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JURNAL KEPERAWATAN KOMPREHENSIF	VOL. 8	NO. 3	Page 294 - 432	Bandung July 2022	ISSN 2354-8428 e-ISSN 2598-8727
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Research Article

Implementation of Fetal Welfare Monitoring with CTG in Third Trimester Pregnant Women at Gatot Soebroto Hospital Jakarta

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Received : 06/07/2022

Revised : 29/07/2022

Accepted : 30/07/2022

Online : 31/07/2022

Published : 31/07/2022

Abstract

Aims: This study aims to determine the implementation of fetal welfare monitoring in pregnant women in the III trimester carried out by midwives through the CTG / KTG examination at Gatot Soebroto Hospital Jakarta in 2022.

Methods: The Cross-Sectional research design was utilized in this study, and the sample size was 35 people. Chi-square was used for univariate and bivariate analysis.

Results: This study found that the variables related to implementing fetal welfare examinations using CTG were knowledgeable ($p=0.000$). In contrast, the unrelated variables were age ($p = 0.135$), education ($p=0.752$), and the length of service life of the value ($p=0.136$).

Conclusion: Relationship between knowledge and the implementation of fetal welfare monitoring using CTG / KTG in pregnant women of the III trimester, then midwives need to improve knowledge and skills to support their competence of midwives, through training, seminars, and education to a higher level.

Keywords:

CTG, three-trimester pregnancy, knowledge

INTRODUCTION

Pregnancy is a process that lasts from the moment of fertilization (conception) to the beginning of labor and delivery. Pregnancy is a natural process that involves a woman's ovaries and uterus cooperating to create a growing embryo (1). Unfortunately, perinatal death is still a problem in developing countries, including Indonesia (2).

Based on SDKI 2017 data, the infant mortality rate is 24/1000 live births. With the global target of SDG 2030 AKB 12/1000 KH, AKN is 7/1000KH. Monitoring fetal well-being is necessary surveillance for the fetus during pregnancy and childbirth. One prominent cause of perinatal mortality is

the problem of intra-uterine hypoxia (3). The quality of health services and supportive technology make the mother's hope for childbirth normal. There are many ways to monitor the fetus's well-being. An example of technology monitoring is monitoring fetal well-being using ultrasound and KTG.

Prenatal monitoring for fetal asphyxia seeks to detect the condition before irreversible brain damage results from inadequate blood gas exchange. Intermittent auscultation, cardiotocography (KTG), amniotic fluid color and volume, fetal blood collection, biophysical profile evaluation, fetal head caput creation, and many others are among the modern diagnostic tools available today (4).

KTG examination is generally carried out with external monitoring, which is considered safe and does not endanger the condition of the mother or fetus. External monitoring uses two transducers, namely an ultrasound probe in the area with the loudest fetal pulse sound and a tocodynamometer on the uterine fundus. The KTG examination is generally done for 20 minutes, and the mother is asked to minimize movement during the procedure. The readings of the KTG results include baseline heart rate, variability, acceleration, and deceleration (5).

(6) states that electronic fetal monitoring is an observational practice in modern obstetric care and serves aspects of medicolegal cases involving the management of childbirth and childbirth. The interpretation of the cardiotocograph (CTG) produced by such monitors is a skill needed by those who care for pregnant women. Studies have shown that most 'experts' do not monitor CTG consistently in a way when compared to other experts or themselves. However, it has also been shown that training can improve consistency.

According to research in South Africa, cartographic knowledge remains a challenge for midwife practice (7). The study findings show that midwives lack knowledge of CTG interpretation. The limited understanding of midwife CTG/KTG in the Kwazulu-Natal general hospital may be due to the lack of training. More than half of the participants (70%) indicated the need for training. Clinical experience and prolonged exposure to regular use of CTG in the delivery period do not seem to positively influence the level of midwives' knowledge. Interpretation and management of CTG is a complex task that requires a good understanding of DJJ patterns, fetal physiology, and intrapartum management, as applied to specifics to each patient's clinical outcomes.

Many factors affect the implementation of fetal well-being monitoring using CTG,

including individual competence, organizational support, and management support. This personal competence is seen in the ability and skill to do work (8); three variables affect a person's performance: individual, organizational, and psychological. Personal factors include abilities and skills, family background, social level, experience, and demographic characteristics. Psychological factors are perception, attitude, personality, and motivation, while organizational factors include resources, leadership, imbalance, structure, and job design (8). Therefore, research is needed to determine the midwives' implementation of fetal welfare monitoring with CTG / KTG, starting with tool preparation, execution, tidying up the tool, interpreting the CTG / KTG examination results, and making documentation.

METHODS

This research used the Cross-Sectional method. The sample in this study amounted to 35 respondents. The sampling technique used total sampling. The analysis was carried out using univariate and bivariate methods using chi-square.

RESULTS

According to standard operating procedure, the study results found that respondents who monitored fetal welfare with CTG/KTG were 26 (74.3%) and 9 (25.7%). Most respondents were old age (>30 years), as many as 29 (82.9%), and the least were midwives with young age, as many as 6 (17.1%). Most respondents were 32 (91.4%) Diplomas three midwifery education, and the least were midwives with D4/S1/Midwifery Profession education, as many as 3 (8.6%). Most respondents were respondents with a length of work >10 years, as many as 26 (74.3%), and the least number of midwives with a working period of 1-10 years was 9 (25.7%). Finally, most respondents are those with high knowledge, as many as 24

(68.6%), and the least are respondents with low education, namely 11 (31.4%).

Based on the standard operating procedure, respondents with the eldest age did not monitor fetal welfare with CTG/KTG in third-trimester pregnant women as many as 6 (20.7%), and among 6 young respondents, all 50% each did not comply with the standard operating procedure 3 and according to standard operating procedure 3. The results of statistical tests with Chi-Square obtained p-value = 0.135 means $p > (0.05)$. The hypothesis is not proven, but it can be concluded that there is no relationship between age and the implementation of fetal welfare monitoring with CTG / KTG in third Trimester pregnant women at Gatot Hospital Soebroto Jakarta in 2022. According to the standard operating procedure, monitoring fetal welfare with CTG/KTG in the Third Trimester of pregnant women has as many as 24 respondents (75.0%) and 2 (66.7%).

The results of statistical tests with Chi-Square obtained p-value = 0.752 means $p > (0.05)$. The hypothesis is not proven, but it can be concluded that there is no relationship between education and the implementation of monitoring fetal welfare

with CTG / KTG in third Trimester pregnant women at Gatot Hospital Soebroto Jakarta in 2022.

Respondents whose working period is between 10 years who carry out monitoring of fetal welfare using CTG/KTG in third-trimester pregnant women and do not comply with standard operating procedures are 4 (44.4%) compared to respondents whose length of service is >10 years who monitor fetal welfare by using CTG/KTG in third-trimester pregnant women and not according to standard operating procedure, namely 5 (19.2%).

The results of statistical tests with Chi-Square obtained a $p = 0.136$, which means $p > (0.05)$. It can be concluded that there is no relationship between the length of service and the implementation of monitoring of fetal welfare with CTG / KTG in third Trimester pregnant women at Gatot Soebroto Hospital Jakarta in 2022.

Respondents who have low knowledge who monitor fetal welfare using CTG/KTG in third-trimester pregnant women and do not comply with standard operating procedures are 8 (72.7%) compared to respondents who have high knowledge who carry out monitoring.

Table. 1

Frequency Distribution of P implementation of Fetal Welfare Monitoring with CTG / KTG in Pregnant Women in the Third Trimester at Gatot Soebroto Hospital Jakarta in 2022

Implementation of fetal welfare monitoring with CTG / KTG in pregnant women III Trimester	Frequency	%
Standard Operating Procedure compliant	26	74.3
Not Standard Operating Procedure compliant	9	25,7
Total	35	100,0

Table. 2

Age Frequency Distribution of Fetal Welfare Monitoring with CTG / KTG in Third Trimester Pregnant Women at Gatot Soebroto Hospital Jakarta in 2022

Age	Frequency	%
Young Age (≤ 30 years old)	6	17,1
Old Age (> 30 years old)	29	82,9
Total	35	100,0

Table. 3
Frequency Distribution of Education implementation of Fetal Welfare Monitoring with CTG / KTG in Pregnant Women in the III Trimester at Gatot Soebroto Hospital Jakarta in 2022

Education	Frequency	%
D4/S1 Midwifery+ Profession	3	8,6
Diploma 3 in Midwifery	32	91,4
Total	35	100,0

Table. 4
Frequency Distribution of The Duration of Work Period Of Fetal Welfare Monitoring With CTG / KTG In Pregnant Women Iii Trimester At RSPAD Gatot Soebroto Jakarta in 2022

Length of Service	Frequency	%
> 10 years	26	74,3
≤ 10 Years	9	25,7
Total	35	100,0

Table. 5
Distribution of Knowledge Frequency of Implementation of Fetal Welfare Monitoring with CTG / KTG in Pregnant Women in the III Trimester at Gatot Soebroto Hospital Jakarta in 2022

Knowledge	Frequency	%
Tall	24	68,6
Low	11	31,4
Total	35	100,0

Table. 6
The relationship between age and the Implementation of Fetal Welfare Monitoring with CTG / KTG in Pregnant Women in the Third Trimester at Gatot Soebroto Hospital Jakarta in 2022

Variable	Implementation of fetal welfare monitoring with CTG / KTG in Pregnant Women iii Trimester				Total	P-Value	OR (CI 95%)	
	Not Standard Operating Procedure compliant		STANDARD OPERATING PROCEDURE compliant					
	n	%	n	%				
Age Old (> 30 years old)	6	20,7	23	79,3	29	100	0,135	0,261
Age Young (≤ 30 years old)	3	50,0	3	50,0	6	100		(0,042 -1,63)

Table. 7
The relationship between education and the Implementation of Fetal Welfare Monitoring with CTG / KTG in Third Trimester Pregnant Women at Gatot Soebroto Hospital Jakarta in 2022

Variable	Implementation of fetal welfare monitoring with CTG / KTG in Pregnant Women iii Trimester				Total		P-Value	OR (CI 95%)
	Not Standard Operating Procedure compliant		STANDARD OPERATING PROCEDURE compliant					
	n	%	n	%	n	%		
Education								
Diploma 3 in Midwifery D4/S1	8	25,0	24	75,0	32	100	0,752	0,667
Midwifery+ Profession	1	33,3	2	66,7	3	100		(0,53-8,372)

Table. 8
The relationship between the length of service and the implementation of fetal welfare monitoring with CTG / KTG in pregnant women in the THIRD Trimester at Gatot Soebroto Hospital Jakarta in 2022

Variable	Implementation of fetal welfare monitoring with CTG / KTG in Pregnant Women iii Trimester				Total		P-Value	OR (CI 95%)
	Not Standard Operating Procedure compliant		STANDARD OPERATING PROCEDURE compliant					
	n	%	n	%	n	%		
Length of service life								
≤10 Years	4	44,4	5	55,6	9	100	0,136	3,36
> 10 years	5	19,2	21	80,8	26	100		(0,654-17,27)

Table.9
The relationship between knowledge and the Implementation of Fetal Welfare Monitoring with CTG / KTG in Pregnant Women in the III Trimester at Gatot Soebroto Hospital Jakarta in 2022

Variable	Implementation of fetal welfare monitoring with CTG / KTG in Pregnant Women iii Trimester				Total		P-Value	OR (CI 95%)
	Not Standard Operating Procedure compliant		STANDARD OPERATING PROCEDURE compliant					
	n	%	n	%	n	%		
Knowledge								
Low	8	72,7	3	27,3	11	100	0,000	61,3
Tall	1	4,2	23	95,8	24	100		(5,5-667,3)

DISCUSSION

1. Implementation of Fetal Welfare Monitoring with CTG / KTG in Pregnant Women in the III Trimester

Monitoring of fetal welfare is part of Ante Natal Care care carried out at gestational age more than 30 weeks to reduce the risk of urethroplacental insufficiency and direct monitoring of fetal welfare has a direct effect on reducing fetal mortality.

CTG/KTG examination is a method of examining fetal welfare using a tool and is a non-invasive procedure. In KTG/CTG there are three parameters monitored at the same time, namely fetal heart rate (DJJ), uterine contractions, and fetal movement. The KTG equipment must be maintained properly, lest the cables are damaged due to frequent removal and installation or errors in the maintenance of the tocometer and cardiometer equipment. A person who is responsible for the maintenance and operation of the KTG is required, as well as training in interpreting the results of the KTG. At the time of the GTC examination, the patient's position should not be supine, but must be half sitting or lying on his side.

The authority of the midwife is regulated in the Minister of Health of the Republic of Indonesia No. 28 of 2017 the second part is stated in article 18 that in the implementation of midwifery practice, midwives have the authority to provide maternal health services, child health services and reproductive health services as well as family planning. Article 19 paragraphs (9,10) of the Minister of Health of the Republic of Indonesia No. 28 of 2017 explains that maternal health as referred to in Article 18 is provided during the pre-pregnancy period, pregnancy period, delivery period, postpartum period, breastfeeding period, and the period between two pregnancies.

In addition to the authority described in Article 18, midwives also have the authority to provide services based on assignments from the government or health agencies in accordance with their workplaces that have been adapted to the needs and delegation of authority to carry out health service actions as mandated by doctors, here including being given the authority to carry out examinations. CTG in pregnant women according to the SOP that has been compiled.

In the opinion of the researcher, the majority of midwives at Gatot Soebroto RSPAD carried out fetal welfare checks using CTG according to the SOP due to the high knowledge of the midwife, the support from management with the SOP for CTG installation and supported by high individual competence which can be seen in the ability and skills to do work.

The researcher's advice to the management is to continue to improve the standard of conducting examinations on pregnant women and supervision of midwives in carrying out their work, as well as suggestions for midwives is to increase knowledge through education or training and seminars related to the competence of midwives.

2. The relationship between age and the implementation of Fetal Welfare Monitoring with CTG / KTG in Pregnant Women in the III Trimester

The age of 20-30 years is the first period of introduction to the adult world, a person in this period will start looking for a place in the world of work and the world of social relations. While age > 30 years based on the period of life, this age becomes important because in this period the structure of life becomes more fixed and stable. The older a person is, the more mature a person's abilities and strengths will be in thinking and working. Someone who is more mature has a tendency to be more trusted than someone who is not yet

mature enough. This is as a result of the experience of maturity of his soul.

According to (11) age is a unit for assessing and knowing the long existence of an object or living thing, both living and dead. According to (12) explains that the older a person is, the more experience they will gain during their lifetime, so that in making decisions or actions they will be calmer because they are experienced. On the other hand, the younger a person is, the less experience they have during their lifetime, thus influencing the actions they take. Age has a close relationship with the aspect of work, the relationship between age, and the level of psychological maturity shows maturity in the sense that individuals become wiser in making decisions and the more experience they gain can also guide and direct younger people according to their abilities. As a person's age increases, there will be changes in psychological and psychological aspects (mental) and indirectly, a person's level of thinking will be more mature and mature. So that midwives know the implementation of monitoring fetal welfare with CTG in third trimester pregnant women. On the other hand, the younger a person is, the less experience and knowledge they gain in carrying out monitoring of fetal well-being with CTG in third trimester pregnant women. Midwives who are relatively young need to receive training, especially the implementation of monitoring fetal welfare with CTG/KTG in third trimester pregnant women. In addition, it is important for senior midwives who are relatively older to provide guidance to younger midwives.

In the opinion of researchers, age does not affect the implementation of monitoring fetal welfare with CTG / KTG in third trimester pregnant women, the younger a person's age is, the less experience and knowledge gained during his life, so that it affects an action taken. Age has a close relationship with the

aspect of work, the relationship between age, and the level of psychological maturity shows maturity in the sense that individuals become wiser in making decisions and the more experience they gain can also guide and direct younger people according to their abilities.

3. Relationship between Education and the Implementation of Fetal Welfare Monitoring with CTG / KTG in Pregnant Women in the III Trimester

According to (12), the thought process is an important part in the formation of one's actions. Factors that affect a person's cognitive process is the education he gets during his life. Education is an effort made during life to improve the abilities and personality acquired inside and outside school that lasts a lifetime.

(13) state that a high level of education can make a person more capable and ready to accept responsibility.

According to (14) knowledge is related to a person's education where high education, then the knowledge will be in accordance with the education received. It should be emphasized that someone who has a low level of education is not followed by a low level of knowledge. Knowledge is not only obtained through school but can be obtained by learning from own experience or from others, the higher a person's level of education will affect his level of ability because the easier it is for him to develop his knowledge about the implementation of monitoring fetal welfare with ctg/ktg in pregnant women and applied in the world of work and services to patients and the community, so it is important for midwives to increase the level of education by continuing to S1 Midwifery and the midwifery profession so that their abilities are further increased. With the increase in education, it is recommended that midwives also apply the knowledge and skills acquired during their education. This is done in order to

improve services to mothers and children.

According to researchers, education has no effect on the implementation of monitoring fetal welfare with CTG/KTG in third trimester pregnant women because the competence to carry out monitoring of fetal welfare using CTG/KTG in accordance with SOPs for pregnant women can be carried out by midwives with a Diploma 3 Midwifery education background, and also with the majority of the working period of midwives who carry out monitoring of fetal welfare using CTG/KTG the majority are above 10 years, where experience also greatly affects knowledge, the longer a person works, the more experience he has. Experience will have an effect in increasing one's knowledge, because one's knowledge is also obtained from experience.

4. Relationship between length of service and implementation of fetal welfare monitoring with CTG / KTG in pregnant women in Trimester III

(15) Argues that people who have a longer working period sometimes decrease their productivity due to boredom. Experience is a combination of knowledge and one's behavior where knowledge results from knowing after people have sensed a certain object while behavior is all forms of responses from individuals to their environment. The length of work is synonymous with experience, the longer a person's work, the more experience he has. Experience will have an effect on increasing one's knowledge, because one's knowledge is also obtained from experience.

Workers with long or dominant tenures tend to have their actions and thought patterns imitated or noticed by new midwives, this will make midwives with new tenures more adaptable to the actions to be taken and can choose whether their actions are appropriate or not. with standard procedures set by the

hospital. Midwives can carry out monitoring of Fetal Welfare with CTG/KTG on pregnant women in accordance with existing procedures and make midwives obedient.

According to the researcher, the length of work period does not affect the implementation of monitoring fetal welfare with CTG/KTG in third trimester pregnant women because midwives whose working period is >10 years are not guaranteed to always carry out monitoring of fetal welfare with CTG/KTG in pregnant women in accordance with SOPs, because there are several things that can affect midwives in implementing monitoring of fetal welfare with CTG / KTG in pregnant women including motivation, midwives with longer working hours sometimes their productivity decreases due to boredom.

Researchers suggest to the hospital management to carry out periodic hospital management supervision as part of supervision, and it is necessary to appoint as permanent employees for new midwives in order to increase motivation and morale.

5. The relationship between knowledge and the Implementation of Fetal Welfare Monitoring with CTG / KTG in Pregnant Women iii Trimester

Knowledge is the result of remembering something, including recalling events that have been experienced either intentionally or unintentionally and this occurs after people make contact or observations of a certain object (16). The knowledge of the midwife about the SOP for the implementation of the monitoring of fetal welfare with CTG/KTG for pregnant women is a knowledge that must be possessed by a midwife before carrying out the action, so it is hoped that in its implementation there will be no procedural errors.

Midwives who have good knowledge will be able to take the right actions in accordance with existing rules and SOPs.



This is because knowledge is the basis for forming one's behavior as according to (14), knowledge or cognitive is a very important domain in shaping one's actions (over behavior).

According to (12) knowledge is the result of human sensing, or the result of someone knowing about objects through their senses (eyes, nose, ears, and so on). According to (17) the level of knowledge of workers is obtained from formal education, length of work, training, observation and reading. Workers who have good attitudes are influenced by knowledge, because according to (14) knowledge is an operational form of human behavior by itself. the main problem, namely input (input), process, output or output. Input includes the subject or learning objectives (students) with their background. The process includes changes in the ability of the subject of study, teachers, learning facilities, and methods used. While the output is the result of learning itself, which is a new ability or a change in new behavior on the subject of learning. The change is based on the addition of knowledge, attitudes and skills. These changes or additions are strongly influenced by experience, beliefs, facilities, facilities and socio-culture. In addition, motivational factors, psychology, rewards and characteristics of individuals that play a role in changing these behaviors (18).

According to researchers, knowledge relates to the implementation of monitoring fetal welfare using CTG because midwives who have good knowledge will experience changes in behavior including trying to find out how to carry out fetal monitoring using CTG correctly and according to SOPs. Midwives who know and are aware of the impact if the implementation is not in accordance with the SOP will try their best to implement it in accordance with the applicable SOP.

So the researcher's advice for midwives is to continue to improve knowledge and skills in accordance with the competence of midwives, and for the management.

CONCLUSION

There is a relationship between knowledge and the implementation of Fetal Welfare Monitoring with CTG/KTG in third trimester pregnant women, there is no relationship between age, education and length of service with the implementation of fetal welfare monitoring with CTG/KTG in third trimester pregnant women.

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