to undergo a cesarean section at Karunia Kasih Hospital, pregnant women with planned cesarean sections who were unwilling to be respondents, and pregnant women with planned cesarean sections who were unconscious and uncooperative. The total sampling technique was chosen to ensure full representation of the available population and minimize sampling bias.

Instrumentss

Data were collected using a structured questionnaire consisting of three sections. The first section covered demographic characteristics such as age, education, and parity status. Anxiety levels were measured using a combination of the Hamilton Anxiety Rating Scale (HARS) and the State-Trait Anxiety Inventory (STAI), which consisted of 17 items assessing psychological and somatic symptoms of anxiety. The HARS and STAI instruments are widely used in clinical and nursing research, and they demonstrate high reliability with Cronbach's Alpha values of 0.93 for both instruments.

The level of knowledge was assessed using a modified version of objective questions in the form of multiple choice. This questionnaire consisted of 15 items that were assessed based on 3 categories, namely “good”, ‘fair’ and “poor”. A higher total score reflected good knowledge, while a lower total score reflected a lack of knowledge in patients.

Data Collection Procedure

Before data collection, ethical approval and institutional permission were obtained from Karunia Kasih Hospital in Bekasi. Eligible respondents were identified based on inclusion criteria and given an explanation of the study objectives, procedures, and ethical considerations. Informed written consent was obtained from all respondents before they completed the questionnaire.

Respondents were asked to complete the questionnaire independently, and researchers were available to provide clarification if necessary. Data collection was conducted at a predetermined location to ensure respondent privacy. All completed questionnaires were then checked for completeness before entering the data input process.

Data Analysis

Data analysis was performed using SPSS version 25. Descriptive statistics were used to summarize the characteristics of respondents, their anxiety levels, and their knowledge levels. Univariate analysis was performed to describe the distribution of each variable. Bivariate analysis was performed using the Chi-Square test to examine the relationship between patients' knowledge levels and preoperative anxiety. The significance level of the data analysis was 0.05, with a p-value < 0.05 considered statistically significant, indicating a meaningful relationship between the variables studied.

Ethical Considerations

This study adheres to ethical principles in research involving human subjects, including informed consent, beneficence, non-maleficence, justice, and confidentiality. Participants were informed that their participation was voluntary and that they could withdraw from the study at any time without consequences. Respondent anonymity was maintained by using codes instead of personal identities.

RESULTS AND DISCUSSION

A total of 48 respondents who were scheduled to undergo cesarean section surgery in the operating room of Karunia Kasih Hospital in Bekasi participated in this study. All respondents completed

the questionnaire and were included in the final analysis.

Respondent Characteristics

Table 1. Respondent Characteristics

No	Demographic Characteristics of Respondents	Category	F	%
1.	Age	<20 years	1	2,0
		20-30 years	26	54,2
		>30 years	21	43,8
2.	Level of Education	Junior High School	3	6,3
		High School	35	72,9
		Higher Education	10	20,8
3.	Parity Status	First Time Mother	16	33,3
		Multigravida	32	66,7
		Total	48	100,0

Most respondents were aged 20-30 years old, totaling 26 respondents (54.2%), and the most common educational level among respondents was high school, totaling 35 respondents (72.9%). The most common parity status among respondents was multigravida, meaning that the respondents had been pregnant more than once, totaling 32 respondents (66.7%).

Respondents' Level Of Knowledge

Table 2. Respondents' Level Of Knowledge

No	Level of Knowledge	Frequency of Respondents	%
1.	Lack of Knowledge	31	64,6
2.	Good Knowledge	17	35,4
	Total	48	100,0

According to the results of the data analysis, 31 respondents (64.6%) had insufficient knowledge, while 17 respondents (35.4%) had good knowledge.

Anxiety Before a Caesarean Section

Table 3. Anxiety Before a Caesarean Section

No	Level of Anxiety	Respondent Frequency	%
1.	Anxious	30	62,5
2.	Not Anxious	18	37,5
	Total	48	100,0

From the analysis of the above data, it was found that of the 48 respondents, 30 respondents (62.5%)

experienced anxiety prior to their cesarean section, while 18 respondents (37.5%) did not experience anxiety prior to their cesarean section.

The Relationship Between Patient Knowledge Level and Preoperative Anxiety

Table 4. The Relationship Between Patient Knowledge Level and Preoperativ Anxiety

Level of Knowledge	Level of Anxiety			OR (95%CI)	*P-Value*
	Anxious n(%)	Not Anxious n(%)	Total n(%)		
Lack of Knowledge	23 (74,2%)	8 (25,8%)	31 (100,0%)		
Good Knowledge	7 (41,2%)	10 (58,8%)	17 (100,0%)	4,107 (1,168-14,436)	0,051
Total	30 (62,5%)	18 (37,5%)	48 (100,0%)		

Bivariate analysis showed a significant relationship between patients' knowledge level and preoperative anxiety. Respondents with low knowledge levels tended to experience anxiety. On the other hand, respondents with sufficient knowledge did not experience preoperative anxiety. Statistical tests confirmed that this relationship was significant between patients' knowledge level and preoperative anxiety in the operating room.

Discussion

The findings of this study indicate a significant relationship between the level of patient knowledge and preoperative anxiety. Most respondents reported feeling less anxious about a cesarean section if they had a higher level of knowledge or more knowledge about the cesarean section procedure. These results show that patients consider surgery to be a frightening procedure because of the equipment, room, and special procedures involved. Preoperative patients experience feelings of anxiety and tension characterized by anxiety, fear of their own thoughts, muscle pain, cold sweats, lethargy, and inability to rest peacefully. This can occur due to a lack of knowledge and experience regarding the things that will be faced during surgery. The results of this study are in line with research conducted by Muzayyana, Alhidayah, and Fania Oliii (2024), which states that there is a relationship between good knowledge that reduces maternal anxiety (52.5%) and good knowledge that increases maternal anxiety (0.0%). Meanwhile, 10% of patients with insufficient knowledge applied non-anxious maternal anxiety, and 37.5% of patients with insufficient knowledge applied anxious maternal anxiety. Preoperative health education can help patients and families identify their concerns. Nurses can then plan nursing interventions and supportive care to reduce patients' anxiety levels. Health education is essentially an activity to convey health messages to the community, groups, or individuals to obtain knowledge about good health, so that this knowledge is expected to influence behavioral changes for the better.

This study is also in line with research conducted by Dedi Fatrida and Arif Irpan (2023), which found a significant relationship between pregnant women's knowledge about cesarean section and preoperative anxiety in cesarean section patients. Patient anxiety facing preoperative surgery is anxiety about problems ahead of the surgery, which is an unpleasant feeling and a normal reaction to situations that cause stress and conflict. It is subjective and arises because individuals feel they are facing tension. The preoperative situation causes

individuals to experience anxiety, and the symptoms will always be apparent as long as the situation exists. The proportion of respondents who experienced preoperative anxiety in this study shows that a high level of knowledge is needed in situations like this. Respondents need emotional support, reassurance, and the opportunity to ask questions in such situations. Effective communication by nurses and other health workers plays a critical role in meeting these needs and reducing psychological distress. Caring behavior towards patients undergoing cesarean section, therapeutic communication between health workers and respondents, and a high level of curiosity among respondents have been shown to reduce preoperative anxiety levels due to increased knowledge among respondents.

Although this study provides valuable insights, several limitations must be acknowledged. The use of a cross-sectional design limits the ability to determine a causal relationship between patient knowledge levels and preoperative anxiety. In addition, the relatively small sample size and single hospital setting may limit the generalizability of the findings. Further research is recommended using a longitudinal or experimental design with a larger and more diverse sample to further explore the impact of patient knowledge on preoperative anxiety in the operating room.

Overall, the findings of this study emphasize the importance of addressing patient knowledge as part of nursing interventions. Improving communication strategies and fostering patient curiosity and empathy can help reduce preoperative anxiety and improve the quality of therapeutic communication among medical personnel in the operating room environment.

Conflict of interest

All authors declare that there are no conflicts of interest.

Availability of data and materials

The agreement to keep respondent data confidential prevents us from sharing that data, therefore the dataset cannot be shared.

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