The correlation among pregnant woman's education level with knowledge and behaviour on readiness toward COVID-19 pandemic[☆]

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Abstract During the COVID-19 pandemic, pregnant woman were a particular group who had a high risk and vulnerable spread by a coronavirus. So that, knowledge and behaviour might have an impact on a woman's health during their pregnancy. This study aims to determine the relationship between pregnant woman's educational level with knowledge and behaviour towards their readiness in facing COVID-19 pandemic in two regions in Aceh (North Aceh and Pidie). The type of research used a quantitative study with a cross-sectional approach. The sampling technique was a snowball sampling with a sample size of 138 pregnant women selected as respondents. Data were collected by using an online questionnaire and was conducted from June to July 2020. The questionnaire was arranged by researcher with expert judgement validity. The chi-square test was used for data analysis with PSPP. The result showed that there was a significant correlation between pregnant woman's education level and knowledge of pregnant women's readiness on facing COVID-19 pandemic ($p = .000$), and there was a significant correlation between pregnant woman's education's level and behaviour of pregnant woman readiness on facing COVID-19 pandemic ($p = .000$). Therefore, to have successful pregnancies, it is hoped that the family and the government support adequate health services for pregnant women's readiness to face COVID-19 pandemic.
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Introduction

As the global spread, the coronavirus pandemic 2019 (COVID-19) caused by the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). This public health emergency has seriously infected and is deadly, especially in vulnerable populations. Besides, the spread of this virus is

also very influential in communities where health service providers are insufficient or ready to manage infections. The SARS-CoV-2 virus also attacks and isolates individuals, even without causing symptoms. Besides, the spreading of the virus is also very influential in communities. The health service providers, however, are insufficient and not ready to manage infections.

Pregnancy is a particular time of joy, especially for expectant mothers. Pregnant women and fetuses are representing a high-risk population during infectious disease outbreaks. Physiological and psychological changes in pregnancy increase the general susceptibility to infection significantly when the respiratory cardio system is affected, and promote the rapid development of respiratory failure in the gravida. During the COVID-19 pandemic, the pregnant women who are facing an outbreak of coronavirus disease (COVID-19) will experience anxiety, fear, and uncertainty compared to pre-pandemic pregnancies.

Methods

The type of research used a quantitative study with a cross-sectional approach. The data collected by an online questionnaire of 138 pregnant women in two regions of Aceh (Pidie and North Aceh) and the sampling technique was snowball sampling. It was conducted from June to July 2020. The chi-square test was used for data analysis. The ethics committee of the Nursing Faculty of Syiah Kuala University has approved the study protocol with number 113001130420.

Result

The study has produced result in forms of data of sociodemographic and obstetric characteristics distribution of participants are given in Table 1. In addition, Table 2 provides the data of correlation between education with knowledge and behaviour.

Table 1: Presented the distribution of demographic data for pregnant women in readiness to face COVID-19 during the pandemic in Aceh, included: living area, age, latest education, gravid, gestational age and antenatal care visit.

Based on the study, it is found that the majority of participants lived in Aceh Besar District 63.8%. In addition, the majority of pregnant women age the early adult is 57.2% and had the latest educational level in the higher education category 65.9%. Regarding the ongoing pregnancies, some of the pregnant women were in the first trimester of pregnancy 50.7%, multigravida 108%. During a pandemic, about 71% have done antenatal checks, 1—2 times visits.

Factoring pregnant women

Based on the data collection results in the study were found that 50.7% of pregnant women had good knowledge. In addition, 59.4% has good behaviours in undergoing pregnancy during the COVID-19 pandemic.

Based on the data in Table 2, there is a significant relationship between the education level of pregnant women and the knowledge of pregnant women towards their readiness to face a pandemic. With $p = 0.000$, it can be stated that

Table 1 Distribution of participants data characteristics ($n = 138$).

Characteristics	Frequency (n)	Percentage (%)
Living area		
Aceh Utara	50	36.2
Pidie	88	63.8
Age		
Late teens	59	42.8
Early adults	79	57.2
Latest educational level		
Middle	47	34.1
High educations	91	65.9
Gravida		
Primigaravida	70	50.7
Multi gravida	68	49.3
Gestational age		
First gravida	30	21.7
Second gravida	108	78.3
Antenatal care visit		
1–2 visit	71	51.4
2	67	48.6

there is a relationship. In other variables, there is a significant relationship between the education level of pregnant women and maternal behaviours towards their readiness in facing the COVID-19 pandemic, with a p of 0.000. It can be stated that there is a significant relationship as well.

Discussion

This study illustrates that most pregnant women have a high level of education, 65.9%, and 70% have good knowledge, respectively. It shows that most respondents have good knowledge about the readiness to undergo pregnancy during the COVID-19 pandemic. The higher level of knowledge they had, the better the signs and dangers of pregnancy they understand. Thus, they can prepare for the pregnancy well.[1]

The results of the study also indicate that there is a correlation between the educational levels of pregnant women with their knowledge of toward their readiness in facing COVID-19 during the pandemic in Aceh Province (Table 2). It is following the results of research by Hoque and Hoque in 2011 which states that the higher the level of education a person has, the better his knowledge of awareness and readiness for pregnancy.[1]

Although basically, prior knowledge can affect a person's knowledge because it can significantly improve memory processes so that it can encourage the acquisition of maternal knowledge during pregnancy.[2] However, different results are shown from the research examined in Italy on 358 pregnant women, there are 50.3% of pregnant women with high education levels but have low awareness and willingness to administer vaccines during pregnancy.[3]

The results of other studies also prove there is a close relationship between early detection of COVID-19 and knowledge of pregnant women. Therefore, it is highly

Table 2 Relationship between educational level with knowledge and behaviour.

Latest educational level	Not good		Good		Total	α	p-value
	F	%	F	%			
Knowledge							
Middle	35	74.5	12	25.5	47	0.05	
Higher	35	50.0	56	82.4	91		
Total	70	50.7	68	49.3	138		
Behaviour							
Middle	32	68.1	15	31.9	47	0.05	0.000
Higher	24	42.9	67	73.6	91		
Total	56	40.6	82	59.4	138		

recommended that they increase their specific knowledge about signs and symptoms to reduce morbidity and mortality during the pandemic.[4]

During the pandemic, education for pregnant women should be emphasised more concerning various health protocols that must be understood by mothers during pregnancy and especially for countries that implement indirect health checks or telehealth.[5] It is highly undesirable that the lack of provision of information and service providers because the lack of information obtained will put pregnant women at risk of increased anxiety and psychological pressure which can affect the health of mothers and babies.[6]

The results of this study also showed that 59.4% of pregnant women had good behaviour in preparedness to face COVID-19 during the pandemic and showed a significant relationship between the level of education of pregnant women and the behaviour of pregnant women in readiness to face COVID-19 during the COVID-19 pandemic in Aceh (Table 2). It is following the results of research conducted by Anikwe et al. (2020), it was found that the higher the level of education, the more positive attitudes would be, as evidenced by a total of 430 respondents, there were 50% of respondents with a high level of education and 80% of which positive about COVID-19.

The level of education is one of the main factors that can influence the attitude of pregnant women.[7] A study conducted at the health care centre of the Shahid Beheshti University of Medical Science in Iran found that health education interventions based on the health promotion model were more effective in increasing knowledge, understanding, and awareness of pregnant women. It can reduce the risks and barriers to healthy living behaviour.[8]

According to D'Alessandro et al. (2018), the educational level of pregnant women is closely related to their attitudes and behaviours. In providing education, health workers must have a special strategy, especially when communicating with pregnant women with a higher educational background, as they are more selective in decision-making. The right attitude and behaviour can be done based on good knowledge possessed by individuals to reduce stress and anxiety during pregnancy.[6] In addition, harmful psychological conditions can also affect the immunity of pregnant women. Immune suppression in pregnant women is at greater risk than in women who are not pregnant, so morbidity also increases.[9]

Besides, the results of a study conducted in Northern Nigeria with 340 pregnant women indicated that almost all respondents had good knowledge about COVID-19 and how to apply it in pregnancy. More than 82% of these respondents believe that COVID-19 is real.[7] So it takes a good readiness for pregnant women and families as a support system to support mothers during their pregnancy.[1]

Information about the effects and prognosis of COVID-19 for pregnant women is needed, especially for pregnant women in the first and second trimesters.[9] However, most of the sources of information used by pregnant women to obtain information related to COVID-19 during pregnancy are from the mass media.[7] Ideally, the source of information obtained should be directly from health workers, especially pregnant women during pregnancy visits or Antenatal Care (ANC), because the purpose of ANC is to provide counselling, provide information and provide support for pregnant women.[10] It is in line with the results of a study conducted on 130 pregnant women in Iran, and it was found that there was a significant difference between pregnant women who received regular education during ANC visits compared to pregnant women who were not given regular education.[8]

Conclusions

Based on the research results, there is a significant correlation among the pregnant womens' educational level with knowledge and behaviour towards their readiness in facing COVID-19 pandemic in two regions in Aceh (North Aceh and Pidie). In addition, family support and health service providers for pregnant women are highly expected so that mothers can be ready to undergo their pregnancy during the COVID-19 pandemic.

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Conflict of interest

The authors declare no conflict of interest.

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References

1. Hoque M, Hoque ME. Knowledge of danger signs for major obstetric complications among pregnant KwaZulu-Natal women: implications for health education. Asia-Pacific J Public Heal. 2011;23:946–56.

2. Shing YL, Brod G. Effects of prior knowledge on memory: implications for education. Vol. 10: Mind, brain, and education; 2016. p. 153–61.

3. D'Alessandro A, Napolitano F, D'Ambrosio A, Angelillo IF. Vaccination knowledge and acceptability among pregnant women in Italy. Hum Vaccines Immunother. 2018;14:1573–9.

4. Mascarenhas VHA, Caroci-Becker A, Venâncio KCMP, Baraldi NG, Durkin AC, Riesco MLG. COVID-19 and the production of knowledge regarding recommendations during pregnancy: a scoping review. Rev Lat Am Enfermagem. 2020;28:1–10.

5. Fryer K, Delgado A, Foti T, Reid CN, Marshall J. Implementation of obstetric telehealth during COVID-19 and beyond. Matern Child Health J. 2020;24:1104–10.

6. Ben-Ari OT, Chasson M, Sharkia SA, Weiss E. Distress and anxiety associated with COVID-19 among Jewish and Arab pregnant women in Israel. J Reprod Infant Psychol. 2020;38:340–8.

7. Anikwe CC, Ogah CO, Anikwe IH, Okorochukwu BC, Ikeoha CC. Coronavirus disease 2019: knowledge, attitude, and practice of pregnant women in a tertiary hospital in Abakaliki, southeast Nigeria. Gynecol Obstet. 2020:197–202.

8. Khoramabadi M, Dolatian M, Hajian S, Zamanian M, Taheripanah R, Sheikhan Z, et al. Effects of education based on health belief model on dietary behaviors of Iranian pregnant women. Glob J Health Sci. 2015;8:230–9.

9. Liang H, Acharya G. Novel corona virus disease (COVID-19) in pregnancy: what clinical recommendations to follow?; 2020. p. 1–4.

10. Al-Ateeq MA, Al-Rusaiess AA. Health education during antenatal care: the need for more. Int J Women's Health. 2015;7:239–42.