

Risk Perception, Fear and Anxiety of COVID-19 Among Antenatal Mothers

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Abstract

Background: COVID-19 is a new disease and is having the most devastating effects globally, its emergence and spread are causing confusion, anxiety and fear among the general public. Antenatal mothers are the most critical population group which needs additional precautions against COVID-19 due to risk of vertical transmission. The prenatal anxiety, depression and stress are also considered as prevalent health issues among pregnant women. **Objectives:** This study aimed to assess the risk perception, fear and anxiety of COVID-19 among antenatal mothers, to find out relationship between risk perception, levels of fear and anxiety among antenatal mothers and to measure association between risk perception, fear and anxiety with selected variables. **Methods:** A descriptive cross-sectional study was used to assess among antenatal mothers using non-probability convenient sampling technique in Antenatal OPD of Gandaki Medical College Teaching Hospital Research Centre, Kaski District. Data was collected by using semi-structured interview with Likert scale to measure risk perception, fear and anxiety among antenatal mothers. **Results:** Most of the respondents (83.3 %) had low, 9.3% had moderate, 7.4% had high perceived score. Three fourth of the respondents (71%) had mild to moderate fear with mean FCOVID-19 score of 2-3, 17.3% had score of 1 and only 11.7% had 4-5 FCOVID-19 score. Almost half of the respondents (46.3%) had no or little anxiety, 26.5% had moderate anxiety, 21.6% had mild anxiety and 5.6% had severe anxiety disorder. There was significant strong positive correlation among risk perception, fear and anxiety (p -value <0.05). There was a significant association between ethnicity and generalized anxiety disorder, education level and fear, occupation and risk perception, family type and generalized anxiety disorder (p -value <0.05).

Keywords: Antenatal mothers, Anxiety, COVID-19, Fear, Risk Perception

Introduction

The outbreak of COVID-19 has brought unprecedented change in the global and national landscape on daily wellbeing [1]. As a result, many countries are responding to restrict the spread of disease through national or local lockdown. The lockdown took the form of severe restrictions on transport and closure of outpatient departments of many hospitals [2]. Hospitals were restricted in their capacity to provide routine health services while instituting COVID-19 preparedness. Across the country, fear of COVID-19 transmission in hospital settings is widespread because of a scarcity of proper protective equipment. All these factors have affected a woman's access to safe delivery, which is within their rights, by extending the delays in both reaching a health facility and in receiving quality care once she arrives [3]. Antenatal

mothers and their fetuses are at high risk of getting infectious disease due to physiological and mechanical changes during pregnancy. The coronavirus infection in the third trimester increases the risk of premature rupture of the membranes, preterm labor, fetal tachycardia and fetal distress [4].

Risk perception is an important determinant of healthy behaviors which plays an important role in designing interventions to change behaviors. Providing large amount of information and overuse of the media can lead to overreaction, irrational fear, anxiety and over perception of risk. Measuring the level of perception in pregnant women is important for the transmission of information and health protocols [5].

Methods

Study Design: A descriptive cross-sectional study was used to assess among antenatal mothers using non-probability convenient sampling technique in Antenatal OPD of Gandaki Medical College Teaching Hospital Research Centre, Kaski District.

Study Setting: Gandaki Medical College Teaching Hospital Research Centre, Kaski District was selected as it is one of the tertiary hospitals of Pokhara which was established in 2008 A.D consisting of 550 bedded capacity and it is located in main centre of Prithvi Highway which provides variety of services like outpatient services, inpatient services and different wards and maternity services i.e Safe motherhood programme with sufficient patient's flow.

Study Population: The data was collected from antenatal mothers inOPD of Gandaki Medical College from November, 2020 to January, 2021.

Data collection and Procedure:

Ethical approval was taken from the Institutional Review Committee of GMC-IRC (Ref no: 102/077/078). Informed written consent was taken from each respondent after giving information about the nature of the study and use of the data. Data collection was done by using face to face interview. None of the participants was forced to participate in this study. Respondent's dignity was maintained by giving right to reject or discontinue their participation from the study at any time. Confidentiality was maintained by not disclosing the name and using the information only for study purpose.

Data collection tools:

A semi-structured interview was used for data collection. Visual scale to measure risk perception consists of 7 items. Responses were given based on Likert range from zero (no perceived risk) to ten (high level of perceived risk). The total score which was between zero and 70 was calculated from the score of 100. Score of less than 40 was considered the low perceived risk, a score between 40 and 60 was considered the moderate perceived risk, a score higher than 60 was considered high perceived risk [5]. Likert scale to measure Fear of COVID-19 (FCOVID-19) which is a standard tool given by Ahorsu et al. It includes seven statements using 5 point Likert scale (5. Strongly disagree, 4. Disagree, 3. Neutral, 2. Agree, 1. Strongly agree). The total score range from 5 to 35. It is categorized into mild to moderate fear and intermediate FCOVID-19 score. The GAD-7 originated from Spitzer et al. The GAD-7 score was calculated by assigning scores of 0,1,2 and 3 to the response categories of 'not at all', several days, more than half the days and nearly every day respectively. Scores of 5, 10 and 15 were taken as the cut off points for mild, moderate and severe anxiety respectively.

Results

Among 162 antenatal mothers, almost all, (56.8%) age fall below and equal to 27 years with mean = 27, SD = 5.05, 84.6% followed Hindu religion, 46.9% belonged to Upper caste groups, 87.7% mothers were

literate and among them more than one third (38.7%) had studied till secondary level (9 to 12) whereas 41.4% were housemaker and 65.4% belonged to joint family. Among them, 46.9% were primigravida with mean=1.6, SD=0.7, 45.7% were in 3rd trimester of pregnancy with mean=25, SD=9.4, 56.7% women delivered baby by vaginal mode of delivery (Table 1)

Table 1: Characteristics of the study population (n=162)

Sample Characteristics	Frequency	Percentage (%)
Age		
≤27	92	56.8
>28	70	43.2
Mean=27, SD=5.05		
Religion		
Hinduism	137	84.6
Buddhism	19	11.7
Islam	5	3.1
Christianity	1	0.6
Ethnicity		
Dalit	17	10.5
Disadvantaged Janajati	14	8.6
Disadvantaged Non-Dalit terai caste groups	2	1.2
Religious minorities	16	9.9
Relatively advantaged Janajati	37	22.8
Upper caste groups	76	46.9
Educational status		
Illiterate	20	12.3
literate	142	87.7
If literate, Educational level		
Basic Level (up to 8 class)	19	13.4
Secondary Level (9 to 12)	55	38.7
Bachelor	49	34.5
Masters and above	19	13.4
Occupation		
Government Service	9	5.6
Non-Government Service	20	12.3
Self-employed/Business	22	13.6
Farmer	21	13
Animal Husbandry	7	4.3
Daily Labour	15	9.3
Homemaker	67	41.4
Others	1	0.6
Family Type		
Nuclear	56	34.6
Joint	106	65.4

Period of Gravidity		
Primigravida	76	46.9
Gravida 2	70	43.2
Gravida 3	13	8
Gravida 4 and above	3	1.9
Mean=1.6, SD=0.7		
Gestational weeks		
1 st trimester (≤ 12 weeks)	24	14.8
2 nd trimester (12-24 weeks)	64	39.5
3 rd trimester (24-40 weeks)	74	45.7
Mean=25, SD=9.4		
Mode of delivery		
Caesarean Section	65	43.3
Vaginal Delivery	85	56.7

Fig 1 shows source of information regarding COVID-19, Nearly two third of the antenatal mothers (63.60%) got their information from television whereas least information from books (16.70%).

n=162

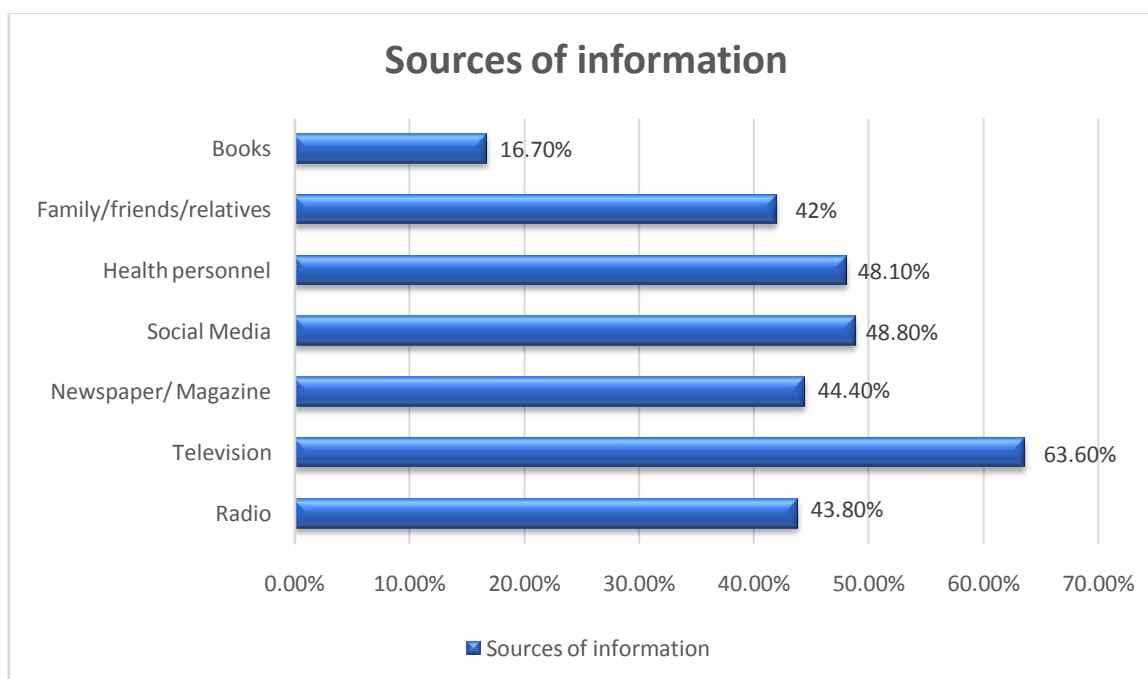


Fig 1: Sources of information regarding COVID-19 among antenatal mothers

The table 2 shows that most of the antenatal mothers (83.3 %) had low perceived risk, 9.3% had moderate perceived score, 7.4% had high perceived score with mean score 23.5 ± 19.1 . Nearly three fourth (71%) had mild to moderate fear with mean FCOVID-19 score of 2-3, 17.3% had score of 1 and few 11.7% had 4-5 FCOVID-19 score with mean score 17.6 ± 6.49 . Almost half (46.3%) had no or little anxiety, 26.5% had moderate anxiety, 21.6% had mild anxiety and 5.6% had severe anxiety disorder with mean score 6.09 ± 5.4 .

Table 2: Frequency and Percentage distribution of participants based on risk perception, fear and anxiety related to COVID-19

n=162

Variable	Frequency	Percentage	Mean±SD
Risk perception			
Low perceived risk	135	83.3	23.5 ± 19.1
Moderate perceived risk	15	9.3	
High perceived risk	12	7.4	
Fear of COVID-19			
No fear	28	17.3	17.6 ± 6.49
Mild to Moderate fear	115	71	
High fear	19	11.7	
Generalized anxiety disorder			
No or little anxiety	75	46.3	6.09 ± 5.4
Mild anxiety disorder	35	21.6	
Moderate anxiety disorder	43	26.5	
Severe anxiety disorder	9	5.6	

Table 3 shows that Pearson's correlation was found to have strong positive correlation among risk perception, fear and anxiety with p-value <0.05 level of significance.

Table 3: Correlation among risk perception, fear and anxiety among antenatal mothers

n=162

Variables		Risk perception	Fear	Generalized anxiety disorder
Risk perception	Pearson correlation	1	0.444**	.192*
	p-value		.000	.014
Fear	Pearson correlation	0.444**	1	.323**
	p-value	.000		.000
Generalized anxiety disorder	Pearson correlation	.192*	.323**	1
	p-value	.014	.000	

**Significance at 0.01 level

*Significance at 0.05 level

Table 4 shows that there was a significant association between ethnicity and generalized anxiety disorder, education level and fear, occupation and risk perception, family type and generalized anxiety disorder with p-value <0.05. However, there is no association between risk perception, fear and generalized anxiety disorder with other selected variables.

Table 4: Association of level of risk perception, fear and anxiety with selected variables.

n=162

Characteristics	Variables	χ^2	p-value
Ethnicity	Generalized anxiety disorder	7.853	.049*
Education level	Fear	6.350	.042**
Occupation	Risk perception	11.270	.004*
Family type	Generalized anxiety disorder	19.961	.000*

*Likelihood ratio

** Pearson’s Chisquare

Discussion

The present study showed that most of the antenatal mothers(83.3 %) had low perceived risk, 9.3%had moderate perceived score, 7.4% had high perceived score with mean score 23.5 ± 19.1 which differs to the study conducted in Iran by Aghababaei et al which showed that more than half of the respondents (72.9%) had a moderate level of risk perception,15.1% had low level of risk perception, 12%had high level of risk perception [5].

Similarly, Nearly three fourth (71%) had mild to moderate fear with mean FCOVID-19 score of 2-3, 17.3%had score of 1 and few (11.7%) had 4-5 FCOVID-19 score with mean score 17.6 ± 6.49 . Nearly half of the respondents (46.3%) had no or little anxiety,26.5%had moderate anxiety,21.6%had mild anxiety and 5.6%had severe anxiety disorder with mean score 6.09 ± 5.4 which is similar to the study conducted in Lahore, India by Din et al which showed that 77 patients (51.3%) had mild to moderate fear and intermediate FCOVID-19 score. 135 patients (90%) had GAD score <7, they had less level of anxiety about their pregnancy [6].

The present study revealed that there was significant strong positive correlation among risk perception, fear and anxiety with p- value <0.05 level of significance. This finding is identical tothe study conducted in Mugla, Turkey by Yesilcinarneta et al which showed there was positive correlation between fear of coronavirus transmission and level of anxiety (p<0.05) [9].

Limitations

It addresses antenatal mothers as they are one of the vulnerable groups during COVID-19 pandemic. Yet, the causal relationships among the variables could not be assed due to the cross-sectional design of the study.

Conclusion

Based on the findings of the study, it is concluded that most of the antenatal mothers had low perceived risk related to COVID-19,three fourth of antenatal mothers had mild to moderate fear, almost half had no or little anxiety. Education, Occupation, Family type, Ethnicity were associated with fear, risk perception and generalized anxiety disorder so it is necessary to pay more attention to the mental health of antenatal mothers. Low perceived risk of antenatal mothers can affect their pregnancy outcome so it is necessary to provide information through counselling during antenatal checkup.

Abbreviation

COVID-19: Coronavirus disease of 2019

OPD: Outpatient department

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Conflicts of Interest

The author declare that they have no competing interests.

References

1. KC A, Gurung R, Kinney MV, Sunny AK, Moinuddin Md, Basnet O et al. Effect of the COVID-19 pandemic response on intrapartum care, stillbirth and neonatal mortality outcomes in Nepal: a propective observational study. *Lancet Global Health*.2020;8: e1273-81. [https://www.thelancet.com/pdfs/journals/langlo/PIIS2214-109X\(20\)30345-4.pdf](https://www.thelancet.com/pdfs/journals/langlo/PIIS2214-109X(20)30345-4.pdf)
2. Pradhan TR. lockdown is officially eased with private vehicles allowed on odd-even basis and shops to open. *The Kathmandu Post*, Kathmandu. 2020. [https://www.thelancet.com/journals/langlo/article/PIIS2214-109X\(20\)30350-8/fulltext](https://www.thelancet.com/journals/langlo/article/PIIS2214-109X(20)30350-8/fulltext)
3. Karkee R, Morgon A. Providing maternal health services during the COVID-19 pandemic in Nepal: *The Lancet Global health*.2020;8 (10). [https://www.thelancet.com/journals/langlo/article/PIIS2214-109X\(20\)30350-8/fulltext](https://www.thelancet.com/journals/langlo/article/PIIS2214-109X(20)30350-8/fulltext)
4. Liang H, Acharya G. Novel corona virus disease (COVID-19) in pregnancy: what clinical recommendations to follow? *Acta Obstet Gynecol Scand*. 99(4):439-442
5. Aghababaei S, Bashirian S, Soltanian A, Refaei M, Omidi T, Ghelichkhani S et al. Perceived Risk and Protective Behaviors regarding COVID-19 among Iranian Pregnant women. <https://mej.springeropen.com/articles/10.1186/s43043-020-00038-z#Sec1>
6. Din YM, Munir SI, Razzaq SA, Ahsan A, Maqbool S, Ahmad O. Risk perception of COVID-19 Among pregnant Females. *Annals of King Edward Medical University*.2020; 26: 176-180. [https://www.thelancet.com/journals/langlo/article/PIIS2214-109X\(20\)30350-8/fulltext](https://www.thelancet.com/journals/langlo/article/PIIS2214-109X(20)30350-8/fulltext)
7. Ahorsu, DK, Lin CY, Imani V, Saffari M, Griffiths MD, Pakpour AH. The fear of COVID-19 Scale: Development and initial Validation. *International Journal of Mental Health and Addiction*. 2020. https://www.nlm.nih.gov/dr2/Fear_of_Covid-19_Scale_2020.pdf
8. Spitzer RL, Kroenke K, Williams JB, et al; A brief measure for assessing generalized anxiety disorder: the GAD-7. *Arch Intern Med*.2006 May 22; 166 (10):1092-7. <https://med.dartmouth-hitchcock.org/documents/GAD-7-anxiety-screen.pdf>
9. Yeşilçınar İ, Güvenç G, Kinci MF, Bektaş Pardes B, Kök G, Sivaslioğlu AA. Knowledge, Fear, and Anxiety Levels Among Pregnant Women During the COVID-19 Pandemic: A Cross-Sectional Study. *Clinical Nursing Research*. 2022 May;31(4):758-65.