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Fear of Birth: An Increasing Fear in Pregnancy During the COVID-19 Period

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ABSTRACT

BACKGROUND/AIMS: The inadequate prenatal and postnatal services due to the deployment of health services to coronavirus disease-2019 (COVID-19) related arrangements has led to an increased number of patients experiencing a fear of contracting COVID-19 in addition to their fear of childbirth. Therefore, this study aimed to examine the relationship between the fear of COVID-19 and the fear of childbirth.

MATERIALS AND METHODS: The study was designed in descriptive and correlational types. Three hundred forty-three pregnant women included in the study using descriptive and correlational methods were evaluated using the COVID-19 Fear Scale (CFS) and the Fear of Birth Scale (FOBS) for Pregnant Women.

RESULTS: The mean age of the pregnant women participating in the study was 29.07±5.90 years and the mean gestational week was 35.51±2.70 weeks. It was observed that pregnant women had more fear of COVID-19 (19.69±7.63) due to the fear of contracting the virus during the pandemic period, and as a result, the participants experienced a fear of birth (64.25±29.30). It was observed that there was a significant, positive, and moderate relationship between CFS and FOBS in the pregnant women ($p<0.001$). It was found that 15.8% of the development of fear of birth is due to a fear of COVID-19.

CONCLUSION: Healthcare professionals can use practical scales to assess pregnancy and COVID-19 fears.

Keywords: Pregnancy, fear, birth, COVID-19

INTRODUCTION

Pregnancy is a time of significant physiological change to meet the needs of the developing fetus and prepare the mother-to-be for labor and birth. These physiological changes can have psychological implications on pregnant women, inducing anxiety and depression.[1-3] Pregnant women may experience anxiety about the labor and delivery process, but if this anxiety negatively impacts their quality of life, it is termed tocophobia (fear of birth).[4] Cesarean rates have been reported as higher in nulliparous women with tokophobia.[5]

Fear of Birth (FOB) can be classified as mild, moderate, or severe.[6] There are some factors closely associated with FOB, namely low socio-economic status, lack of social support, pre-existing distrust of healthcare workers, feeling alone in an unfamiliar environment during labor, excessively worrying about the well-being of the baby, fear of pain during labor, inadequate milk supply and the possibility of cesarean section.[6-8] FOB can complicate pregnancy, labor, and the postpartum period with an increased rate of cesarean deliveries, excessive need for pain medications, postpartum depression, attachment problems between the mother and newborn and fetal asphyxia.[6-8] FOB can be seen before pregnancy due to other women's adverse birth experiences.[9]

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FOB may be intensified during pandemics. It has been shown that anxiety and excessive stress during pregnancy are accentuated by social isolation. This may be associated with adverse birth outcomes such as premature birth.[10] Coronavirus disease-2019 (COVID-19) was declared a pandemic by The World Health Organization. It has led to large-scale unprecedented negative impacts on public health, the economy, social life, and education.[11]

Pregnant women are worried about the well-being of their unborn babies, themselves, and their loved ones. As a result, many women perceive healthcare institutions as high-risk areas in terms of contracting COVID-19, and pregnancy follow-ups have been compromised due to this fear. In addition, the inadequate prenatal and postnatal services due to the deployment of health services to COVID-19 related arrangements has led to an increased number of patients experiencing childbirth with a fear of contracting COVID-19.[12]

This study aims to investigate the possible relationship between the fear of childbirth and the fear of contracting COVID-19 disease during the COVID-19 pandemic.

MATERIALS AND METHODS

Research Type

The study was designed in descriptive and correlational types.

Research Questions

1. What is the fear of birth in pregnant women in the COVID-19 period?

2. What is the fear of COVID-19 in pregnant women during the COVID-19 period?

3. Is there a relationship between the fear of birth and the fear of COVID-19 in pregnant women during the COVID-19 period?

4. Are there other factors affecting the development of the fear of birth in pregnant women during COVID-19?

Population and Sample

This study was conducted in the antenatal outpatient clinic of a tertiary pandemic hospital between December 1, 2020 and December 30, 2020. The study comprised pregnant women over 30 weeks of gestation presenting to a tertiary pandemic hospital in the Marmara region of Turkey. A total of 343 pregnant women included in the study were selected based on the criteria below:

- Pregnant women who can speak and write Turkish,
- Between 19 and 45 years old,
- Not previously diagnosed with COVID-19 disease,
- No pre-existing psychiatric illness,
- No high-risk pregnancy diagnosis,
- Women who consented to participate in this study.

Data Collection Tools

Data was collected via three different questionnaires; the first questionnaire consists of questions regarding demographic features. The second was the COVID-19 fear scale questionnaire. The third was the fear of birth scale questionnaire, which was specifically designed for pregnant women. The demographic features in the first questionnaire included age, education, employment status, and risk stratification of the ongoing pregnancy.

The Coronavirus disease-2019 (COVID-19) Fear Scale: The COVID-19 fear scale was initially developed by Ahorsu et al.13 and adapted for use in the Turkish population by Bakioğlu et al.3 and comprises seven different points. The scale is one-dimensional and consists of seven items. There are no reverse-coded items on the scale. The scale's total score reflects the perceived (or experienced) level of fear of COVID-19 by an individual. Therefore, the higher the score, the higher the level of fear of COVID-19. The Cronbach's alpha value was found to be 0.880 during the initial scale development. We found it to be 0.979 in our study, and this value falls in the reliable range.

The Fear of Birth Scale for Pregnant Women: The Fear of Birth scale was developed by Haines et al.[14] for measuring the fear of birth, and this scale was adapted to Turkish society by Serçekus et al.[15]. Pregnant women were presented with the question, "How do you feel about the approaching birth?" Two different 100 mm lines are used; (0) calm and (100) worried, and (0) no fear at all, and (100) intense fear. The cut-off value for the scale is defined as 50 after calculating the average of two lines. Fear of birth is present if the score is 50 or above. This scale can be applied to both pregnant women and their partners. The Cronbach's value of this scale was found to be 0.920, and we found the Cronbach's value to be 0.785 in our study, which is consistent with the reliable range.

Data Collection Process

The data collection process was carried out voluntarily. Pregnant women attending for pregnancy follow-up were informed about the study by the researchers. A single room was arranged for the pregnant women who agreed to participate in this study to fill in the questionnaire. The researchers ventilated the room for 30 minutes after each person completed the questionnaire. Then, the next participant was taken to the room, and a new pen was given to each participant to fill in the questionnaire. The form was completed in an average of 10–15 minutes.

Statistical Analysis

Statistical analyses were conducted using the Statistical Package for Social Sciences Version 23 (SPSS Inc., Chicago, IL, USA). Number, percentage, mean and standard deviation were used in descriptive statistics. Mann–Whitney U test was used for group comparison, while Pearson chi-square test was used for scale correlation analysis. Results were accepted at a 95% confidence interval and the statistical significance as $p<0.05$.

Before starting this study, written approval (2020-10-27T20_29_46) was obtained by registering with the Ministry of Health of the Republic of Turkey (https://bilimselarastirma.saglik.gov.tr/). In addition, institutional permission from the pandemic hospital where the study was conducted and ethics committee approval (ethics committee no: 01/12/2020-583) from the university scientific research ethics committee was obtained. Furthermore, before commencing this study, informed consent was obtained in line with the voluntary principle, informing the participants about the study and confirming that their personal information would be protected. In addition, research and publication ethics were followed in this study.

RESULTS

The mean age of the pregnant women participating in this study was 29.07±5.90 years and the gestational week was 35.51±2.70 weeks. In addition, 13.4% of the participants were smokers, and 48.1% were primary school graduates. It was observed that 27.1% of the pregnant women were having their first pregnancy, and 92.2% of those who gave birth before did not have any problems in their previous deliveries.

It was observed that 43.7% of the participants had at least one relative diagnosed with COVID-19 during their pregnancy (Table 1). When the pregnant women were asked about their behavior during the COVID-19 period, it was seen that 13.1% answered "no" and 57.1% answered "I do not know" to whether a mother diagnosed with COVID-19 can breastfeed her baby.

During this period, 94.5% of the participants were found to have increased the frequency of washing their hands, 39.4% did not go out unless it was necessary, and 99.1% gave importance to wearing a mask when they had to go out, while all participants were observed to comply with social distancing (Table 1).

According to the scores obtained from the COVID-19 Fear scale, it was found that the scale mean score of pregnant women was 19.33±7.52, while the majority of the participants scored 21 points and above (Figure 1).

The fear of birth scale mean score of the participants was 61.7±30.09, and according to the cut-off score, 25.7% (n=88) did not have a fear of birth, while 74.3% (n=255) experienced a fear of birth. Additionally, it was concluded that 81 pregnant women (23.6%) who gave ten total points on the scale experienced a severe fear of birth (Figure 2).

It was observed that pregnant women had more fear of COVID-19 (19.69±7.63) due to the fear of contracting the virus during the pandemic period, and as a result, the participants experienced a fear of birth (64.25±29.30). The researchers found that those who were worried about having COVID-19 before birth experienced an increased fear of COVID-19 (20.08±7.36) and fear of birth (63.24±30.15). Furthermore, it was found that pregnant women experienced more fear of COVID-19 (19.66±7.42) and fear of childbirth (63.22±29.65) due to the concern of having COVID-19 after birth, similar to before birth. In addition, it was observed that the participants who were worried about being separated from their babies after birth experienced more fear of COVID-19 (19.34±7.40) and fear of birth (62.68±30.29) (Table 2).

The total scores of the scales used in the study were examined with the Kolmogorov–Smirnov Normality test and found to be normally distributed ($p>0.05$). Relationships between the scales were examined with Pearson's Moments Multiplication Correlation. According to the statistical analysis results performed for this purpose, it was observed that there was a significant, positive, and moderate relationship between the COVID-19 Fear Scale and the Fear of Birth Scale of pregnant women ($p<0.001$) (Table 3).

In this study, the predictive power of COVID-19 fear on the fear of childbirth in pregnant women was examined. In order to search for an answer to this basic issue. Regression analysis of the scales to predict total means was performed. When Table 4 is examined, it is seen that the COVID-19 fear level is a significant predictor of the fear of birth [$R = 0.400$, $R^2 = 0.160$, $F(1,360) = 64.958$, $p<0.001$]. It can be said that the fear of COVID-19 can explain 15.8% of the total variance regarding the fear of birth. According to the regression analysis results, the regression equation for predicting fear of birth is given below.

Fear of Birth = (30.821) + (1.160) x COVID-19 Fear Scale

DISCUSSION

In this study examining both the Fear of Childbirth and the fear of contracting COVID-19, it was seen that the fear of COVID-19 was a predictor in the development of Fear of Childbirth. In addition, this study found that the fear of COVID-19 (mean: 19.33 points) in pregnant women was at a medium level (Figure 1).

In the study where the Turkish validity version of the scale used was made, the mean score of the scale was determined to be 19.44.[3] In a study in which the fears of female and male participants (n=649) about COVID-19 disease were examined, it was emphasized that the fear of COVID-19 was higher in women, and this was because women were more emotional.[16] Women have an emotional nature due to both their gender and the factor of pregnancy. Since most pregnant women (n=223) see healthcare workers as their source of information on COVID-19, expressing their feelings and thoughts about COVID-19 will partially reduce their fears and comfort them. It is seen that approximately one-fourth (23.6%) of the pregnant women participating in this study experienced severe fear of birth (Figure 2). In the last trimester of pregnant women in a study conducted on this issue in Turkey, there was increased concern regarding birth and baby care.[17] In a study examining the prevalence of indigenous and immigrant pregnant women (n=606) in Sweden, it was found that 22% of local pregnant women and 37% of immigrants experienced birth fear.[18] In a study conducted with a different scale in Egypt, it was seen that 55.33% of women experienced fear of birth.[19] The high rate of fear of birth in pregnant women in different countries such as Sweden and Egypt are similar to our study. The high level of fear of birth in different societies with cultural differences suggests that this fear is universal and requires the awareness of health professionals working in obstetrics. We are convinced that delivery should be evaluated with simple, understandable scales or questionnaires, if possible, before planning or during a pregnancy. When a pandemic situation such as COVID-19 is added to this process, it can be seen that this fear increases. There are not enough studies in the literature regarding the fear of childbirth during a pandemic period. Therefore, it should not be forgotten that healthcare professionals should consider this finding. There was a significant relationship between the participants' fear of contracting COVID-19 before and after birth, between the worry of separation with the baby after birth, and the fear of COVID-19 and the fear of birth (Table 2). In a study conducted in Iran, it was reported that the fear of having COVID-19 during pregnancy affects the mental health of the pregnant women. Pregnant women worry about contracting the disease and infecting their babies and loved ones.[20] In one study that stated that women with a fear of delivery during pregnancy had a high tendency to postpartum depression, it was emphasized that there was a significant relationship between smoking, low education levels, a history of psychiatric illnesses before pregnancy, depressive symptoms during pregnancy, and the fear of delivery.[21] In a case report study in which a pregnant woman gave birth at home due to an excessive fear of COVID-19, it was stated that the pregnant woman did not want to go to the hospital despite Rh incompatibility, and the postnatal period was managed at home by the midwife who had followed the pregnancy.[22]

Table 1. Descriptive data of participants			
Sociodemographic variables		**n**	**%**
Age	29.07±5.90 years (min: 19 - max: 44)		
Smoking	Yes	46	13.4%
	No	297	86.6%
Income status	Income is more than expenses	104	30.3%
	Income is less than expenses	13	3.8%
	Income is equivalent to expenses	226	65.9%
Family type	Nuclear family	279	81.3%
	Extended family	64	18.7%
Working status	Yes	63	18.4%
	No	280	81.6%
Educational status	Primary education	165	48.1%
	High school/associate degree	140	40.8%
	Undergraduate-Postgraduate	38	11.1%
Obstetric history			
Pregnancy week	35.51±2.70 weeks (min: 30 - max: 40)		
Conceiving method	Spontaneous	328	95.6%
	Assisted reproductive techniques	15	4.4%
Planned pregnancy status	Yes	254	95.6%
	No	89	4.4%
Previous delivery status	Yes	250	72.9%
	No	93	27.1%
Problems in previous birth	Yes	20	7.8%
	No	235	92.2%
Chronic disease status	Yes	32	9.3%
	No	311	90.7%
Time between pregnancies	First pregnancy	97	28.3%
	Less than 1 year	12	3.5%
	1–2 years	56	16.3%
	More than 2 years	178	51.9%
Previous delivery method	Normal vaginal delivery	119	49.0%
	Cesarean section	124	51.0%
Nearby COVID-19 infection status	Yes	150	43.7%
	No	193	56.3%
Information status about COVID-19			
COVID-19 positive mother's ability to breastfeed her baby	Yes	102	29.7%
	No	45	13.1%
	Unknown	196	57.1%
Information sources about COVID-19	Media	102	29.7%
	Internet	35	10.2%
	Health employee	223	65.0%
Hand washing frequency (according to pre-pandemic)	Yes	324	94.5%
	No	19	5.5%
Not going out unless required	Yes	135	39.4%
	No	208	60.6%
Wearing a mask when you have to go out	Yes	340	99.1%
	No	3	0.9%
Compliance with social distancing when having to go out	Yes	343	100%
	No	0	0

COVID-19: coronavirus disease 2019, n: number.

In a study conducted on social media in the United States, it was reported that pregnant women (n=592) wanted to stay at home until the birth began and planned to leave hospital as soon as possible after birth, thus thinking that they would reduce their risk of contracting COVID-19. In addition, it was found in this study that some of the pregnant women (n=81) did not intend to give birth in a hospital, and they were worried that they might become infected in the hospital and be separated from their babies.[23] Healthcare professionals may need to explain to pregnant women the demonstrated or possible effects of COVID-19 on the fetus and newborn in a language that the lay-person can understand. Good feelings such as being pregnant and knowing that you will be a mother should not be allowed to be overshadowed by such fears. In addition, investigating the social support (spouse, mother, sibling, friend, etc.) sources of pregnant women may also be effective in managing such fears.

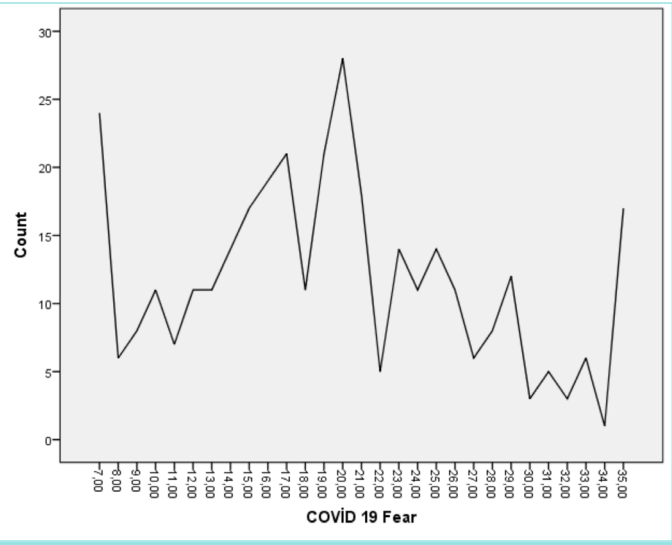

Figure 1. Distribution of COVID-19 fear responses.

According to the scores obtained from the COVID-19 Fear scale, it was found that the scale mean score of pregnant women was 19.33±7.52, while the majority of the participants scored 21 points and above.

COVID-19: coronavirus disease 2019

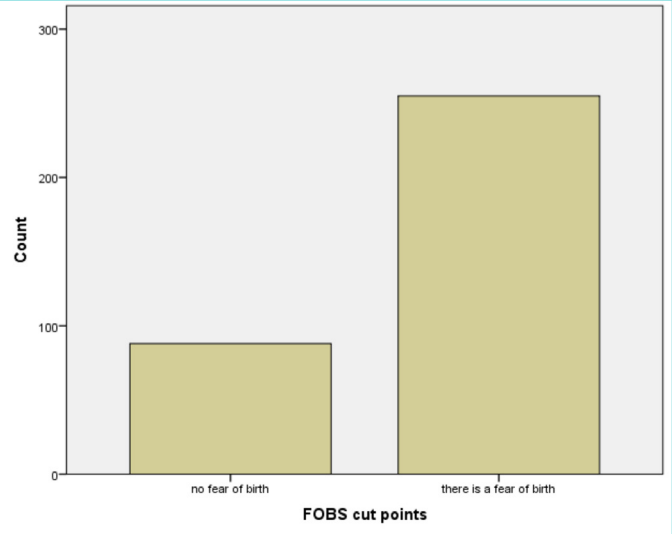

Figure 2. Distribution of FOBS responses.

The fear of birth scale mean score of the participants was 61.7±30.09 and according to the cut-off score, 25.7% (n=88) did not have a fear of birth, while 74.3% (n=255) experienced fear of birth. It was concluded that 81 pregnant women (23.6%) who gave ten full points on the scale experienced severe fear of birth.

FOBS: The fear of birth scale, n: number

One of our study findings is a significant positive correlation between the fear of childbirth and the fear of COVID-19 (Tables 3 and 4). In a qualitative study examining the adaptation of seven pregnant women to the pandemic process, researchers found three themes (pregnancy perception in a pandemic, coping with pregnancy, and supporting pregnant women).[24] In a study conducted with 190 pregnant women in Pakistan, it was reported that 74.7% of women were afraid of contracting COVID-19. It was observed that fear was higher in those who received service from a public hospital, had four or more pregnancies, and had low economic and educational levels.[25] Another study emphasized that 84.6% of pregnant women (n=242) had a high level of prenatal anxiety and fear of contracting COVID-19.[24] Some women may consider a home birth because they fear being infected with COVID-19 and the delivery room environment. However, delivery at home can adversely affect the health of the mother and baby.[25] In a study comparing counseling and art therapy under the leadership of a healthcare professional to cope with the fear of childbirth, it was found that neither method was superior to the other; they are both effective in controlling the fear of birth.[7] In order to control the fear of birth, methods such as health professional counseling, group therapy, telephone support, cognitive behavioral therapy, and obtaining birth preparation support from a health professional are recommended.[26] Our research examining the relationship between the fear of birth and the fear of COVID-19 shows similar features with other studies. We think that a pregnant woman's ability to visit the hospital and delivery room environment in which she plans to give birth, communicate with the healthcare professionals involved in the delivery, and to participate in birth preparation training will help pregnant women control their fear of birth and COVID-19.

It is not known precisely when the COVID-19 pandemic will end. In addition to the possible social and economic uncertainties in this process, being at risk of becoming sick inevitably causes people to experience intense stress and anxiety. In such a period, undergoing significant periods of a women's life such as pregnancy and childbirth, will increase the stress and anxiety experienced. Therefore, preventive health care, education, and consultancy services should be provided without delay during pregnancy follow-up during a pandemic period.

When pregnant women come to their health check-ups, in addition to routine obstetric examinations, fear of childbirth and fear of COVID-19 should be evaluated with practical scales or brief questioning by healthcare professionals. According to these evaluation results, it is recommended that at risk pregnant women be followed closely, and if necessary, they should be referred to a psychologist or psychiatrist.

Limitations and Strengths

This study has several limitations such as the fact that generalization cannot be made since this study was carried out in a single center and also that a psychological assessment tool based on individuals' reports may weaken its objectivity. However, the study's strengths are its ability

Table 2. Evaluation of the COVID-19 fear effect on the fear of birth

	COVID-19 fear value, mean (SD)	p-value; U	Fear of birth value, mean (SD)	p-value; U
The fear of contraction corona virus on arrival				
Yes (n=302, 88%) No (n=41, 12%)	19.69±7.63 16.68±6.10	0.010; 3819.000	64.25±29.30 43.29±29.76	0.000; 4657.500
Worry of contraction COVID-19 before birth				
Yes (n=296, 86.3%) No (n=47, 13.7%)	20.08±7.36 14.59±6.81	0.000; 3893.500	63.24±30.15 52.34±28.22	0.008; 5308.500
Concern of contracting COVID-19 after birth				
Yes (n=315, 91.8%) No (n=28, 8.2%)	19.66±7.42 15.53±7.76	0.003; 2928.000	63.22±29.65 45.17±30.65	0.003; 2946.500
Worry of being separated from baby after birth				
Yes (n=319, 93.0%) No (n=24, 7.0%)	19.34±7.40 19.20±9.20	0.589; 3575.500	62.68±30.29 49.37±24.59	0.027; 2804.500

Mann–Whitney U test, p<0.05.
COVID-19: coronavirus disease 2019, SD: standard deviation, n: number.

Table 3. Relationship of COVID-19 fear and fear of birth scale

		Fear of birth scale
COVID-19 fear	r	0.400
	p	**0.000**

r: Pearson's correlation coefficient. P-values of the statistically significant correlation coefficients were shown as bold p<0.001.
COVID-19: coronavirus disease-2019.

Table 4. Findings regarding the power of COVID-19 fear effect on the fear of birth

Dependent variable: fear of birth

Independent Variables	β	SE_B	Std β	T	p-value
Constant	30.821	4.117		7.486	0.000
Fear of COVID-19	1.600	0.198	0.400	8.060	0.000

$R = 0.400/R^2 = 0.160$/Adjusted $R^2 = 0.158$
$F_{(1,360)} = 64.958$, p=0.000
SE: standard error, Std: standard, COVID-19: coronavirus disease 2019.

to raise awareness of the fear that may occur during pregnancy in order to provide the necessary support.

MAIN POINTS

- When pregnant women come to their health check-ups, in addition to routine obstetric examinations, fear of childbirth and fear of COVID-19 should be evaluated with practical scales or brief questioning by healthcare professionals.
- According to the evaluation results, it is recommended that the pregnant women at risk be followed closely, and if necessary, they should be referred to a psychologist or psychiatrist.
- COVID-19 is a contributing factor in the increase of the fear of birth.

ETHICS

Ethics Committee Approval: Ethics committee approval was obtained from Sakarya University Scientific Research Ethics Committee (decision no and date: 583-01/12/2020).

Informed Consent: Informed consent was obtained in line with the voluntary principle, informing the participants about the study and confirming that their personal information would be protected.

Peer-review: Externally peer-reviewed.

Authorship Contributions

Concept: Ö.T., K.G., Design: Ö.T., K.G., Supervision: Ö.T., K.G., M.S.B., Data Collection and/or Processing: Ö.T., Ö.D., K.G., M.S.B., Analysis and/or Interpretation: Ö.D., Literature Search: M.S.B., Writing: Ö.T., K.G., M.S.B., Critical Review: Ö.T., M.S.B.

DISCLOSURES

Conflict of Interest: No conflict of interest was declared by the authors.

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