Comparative Analysis of Student Understanding Levels Using Lecture, Group Discussion and Information Technology- Based Methods of Postpartum Care Education at 'Aisyiyah University Surakarta

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ABSTRACT

Postpartum care is one of the most essential subjects in midwifery program which student needs to obtain. This provides students with abilities based on concepts, attitudes, skills and the results of critical thinking as well as an evidence base in practice. This study aims to analyze the comparison of students' understanding levels using information technology-based, lecture and group discussion methods about postpartum care education at 'aisyiyah Surakarta University, especially during the Covid-19 pandemic. This study was quantitative design and the method used was data collection ,form of questionnaires with a total of 37 students as respondents. This study was analyzed by descriptive statistical analysis. Calculation the level of understanding using a Likert Scale, Validity Test (T-count, T-table) and Reliability Test, to find out the results of a comparison of learning models with lecture, group discussion and information technology-based methods. Results : The level of understanding using the lecture method is 81%, 94% in the group discussion method and 100% in information technology-based methods. Conclusion : the learning model which is most in demand by students is using information technology-based methods..

INTRODUCTION

Postpartum care is part of the main competency of a midwife. The postpartum period is one of the components in the life cycle of the female reproductive cycle. The postpartum period is the period that begins after the placenta is born and ends when the reproductive organs return to their pre-pregnancy state (Prawirohardjo, 2009). (WHO, 2013) mentioned that a few days to weeks after delivery is a critical period for the life of mothers and newborns. Major changes occur during this period that determine the well-being of the mother and newborn. Even so, many are still ignorant of the postpartum period. Lack of proper treatment results in poor health and even death. The lack of skills of health workers is also an influence. Most maternal and child deaths occur during this period.

Midwives are one of the spearheads in implementing women's health services throughout the life cycle. Thus, the professionalism of midwives is an essential

point in women's empowerment programs. The development of science and technology has significantly increased the community's need for health services, especially in midwifery services as an effort to prevent the occurrence of maternal and infant mortality rate. Therefore, improving the quality of human resources needs to be done, as to create competent midwives. One of them is by holding quality midwifery education so that it can produce midwives who have comprehensive and professional capabilities (Diana, 2017). Midwifery care competencies can be started from existing learning in educational institutions. Through the right learning process for students, especially midwifery students, all aspects needed by the community related to health services which are then integrated into learning can be fulfilled (Drake, 2013).

Some of the obstacles and challenges encountered today are government policies related to learning that must be carried out online. This policy was made due to the COVID-19 pandemic which in the past two years has become a highlight issue throughout the world. Regarding (Sun, Tang and Zuo, 2020) this pandemic requires that all countries implement distance education for all elements of

education such as students, teachers to parents. This requires educational institutions to be able to innovate and adapt in line of using available technology, as an effort to support the process of learning (Ahmed *et al.*, 2020). Thus, the use of technology in preparation is currently needed for educators and students as media for transferring knowledge (Gunawan, Suranti and Fathoroni, 2020).

Data analysis was defined as a form of mindset to perform, process the data so it can be used as an information. Also, the characteristics of data can be answering the problems related to research (Rijali, 2019).

Media or methods in teaching and learning process has a significant meaning because in this activity the lack of clarity in the material presented can be assisted with presents the media as an intermediary (Puspitarini and Hanif, 2019). The complexity of the material conveyed to student learning can be simplified with the help of the media. Media can represent what is lacking the teacher can say through certain words or sentences. Even the abstractness of the material can be concretized with the presence of the media (Sutarto, Sari and Fathurrochman, 2020). By implementing strategies and media good learning is expected to arouse the interest and motivation of participants

students both in the form of methods and approaches through media aids with based on the phase of learning activities.

In this study, we carried out a comparative analysis regarding the level of understanding of students using lecture learning methods, group discussion learning methods and information technology-based methods regarding postpartum midwifery care. Analysis of the level of understanding of students, especially the Postpartum Midwifery Care Course, 4th semester midwifery students at 'Aisyiyah University, Surakarta.

METHODS AND MATERIALS

This study carried out several analyzes related to the level of student understanding using lecture, group discussion and information technology-based methods about postpartum care course. Comparative analysis of students' level of understanding using lecture, group discussion and information technology-based methods are converted using a likert rating scale. The likert scale was used to assess attitudes, opinions, and perceptions of social phenomena then translated into variable indicators (Ramadhani, Triyanto and Muhammad, 2019). It has several ratings in determining the weight of the assessment, which can be seen in table 1.

This study was quantitative design. The method used was data collection, form of questionnaires, related to midwifery care material/competencies using lecture, group discussion and information technology-based methods with a total of 37 students as respondents. Calculation the level of understanding using a likert scale, validity and reliability test, to assess the comparison of learning models with lecture, group discussion and information technology-based methods.

Table 1. Likert Scale Rating

Scale	Stage
1	Strongly disagree
2	Disagree
3	Less disagree
4	Agree
5	Strongly Agree

RESULTS AND DISCUSSION

Calculation of validity test for questionnaire of student understanding levels using lecture, group discussion and information-technology based method. Based on observation on r-Table, the value of the sample (N) was 0.3810. It showed that all instrumens, starting from the subject matter variable consisted of Course_1, Course_2, Course_3, Course_4, Course_5, Course_6, Course_7, Course_8, Course_9, Course_10, Course_11, Course_12, Course_13, Course_14, Course_15, Course_16, produces a value

(r-Count) > (r-Table). It means that all instruments in this study were valid.

3.1. Reliability Test

The following was the result of the calculation of the recapitulation of the reliability test of the student comprehension level questionnaire.

Table 2. Relibility Test of the student comprehension.

Cronbach's Alpha	N of Items
.763	17

The outcomes showed that all values from the student perception variable was produced cronbach's alpha value > 0.3810. It means that all instruments have a high degree of reliability.

3.2. Results of Understanding Level Answers

The recapitulation results for calculating answers use a Likert Scale. The results based on the method used to analyze students understanding levels are as follows:

a. The results of the number of answers to the level of understanding using the Lecture Method

b. The results of the number of answers to the level of understanding using the group discussion method.

c. The results of the number of answers to the level of understanding using the information technology-based method

Table 3. Analysis of students understanding levels using the lecture method

Courses	Score					Total	Interval
	1	2	3	4	5		
1	0	0	15	124	5	144	**78%**
2	0	0	21	112	10	143	**77%**
3	0	0	6	136	5	147	**79%**
…	…	…	…	…	…	…	…
15	0	0	9	132	5	146	**79%**
16	2	0	15	116	5	138	**75%**

Table 4. Analysis of students understanding levels using the group discussion method

Courses	Score					Total	Interval
	1	2	3	4	5		
1	0	0	9	128	10	147	**79%**
2	0	0	18	112	15	145	**78%**
3	0	0	12	124	10	146	**79%**
…	…	…	…	…	…	…	…
15	0	0	9	128	10	147	**79%**
16	0	0	15	112	20	147	**79%**

Tabel 5. Analysis of students understanding levels using the information technology-based method

Courses	Score	Total	Interval

	1	2	3	4	5		
1	0	0	9	136	0	145	78%
2	0	0	15	124	5	144	78%
3	0	0	0	140	10	150	81%
…	…	…	…	…	…	…	…
15	0	2	30	104	0	136	74%
16	0	8	33	76	15	132	71%

The interval information can be seen in table 6 and the comparison results of students understanding levels can be seen in table 7. Table 7 shows that students understanding level using lecture, group discussion and information technology-based methods had 0 % of low and strongly low level of comprehension. The student understanding level using lecture method had 19 % of high level of comprehension and 81 % of strongly high level of comprehension. The student understanding levels using group discussion method had 6 % of high level of comprehension and 94 % of strongly high level of comprehension. Whereas, the student understanding level using information technology-based method had 100 % of strongly high level of comprehension.

The graphical model for comparing the student understanding levels using a lecture, group discussion and information technology-based methods can be seen in Figure 1. The results showed that the highest level of student understanding was usingthe information technology-based learning method. There are several types of technology-based methods used in this study, such as community of inquiry using video conferencing or holding discussions on boards; Connectivism such as web browsers, email, social media, zoom, gmeet, YouTube for sharing information and Online Collaborative Learning such as simulations, games or quizzes, animation and e-books. 100% of the sudents has strongly high understanding of postpartum care courses using this method (Suni Astini, 2020). This result is consistent with another study conducted by (Novitasari, 2016) that in teaching and learning activities, the role of information technology is essential because it can help to provide an understanding of the courses to students (Simanjuntak, Endaryono and Balyan, 2020). In addition, applying information technology-based learning method can also provide a more interesting presentation of courses, not monotonous, and facilitate delivery (Jamila, Ahdar and Natsir, 2021)(Lestari, 2018) (Tarigan, 2019).

Meanwhile, student understanding levels using group discussion method learning model has a higher number than the lecture method which the discussion method has some advantages. Another study has come to similar conclusion which some of the advantages of this method are students become more enthusiastic, active and faster to ack about learning activities (Purba, 2020)(Susanti and Yulia, 2021). On the contrary, study has likewise shown that drawback of the discussion method is the perspective of being a teacher, it requires careful preparation in terms of preparation of discussion material, time management and class conditioning (Mahsup, Abdillah and Syaharuddin, 2019) (Nadrah, 2023).

At student understanding levels using the lecture method learning model also has a fairly high value. In connection with study (Fitri and Nurhidayah, 2021) (Anshori, 2019) applying the lecture method was very practical and efficient for teaching that has a lot of teaching courses and becomes a communication tool in conveying it. Moreover, the use of the lecture method also has some disadvantages, one of them is the evaluation of the learning process is

difficult to control because there is no clear achievement, and there is an element of compulsion to listen (Lestari, 2018).

LIMITATIONS

This study relied on likert-scale questionnaires that offer pre-determined responses. Qualitative research that asks open-ended questions is needed to know more deeply about student understanding. A live interview might establish better rapport and elicit more detailed and honest responses.

CONCLUSIONS AND SUGGESTIONS

According to the outcomes of this study, conclussion can be drawn that the students understanding levels using information technolgy-based learning methods has a strongly high level of comprehension. Using information technology-based learning method can also provide a more interesting presentation of courses. So, learning with this model will be more interesting and provide appropriate scientific information.

Future studies may to add the number of respondents and make comparisons between institutions for learning model.

Table 6. Interval Likert Scale Level of Comprehension

Interval %		Author's Perception
0-24,9 %	Strongly Low	Judging from the students

25-49,9 %	Low
50-74,9%	High
75-100%	Strongly High

understanding levels using lecture, group discussion and information technology-based methods

Table 7. Comparison of Student Understanding Level Results

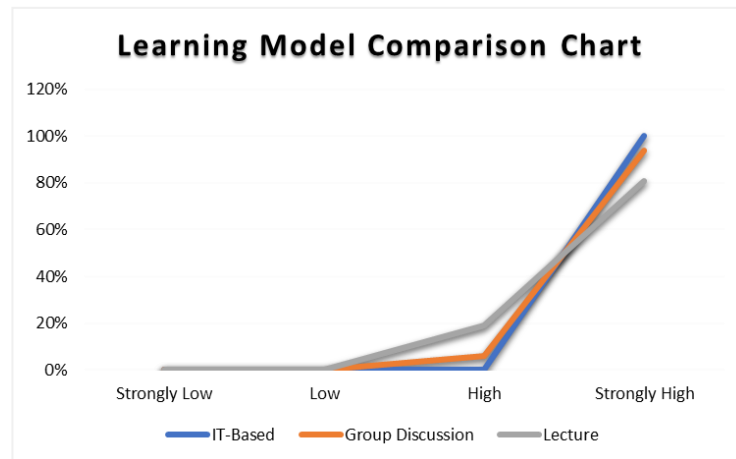| Student Understanding Level Method	Comprehension Scale Level Interval	Result
Lecture	Strongly Low	0
	Low	0
	High	3 (19%)
	Strongly High	13 (81 %)
Group Discussion	Strongly Low	0
	Low	0
	High	1 (6 %)
	Strongly High	15 (94 %)
Information technology-based	Strongly Low	0
	Low	0
	High	0
	Strongly High	16 (100 %)

Figure 1. Learning Model Comparison Chart

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