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ANXIETY LEVEL OF MIDWIFERY CLINICAL STUDENTS DURING COVID-19 PANDEMIC

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Abstract

***Introduction**: Clinical midwifery students experience higher anxiety than preclinical midwifery students during COVID-19 pandemic. The higher level of anxiety is due to pressure in their clinical learning environment. This students during the COVID-19 pandemic. **Method**: This prospective cross-sectional study was conducted on 82 clinical midwifery students at Universitas Airlangga using an online survey. All clinical midwifery students are eligible to participate in this study. We excluded students who had not started clinical studies and students with pre-existing medical or comorbid psychiatric conditions that could explain the pain. This research was conducted in December 2021-January 2022. Information from participants included socio-demographic, clinical learning environment questionnaire, and Hamilton Rating Scale for Anxiety (HRS-A). Univariate and bivariate analysis using Statistical Package of Social Sciences (SPSS) version 16. Statistical tests of contingency coefficients and Spearman's rho were used to connect the independent and dependent variables. **Results**: The study showed that most of the respondents aged 20-27 years (73.2%), in the second semester (76.8%), living in boarding houses/contracts (74.4%), unmarried status (75.6%), the level of family income is very high (68.3%), and the perception of a poor clinical learning environment (51.2%). Participants experienced no anxiety the most (52.4%) and significantly correlated with the age p=0.047, domicile status p=0.076, and clinical learning environment p=0.008. But not their semester p=0.991, marital status p = 0.406, and family income p=0.872. **Conclusion**: These data indicate that age, domicile status, and clinical learning environment contribute to the incidence of anxiety in midwifery clinic students during the COVID-19 pandemic.*

Keywords: anxiety, COVID-19 pandemic, midwifery students

INTRODUCTION

The Coronavirus Disease 2019 (COVID-19) pandemic has created a new atmosphere that impacts everyday life and psychological disorders (Hummel *et al.*, 2021). The impact on psychological disorders is also experienced by students in the health sector, such as medical, midwifery, and nursing students. The prevalence of psychological disorders in medical students is higher in depression, anxiety, and stress than in the general population because of the pressure in the clinical learning environment (*Seetan et al., 2021*). In a previous study in Arabia, medical students in

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the clinical learning phase during the COVID-19 pandemic reported an anxiety level of 27% experiencing mild anxiety and 26% experiencing severe anxiety (*Saddik et al., 2020*). The anxiety rate is higher than the WHO anxiety prevalence, which is 3.6% (*Anindyajati et al., 2021*).

Anxiety is a feeling of excessive worry characterized by restlessness, fatigue, difficulty concentrating, irritability, tension, and sleep disturbances (*Sekartaji et al., 2021*). Anxiety at a moderate level can positively affect the learning process, but it can harm learning at a high level. Anxiety is very influential on academic achievement. In clinical learning, high anxiety can reduce the quality of the clinical learning experience. Anxiety causes a lack of attention, memory, and concentration control, lowering academic performance. Anxiety also causes reduced problem-solving skills in students (*Kusumawati, Prihatiningsih and Prabandari, 2017*).

Anxiety occurs when Corticotropin-releasing hormone (CRF) in the parvocellular neurons of the hypothalamic paraventricular nucleus responds to a threatening stimulus. Vasopressin (AVP) synergizes with CRF in activation of the HPA axis. On the HPA axis, CRF is released from the paraventricular nucleus and acts on receptors in the anterior pituitary to elicit the production and release of adrenocorticotropic hormone (ACTH), which is released systemically and activates glucocorticoid production and release from the adrenal cortex. In humans, the primary stress steroid is cortisol; in mice, it is corticosterone. HPA axis activity is regulated by many other limbic system structures, namely the amygdala, which increases HPA axis activity, and the hippocampus, which suppresses HPA axis activation (*Martin et al., 2009*).

In a previous study, midwifery students experienced 94.4% low anxiety, 4.5% moderate anxiety, and 1% had the potential to experience anxiety during the COVID-19 pandemic (*Sögüt, Dolu and Cangöl, 2020*). A meta-analysis of anxiety during the COVID-19 pandemic shows that gender, age, marital status, and financial stability are socio-demographic factors associated with anxiety symptoms. Several studies suggest that women are at a higher risk of experiencing anxiety during a pandemic, and increased anxiety levels are also influenced by younger age. In most studies, marital status affects anxiety in someone married compared to not

marry. Most studies find that a high-income protective against anxiety during a pandemic (*Lasheras et al., 2020*).

The factors that influence the presence of psychological symptoms in clinical students during the COVID-19 pandemic are not only sociodemography, but several studies have also identified a relationship between the clinical learning environment and anxiety. This study found that the clinical practice learning environment had a significant effect on the stress and anxiety of clinical practice students. When students perceive the clinical learning environment as unfavorable, it will increase anxiety and stress in clinical practice (*Yang and Hee, 2015*).

Addressing health workers' mental and psychosocial health during a pandemic is as important as managing their physical health. Health workers also experience fear, worry, and anxiety during the pandemic period as they face the risk of death. In addition to the impact of the COVID-19 pandemic, midwifery students are one of the groups at risk of experiencing age-related anxiety (*Findyartini and Utami, 2018*). Because there is still a lack of research on the relationship between sociodemography and clinical learning environments for midwifery students in Indonesia during the COVID-19 period, it is necessary to research this topic.

METHODS

A cross-sectional study was conducted among clinical midwifery students of Airlangga University Indonesia during December 2021-January 2022. The sample size was determined using total sampling so that 82 students participated in this study. All clinical midwifery students are eligible to participate in this study. We excluded students who had not started clinical studies and students with pre-existing medical or comorbid psychiatric conditions that could explain the pain. Data collection using Google forms and sent to each respondent via online message. The study used an online questionnaire containing the socio-demographic characteristics of respondents (age, semester of study, domicile status, marital status, and family income), perceptions of the clinical learning environment using a clinical study environment questionnaire (*Findyartini and Utami, 2018*), and anxiety levels during the COVID-19 pandemic using the Hamilton Rating Scale for Anxiety (HRS-A). HRS-A consists of 14 questions with a five-level response scale; each

was graded from zero "no symptoms" to four "very severe symptoms." A statement was added to each question, "Did you experience (anxiety symptoms) during clinical practice during the COVID-19 pandemic?" to measure the anxiety level of students during the COVID-19 pandemic. So that the validity test was carried out again with the results of all questions being declared valid with values ranging from 0.659 and 0.879 and the reliability value of Cronbach's Alpha is 0.94.The score was interpreted as no anxiety (0-14), mild anxiety (14-20), moderate anxiety (21-27), severe anxiety (28-41), very severe anxiety (42-56). Another question about students' perspectives on the clinical learning environment consists of 60 questions. The questions were grouped into six subscales: learning opportunities and engagement, interactions with patients during clinical rotation, communication with colleagues and supervisors, facility and individual treatment, supervision process, self-confidence, and awareness(*Findyartini and Utami, 2018*). The researcher provided additional statements regarding the COVID-19 pandemic in several words in the questionnaire. So that the validity test was carried out again with the results of 57 declared valid questions, namely the values ranged between 0.382 and 0.813 and the reliability value of Cronbach's Alpha was 0.96. The score interpreted as good if the total score T mean ≥ T respondent and bad if the total score T mean ≥ T respondent. Univariate and bivariate analysis using Statistical Package of Social Sciences (SPSS) version 16. Statistical tests of contingency coefficients and Spearman's rho were used to connect the independent and dependent variables. The significance level was set to $p < 0.05$. The research design and ethical considerations were reviewed and approved by Universitas Airlangga Faculty of Dental Medicine Health Research Ethical Clearance Commission number 606/HRECC.FORM/XI/2021. All participants provided their written consent, and their responses and data were kept confidential.

RESULT AND DISCUSSION

Between 17th December 2021- 5th January 2022 89 clinical midwifery students participated in the study. After excluding the students with pre-existing medical or psychiatric comorbid conditions, a total 82 eligible students were identified in this study. The mean age was 25.9 years (SD=5.25), with 2nd-semester students

(76.8%) making up most of the research respondents. Most of the students live in boarding houses (74.4%), unmarried status (75.6%), and have a very high level of family income (68.3%). Most of the respondents (51.2%) described the learning environment as bad regarding the clinical learning environment. In HRS-A, most students did not experience anxiety during the COVID-19 pandemic (52.4%) (Table 1).

Table 1 Sociodemographic prevalence, perception of clinical learning environment, and level of anxiety (n=82)

Variable	Category	Mean	SD	Frekuensi	%
Age	20-27 year	25.99	5.25	60	73.2
	28-35 year			16	19.5
	>35 year			6	7.3
Semester	1			19	23.2
	2			63	76.8
Domicile Status	With family			21	25.6
	Boarding			61	74.4
Marital status	Married			20	24.4
	Not married yet			62	75.6
Family income	Very low			9	11
	Low			7	8.5
	Moderate			2	2.4
	High			8	9.8
	Very high			56	68.3
Clinical learning environment	Good			40	48.8
	Bad			42	51.2
Anxiety level	No			43	52.4
	Mild			17	20.7
	Moderate			11	13.4
	Severe			8	9.8
	Very severe			3	3.7

Anxiety levels during COVID-19 were significantly higher in younger respondents (p=0.047). There is also a significant relationship when the perception of a good and bad learning environment is associated with anxiety levels (p=0.008). There was no significant difference in respondents' level of anxiety based on the semester of study (p=0.991), marital status (p=0.406), and family income (p=0.872) (Table 2).

Table 2. The relationship between sociodemographic and clinical learning environments with anxiety levels

Variable	Category	Anxiety Level					p-value
		No	Mild	Moderate	Severe	Very severe	
Age	20-27 year	27 (32.9%)	15 (18.3%)	8 (9.8%)	7 (8.5%)	3 (3.7%)	0.047[a]
	27-35 year	12 (14.6%)	2 (2.4%)	2 (2.4%)	0 (0%)	0 (0%)	
	>35 year	4 (4.9%)	0 (0%)	1 (1.2%)	1 (1.2%)	0 (0%)	
Semester	1	10 (12.2%)	5 (6.1%)	0 (0%)	3 (3.7%)	1 (1.2%)	0.991[a]
	2	33 (40.2%)	12 (14.6%)	11 (13.4%)	5 (6.1%)	2 (2.4%)	
Domicile Status	With parents	8 (9.8%)	2 (2.4%)	4 (4.9%)	5 (6.1%)	0 (0%)	0.076[b]
Marital status	Married	14 (17.1%)	2 (2.4%)	2 (2.4%)	1 (1.2%)	1 (1.2%)	0.406[b]
	Not married yet	29 (35.4%)	15 (18.3%)	9 (11.0%)	7 (8.5%)	2 (2.4%)	
Family income	Very low	3 (3.7%)	2 (2.4%)	1 (1.2%)	2 (2.4%)	1 (1.2%)	0,872[a]
	Low	5 (6.1%)	1(1.2%)	0 (0%)	1(1.2%)	0 (0%)	
	Moderate	2 (2.4%)	0 (0%)	0 (0%)	0(0%)	0 (0%)	
	High	5 (6.1%)	2 (2.4%)	1 (1.2%)	0 (0%)	0 (0%)	
	Very high	28 (34.1%)	12 (14.6%)	9 (11.0%)	5 (6.1%)	2 (2.4%)	
Clinical learning environment	Good	27 (32.9%)	6 (7.3%)	4 (4.9%)	2 (2.4%)	1 (1.2%)	0,008[a]
	Bad	16 (19.5%)	11 (13.4%)	7 (8.5%)	6 (7.3%)	2 (2.4%)	

[a]Spearman's rho test

[b]Koefisienkontingensi test

As shown in table 2, there is a significant relationship between the level of anxiety with the age of clinical midwifery students (p=0.047), domicile status (p=0.163), and the clinical learning environment (p=0.008). The clinical learning environment sub-scales that affect the anxiety level of clinical midwifery students during the COVID-19 pandemic are learning opportunities (p=0.017), interaction with patients (p=0.003), guidance process (p=0.016), confidence and self-awareness (p=0.006) (Table 3).

Table 3. The relationship between sub clinical learning environments with anxiety level

Subclinical Learning Environment (n=82)	*p-value*[a]	R
Learning opportunities and engagement	0,017	0,263
Interactions with patients during clinical rotation	0,003	0,328
Communication and interactions with colleagues and supervisors	0,141	-
Facility and individual treatment	0,208	-
Supervision process	0,016	0,266
Self-confidence and awareness	0,006	0,302

[a]Spearman's rho test

Based on the ordinal regression test, it show that only the learning environment variable has a significant relationship with the level of student anxiety with p value = 0.02 (p <0.05) and the odd ratio value is 3.24. These results mean that the learning environment is 3.24 times in causing student anxiety (Table 4).

Table 4. Table of independent factors related to anxiety level

Variable	OR	p-value	95% Confidence Interval	
			Lower Bound	Upper Bound
Age	2,57	0,433	-1,419	3,308
Semester	2,39	0,142	-2,028	0,290
Marital status	1,74	0,581	-1,406	2,511
Domicile status	1,46	0,451	-0,602	1,355
Family income	1,53	0,534	-0,912	1,760
Clinical learning environment	3,24	0,020*	-2,164	-0,186

Link function: Logit.
*P<0,05

According to HRS-A, those with clinically significant moderate to high anxiety were high in this study. Our results were higher than the finding of a survey conducted on midwifery students (*Sögüt, Dolu and Cangöl, 2020*).This result is found by the fact that communicable diseases have caused a greater amount of fear compared to non-communicable diseases(Mohamed *et al.*, 2021). In this study, most participants were found not experience anxiety until low anxiety maybe because of precaution what students do in their home environment(*Sögüt, Dolu and Cangöl, 2020*). Therefore, the low anxiety in our study may be related to pandemic state with lower positive case addition and the students also adapted to this extraordinary case.

Consistent with our initial hypothesis, we found that midwifery clinical students with a poor perception of the clinical learning environment had higher anxiety levels. The results of this study are in line with previous research on nursing students in Korea, which stated that there was a significant relationship between the respondents' clinical learning environment and anxiety levels (Yang and Hee, 2015). The main findings are that; the more sufficient student interaction with patients during clinical learning, the lower the level of anxiety. Previous studies found that student interactions with patients were poor in contributing to patient care, so students felt anxious because they did not have sufficient knowledge and

skills (Azim, 2020). The clinical learning environment is the only independent variable had significantly associated with anxiety.

In previous studies, it was found that student interactions with patients were poor in contributing to patient care so students felt anxious because they did not have sufficient knowledge and skills (*Azim, 2020*). In this study, student involvement during patient care can foster student feelings as a midwife. The high level of anxiety in clinical midwifery students also occurs because of self-confidence and awareness. When entering the clinical education phase, students do not have strong confidence to communicate well with supervisors and midwife staff and are hesitant to participate in teamwork (*Smith et al., 2013*). Students are generally not confident in making decisions in care because of high levels of anxiety. This high level of anxiety impacts students because they will collect information and listen thoroughly to the information obtained to make the right clinical decisions (Paulina Espinosa-Rivera, 2019).In clinical learning during the COVID-19 pandemic, students are aware of the needs and limitations of their learners. Thus, causing some students to feel insecure to caring for patients during clinical learning.

The clinical mentoring process is a formal learning support process that enables individuals to develop knowledge and competencies, take responsibility for their practice, and improve patient protection and care safety in various situations. Student midwives must practice and apply what has been learned theoretically in lectures and observe while providing patient care. Good supervisors are expected to be friendly, approachable, and aware of the work standards expected of students (*Bweupe, Ngoma and Sianchapa, 2018*). Clinical supervisors should express their presence as role models for students (*Sharif and Masoumi, 2005*).During clinical learning, students feel valued by their clinical supervisor. And also the clinical supervisor motivates students to be better. This kind of relationship will make students feel comfortable and continue to push themselves to provide better care for patients.

In clinical learning, students develop knowledge and skills that have been previously acquired in lectures. Student involvement in inpatient care can develop relationships with peers and midwives, especially when working in a team. It is essential to build new knowledge, get emotional support, and create a student's

identity as part of a team in developing this relationship. Developing relationships for social support is critical in the transition from preclinical students to clinical students. In previous studies, it was found that high levels of anxiety and emotional distress were found among clinical students. It was also noted that students rely on colleagues rather than midwives for support. Explain the learning objectives to students to know what to learn. This can encourage student welfare and motivate students to achieve their learning targets (*Smith et al., 201*3).Students in this study have the opportunity to contact the patient on the first occasion of clinical rotation and mostly students get a briefing about COVID-19 before entering a new clinical rotation in clinical learning. This can reduce anxiety during clinical learning during a pandemic because it can reduce the risk of virus transmission.

In our study, participants with severe anxiety mostly in range between 20 to 27 years age groups. International researches show significant relationship between age and anxiety. In the early adults (18–29 years) group, the severity and symptoms of anxiety during the COVID-19 pandemic were higher than other age groups. The COVID-19 pandemic can temporarily disrupt development and short-term goals associated with specific developmental periods, causing disappointment, fear, and uncertainty, leading to increased anxiety symptoms (*Gambin et al., 2021*). In our study, living in dormitory was a protective factor against anxiety during COVID-19 pandemic. This is related to the risk of more incredible transmitting the virus to the family. Living with parents is a beneficial factor to fight anxiety in previous studies (*Cao et al., 2020*).

Semester of study, marital status, and family income did not show any significant association with anxiety during the COVID-19 pandemic, which is similar with the finding from previous studies (*Wang et al., 2019; Sögüt, Dolu and Cangöl, 2020; Anindyajati et al., 2021*). Participants from the 2nd semester of the study were found to have a higher level of anxiety. The first and last semesters, both of them experience anxiety due to adaptation to clinical learning and also face competency exams(*Bassols et al., 2014; Moutinho et al., 2017*). In our study participants who not marry yet were more likely to have higher level of anxiety than those marry, which is similar to result from previous research during COVID-19 pandemic. Someone who is married is healthier and more satisfied with their life, not easy to experience

anxiety and depression, and better psychological state than being single and divorced (*Purba et al., 2020*). However in the previous study in China no marry status associated with anxiety (*Wang et al., 2019*). Our finding may be should ask the respondent's divorce status. The high level anxiety of participants mostly in lower family income group. This finding is similar to the finding another study in Japan (*Nagasu, Muto and Yamamoto, 2021*).

There are some limitation that suggest caution when interpreting these results. This was a new study during the COVID-19 pandemic, so the psychological condition of students is very dependent on the condition of adding daily cases. Data collection in this study was carried out when COVID-19 was subsiding in Indonesia. And it is also important to explore some qualitative question to strengthen the research.

CONCLUSION

This study reveals a significant relationship between the respondent's age, domicile status, and the clinical learning environment with the respondent's level of anxiety during the COVID-19 pandemic. Therefore, the importance of all components in clinical learning is to create a good environment so that students do not have increased anxiety.

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