

Original Article

Protective Behavior and Psychological Health among Pregnant Women during the Covid-19 Pandemic

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Abstract

Pregnancy is a time of changes in a woman's life because it includes not only psychological but also physiological and anatomical changes. The woman needs all the support and understanding she can get to be able to deliver to a healthy baby. The presence of the COVID-19 pandemic has caused disruptions in many aspects of life in a pregnant woman and her family thereby causing additional mental burden that may cause psychological as well as physiological alterations in a supposedly normal life changes. The aim of the study is to find out the protective behavior, coping mechanisms and psychological status of the pregnant women in order to come up with interventional activities to help these women cope with their current situation and with the pandemic. The respondents of the study were the 35 pregnant women who consented to participate in the study. The study made use of a survey questionnaire to be able to determine and describe the protective behaviors, their coping mechanisms and the psychological status. Results showed that the respondents practice protective behaviors, have good coping mechanisms and are of normal psychological status. There is no association between the variables to the profile of the respondents except for educational attainment which showed positive perfect correlations with protective behaviors and coping mechanisms against depression, anxiety and stress. The number of respondents limits the findings of the study so it was recommended that similar studies be done in a larger population as well as in significant others of the pregnant women be included as respondent. It is also recommended that a longitudinal study be conducted for more extensive findings.

Keywords: pregnancy, protective behavior, coping mechanism, psychological status, educational attainment

Introduction

Pregnancy is a special time full of excitement and anticipation for the coming of a new individual. Pregnancy is characterized by changes in the physical and physiological aspects of the body. These changes may result in certain vulnerability of the woman not only to physical but also to mental stresses that may put the mother and the baby at risk to their well-being. The occurrence of the COVID-19 pandemic has put the mother and child into a different aspect of risk because of the health precautions mandated to limit the transmission of the disease. One of the most affected portion of the population with the imposed lockdowns and limitations of movement of people are the pregnant women. It has exposed the pregnant mother with fear, anxiety and uncertainty for their unborn child. Protocols imposed by the government caused changes in behavior of mothers which may have adverse effects on their physical and mental health. Although these protective and preventive measures imposed by the government to prevent transmission, the fear and anxiety caused by the pandemic has put greater risk for psychological disorders for expectant mothers.

It is a well-known fact that pregnant women and their fetuses are at high risk for infectious diseases. The physiological and anatomical changes during pregnancy increase the susceptibility of the mother to infections but there is little literatures on how the worries and mental well-being affect these component of the population (US Department of Health & Human Services, 2020). The current situation of COVID-19 pandemic has increased the protective behavior of mothers toward their pregnancy paying more attention to their well-being and their fetuses (Aghababaei et.al, 2020). The perceived risk of the expectant mothers to COVID-19 infection has modified their behaviors into protective mode to prevent infections to their babies (Ferrer & Kelin, 2015).

Background of the Study

In the Philippines, the lockdown imposed to prevent the transmission of the COVID-19 has prevented the usually routine prenatal check-ups thus exposing these individuals into greater psychological distress and risk for mental problems (Rubin et.al, 2020). The necessity of lifestyle changes during the pandemic has caused heightened anxiety for the

health and safety of their love ones thus increasing their protective behavior not only towards their unborn child but to all members of their family. Many concerns that were not common during the pre-COVID-19 conditions are now putting undue stress to the pregnant mother such as loss of income to financial crises, day-to-day existence, and limitation of travel and interaction with another person thus increasing the emotional distress of loneliness and depression. Access to health care is another problem that beset the pregnant woman and her husband with most health care facilities being devoted to COVID-19 cases and additional expenses for travel to hospital as results of limited transportation facilities as well as additional expenses for COVID-19 tests to be covered to be able to be seen by their obstetrician.

In the provinces and rural areas, lockdowns are also imposed but of different degrees and restrictions because the National Government of the Philippines through the Interagency Task Force on COVID-19 gave some level of independence on the method of implementation of general health protocols depending on the number of cases and transmission potential of the virus in their locality. In Isabela, there is higher restrictions and mobility requirements imposed by the cities of the province than in municipalities. This scenario has made pregnant women of the cities to experience more stress and anxiety than their counterparts in more rural and far flung municipalities of the province. With this scenario, the researchers would like to find out the protective behavior, coping mechanisms and the psychological health of the pregnant women during the COVID-19 pandemic in order to come up with interventional activities to help these women cope up not only with their pregnancy but also their mental well-being.

The study is aimed on finding out the protective behavior and psychological health of pregnant women during this COVID-19 pandemic. Specifically, the study would like to answer the following questions:

1. What are the protective behaviors exhibited by the pregnant women?
2. What is the level of psychological health of the pregnant women?

3. What are coping mechanisms of the pregnant women with the common stresses brought about by the COVID-19 pandemic?

4. Is there a relationship between their protective behavior and psychological health?

5. Is there a difference in the protective behavior and psychological health of the respondents when grouped according to their profile?

Literature Review

Protective Behavior Concept. Protective behavior is defined as an action enacted by a person to keep oneself and others safe from harm (West & Michie, 2020). Protective behavior commonly exhibited this COVID-19 is directed towards the prevention of transmission of the virus from one person to another through the following: social distancing, wearing mask and shield, and hand washing and use of hand sanitizers after handling things that are commonly being touched by many people like door knobs. The frequency of protective behaviors is influenced by the perceived risk by the individual to particular threat to their health and safety (Wachinger et.al, 2013). Fear and anxiety from the possible outcome of infection with COVID-19 lead to overreaction, over-perception and misunderstanding of the real issue at hand (Huynh, 2020). Risk perception is predictive of protective behavior and influenced by the level of knowledge and information about the COVID-19 outcomes (Aghababaei, 2020; Taghrir et.al, 2020). Risk perception however is based on previous life experiences, the context of which the risk occurred and sources of risk (Simmons & Goldberg, 2011). The Protection Motivation Theory introduced by Rogers in 1983 has been used to explain and predict health protective behaviors through cognitive responses as an outcome of fear arising from environmental and intrapersonal sources of information that activates the mechanisms of threat and coping appraisal. The perceived severity of threat lead to vulnerability to the threat while the coping appraisal leads to the belief of overcoming the threat and results in a response to limit or eliminate the threat (Conner & Norman, 2021).

Psychological Health and Protective Behavior. Psychological health is synonymous with mental health because it involves the emotional, behavioral

and social aspects of the mind and its well-being. It is the level of maturity and state of normality according to the given standards of the society and experts (Levitas, 2020). Measuring the state of psychological well-being is very difficult because of the limited tests, diagnostic standards and intercultural variations in experiences as well as of many social and mental complexities of a person. It is the recommendations of many experts to combine self-assessments, diagnostic and confirmatory testing to come up with an objective and accurate measurements (King, 2018). The maturity of mental well-being or its “normalcy” will dictate how the individual will react in the possible right manner to overcome stressors/threats to his overall state of health. It is manifested in ways of acting, doing or evading the threat (Ferrer & Klein, 2015).

Important determinants of mental health and behavior are cognition and self-efficacy (Han Mo et.al, 2021). Cognition is defined as the processes of the mind for knowledge and understanding in order to be able to make sound judgment and problem-solving (Cherry, 2020). Self-efficacy is defined as the ability to execute actions necessary for one’s survival. It is first defined by Albert Bandura in 1877 in his Social Cognitive Theory which states that learning is acquired through a two-way process of interaction between the individual with his environment and manifested in his behavior which can be reinforced or delimited by present experiences (LaMorte, 2020).

Methodology

Research Design. The descriptive quantitative method was used to find out the protective behavior and psychological health of the pregnant women respondents. This method according to McCombes (2020) is the most appropriate method for the study because it intended to gather, analyze and classify data gather about conditions, trends and make accurate interpretation of data while making use of a systematic and organize process of describing a population, situation or phenomenon. The study was conducted in the City Health Office in the Southwestern part of Isabela where prenatal and maternal health services were being provided to its constituents. There were 35 pregnant women who voluntarily consented to be part of the study during a 2 week period of data gathering. Table 1 below shows the demographic profile of the respondents:

Table 1. Demographic Profile of the Respondents

Variables		Frequency	Percent
Age	15-19	7	20.0
	20-24	5	14.3
	25-29	12	34.3
	30-34	5	14.3
	35-39	3	8.5
	40-44	2	5.7
	45-49	1	2.9
Civil Status	Single	5	14.3
	Married	30	85.71
Educational Attainment	College undergraduate	15	42.86
	College graduate	14	40.0
	Vocational course	6	17.14
Employment Status	Employed	16	45.71
	Self-employed	15	42.86
	Unemployed	4	11.43
Age of Gestation	First trimester	4	11.43
	Second trimester	15	42.86
	Third trimester	16	45.71
Obstetrical History	Primiparous	12	34.29
	Multiparous	23	65.71
Total		35	

Table 2. Interpretation of the Five-point Scale of Responses

Scale	Numerical Range	Description	Interpretation for part 2	Interpretation for part 4
5	4.50-5.00	Strongly agree	Highly protective	High coping
4	3.50-4.49	Agree	Protective	Coping
3	2.50-3.49	Undecided	Somewhat protective	Somewhat coping
2	1.50-2.49	Disagree	Slightly protective	Slightly coping
1	1.00-1.49	Strongly disagree	Not protective	Not coping

Table 3. Interpretation of the Scores in the Psychological Health Self-assessment

Status	Depression scale	Anxiety scale	Stress scale
Normal	0-9	0 - 7	0 - 14
Mild	10 - 13	8 – 9	15 – 18
Moderate	14 - 20	10 - 15	19 – 25
Severe	21 - 27	15 - 19	26 – 33
Extremely severe	28+	20+	34+

Research Tool/Techniques. The researcher made use of the survey questionnaire to gather the data needed for the purpose of the study. The questionnaire was adopted from three (3) related studies. The part 2 of the questionnaire inquires about the protective behavior exhibited by the respondents was adopted from the article of Aghababaei et.al (2020), Philip et.al (2020), and Tian et.al (2020) and part 3 is about the psychological health status of the participants which is a self-assessment which made use of the DASS-21 scale. Part 4 is about the coping mechanisms used by the respondents to deal with the mental stresses of the COVID-19, which is adopted from the study of Philip et.al (2020).

Data Analysis. The data was subjected to the statistical analysis using the Microsoft Excel 2013 and the SPSS to find correlation of the given variables. Responses for part 2 and 4 of the questionnaire made use of a five-point scale: 5 – strongly agree, 4 – agree, 3 – undecided, 2 – disagree and 1 – strongly disagree. Part 2 of the questionnaire followed the guidelines of scoring the responses as: 3 – most of the time, 2 -considerable part of the time, 1 – some of the time and 0 – not at all. The interpretation is shown in the tables below:

Data Gathering Procedure. The researchers had undertaken the necessary protocols in conducting the study. The research endeavor was first approved by the Dean of the College of Nursing, Public Health and Midwifery through a letter of request. The request for permission to conduct the study was given to the City Health Officer for approval prior to the data gathering. Collection of data was done personally by the researchers to ensure any questions or confusion on how to answer the survey can be dealt with immediate for better response rate from the participants. Data gathering took place for 2 weeks period due to the new restrictions imposed by the City Government. Retrieval was immediate. Tallying, treatment and interpretation follows thereafter.

Ethical Considerations. Informed consent, voluntarism and confidentiality are the major ethical considerations of the study. No respondents were forced to participate and had full knowledge and understanding of the goals and objectives of the study. All information given to the researcher were put in strict confidentiality in relation to the data privacy law.

Results

The following tables present the salient findings of the study:

Table 4. Protective Behavior of the Respondents

Items	Mean	Responses	Interpretation
1. Cancelled meeting with family and friends	1.49	Strongly disagree	Not protective
2. Do not eat food prepared outside home or in restaurants	4.48	Agree	Protective
3. Cancelled going to barber shops or beauty salons	4.00	Agree	Protective
4. Reduced use of public transportation	3.28	Undecided	Somewhat protective

5. Do not go out shopping	4.20	Agree	Protective
6. Reduced going to close spaces like markets and malls	4.20	Agree	Protective
7. Avoid coughing/sneezing around people	4.46	Agree	Protective
8. Avoid places with many people gathers	4.40	Agree	Protective
9. Increased cleaning and disinfections of hands and things	4.50	Strongly agree	Highly protective
10. Washed hands more than usual	4.78	Strongly agree	Highly protective
11. Avoid hugging and kissing children and family members	4.50	Strongly agree	Highly protective
12. Kept distance from others in home or outside	2.49	Disagree	Slightly protective
13. Clean and disinfect items delivered from outside (abroad or locally)	3.49	Undecided	Somewhat protective
14. Watch TV programs that teach basics of health care and prevention of illness	2.49	Disagree	Slightly protective
15. Use hand sanitizers daily or more	4.78	Strongly agree	Highly protective
16. Stay away from others with colds/cough/ill at home, public transport or public places	4.50	Strongly agree	Highly protective
17. Wear mask and face shield when going out	4.80	Strongly agree	Highly protective
18. Still follow pre-natal check-up schedules during the COVID -19	3.49	Undecided	Somewhat protective
OVERALL MEAN	3.91	AGREE	Protective

The above table showed the protective behavior manifested by the pregnant respondents. The overall all mean showed that the respondents have practiced protective behaviors. The respondents were undecided on the use of public transportation, to clean and disinfect items from the outside especially when delivered from abroad and to follow the scheduled prenatal check-ups. The participants disagree to follow protocols on cancelling meetings with family and friends and disagree on keeping distance from family and watching TV programs that deals with health related issues. These actions are slightly protective behavior on the part of the respondents. It can be gleaned from table 5 that most of the respondents have normal psychological health. There were no respondents who suffer from severe or extremely severe depression, anxiety or stress. But it is noteworthy to mention that there were respondents who suffers from moderate depression (3), moderate anxiety (2) and moderate stress (4).

Based on the data on table 6, the respondents showed high coping with the challenges posed by the COVID pandemic. The most important coping mechanisms practiced by the respondents were: ignoring fake news, developing preparedness to meet challenges, awareness of the updates on COVID-19 and positive thinking. While agree on regular scheduling of daily activities, practice of indoor recreational and relaxation activities and going to health facilities only if there are symptoms of illness are noted to cope with the present pandemic situation (Poudevigne & O'Connor, 2006).

Pearson Product Moment Correlation was conducted to determine if how strongly the profile variables are related to the protective behavior and coping mechanisms. There is a moderate to strong relationships between educational attainment and protective behavior ($r=0.41$, $p=0.14$). This implies that if a person has better or higher educational attainment, the better or have more protective behavior against the COVID-19 will be. The rest of

the profile variables do not have any relationship on protective behavior and coping mechanisms. To determine the strength of relationship between protective behavior and coping mechanisms, the Pearson Product Moment Correlation was used. Results showed that there is a strong to perfect relationship between the protective behavior and coping mechanisms ($r=0.78, p<0.001$). This means that a person with a high protective behavior against COVID-19, the higher is his coping mechanisms against depression, anxiety and stress brought about by the COVID-19 situation. Chi-square test of independence was used to test the relationship of Psychological status, protective behavior and

coping mechanisms. The results showed that a person with high protective behavior against COVID-19 will exhibit high coping mechanisms against depression, anxiety and stress.

Using the Chi-square test of independence showed that there is no relationship between the profile variables and the psychological status of the respondents. This finding is contrary to the results of the study of Xi et.al (2020) which showed that behavior changes differs according to age and gender during the COVID-19 epidemic.

Table 5. Frequency and Percent Distribution Psychological Status of Respondents in the Self-Assessment

Psychological status	Depression		Anxiety		Stress	
	f	%	f	%	f	%
Normal	24	68.6	30	85.7	28	80.0
Mild	8	22.9	3	8.5	3	8.5
Moderate	3	8.5	2	5.8	4	11.5
Severe	0		0		0	
Extremely severe	0		0		0	

Table 6. Mean Responses of Respondents on Coping Mechanisms

Item	Mean	Responses	Interpretation
1. Awareness on the day to day updates on COVID-19 for appropriate precautionary measures	4.52	Strongly agree	High coping
2. Develops preparedness to meet the challenges like scarcity of resources	4.53	Strongly agree	High coping
3. Ignoring fake news and social media posts that spread panic	4.60	Strongly agree	High coping
4. Regular scheduling of daily activities	4.47	Agree	Coping
5. Inclusion of indoor recreational activities and relaxation exercises to daily practice	4.45	Agree	Coping
6. Approaching health care system if any symptoms of illness develop	4.45	Agree	Coping
7. Positive thinking and installation of hope	4.50	Strongly agree	High coping
OVERALL MEAN	4.50	Strongly agree	High coping

Table 7. Relationships of Profile variables, Protective Behavior and Coping Mechanisms

Variable	Protective Behavior		Coping Mechanisms	
	r	p-value	r	p-value
Age	-0.15	0.379	-0.0r	0.902
Educational Attainment	0.41	0.014	0.20	0.259
Civil Status	-0.19	0.274	-0.16	0.372
Employment Status	-0.16	0.403	-0.05	0.767
Age of Gestation	0.16	0.364	0.17	0.331
Obstetrical History	-0.19	0.288	-0.07	0.674

Table 8. Relationship between Protective Behavior and Coping Mechanisms

Variables	Protective Behavior	
	r	P=value
Coping Mechanisms	0.78	<0.001

Table 9. Relationship of Protective Behavior, Coping Mechanisms and Psychological Status

Protective Behavior	X ²	df	p-value
Depression	25.43	6	<0.001
Anxiety	36.68	6	<0.001
Stress	35.90	6	<0.001
Coping Mechanism			
Depression	25.58	6	<0.001
Anxiety	26.31	6	<0.001
Stress	39.93	6	<0.001

Table 10. Relationship between Profile Variables and Psychological Status

Variables	X ²	df	p-value
Age			
Depression	13.32	12	0.346
Anxiety	6.69	12	0.877
Stress	9.34	12	0.674
Civil Status			
Depression	2.67	2	0.263
Anxiety	0.97	2	0.615
Stress	1.46	2	0.482
Educational Attainment			
Depression	2.15	4	0.709
Anxiety	1.56	4	0.816
Stress	3.04	4	0.552
Employment			
Depression	1.34	4	0.854
Anxiety	1.26	4	0.868
Stress	1.65	4	0.800
Age of Gestation			
Depression	13.03	4	0.110
Anxiety	5.68	4	0.224
Stress	11.18	4	0.250
Obstetrical History			
Depression	1.71	2	0.425

	Anxiety	0.23	2	0.890
	Stress	2.03	2	0.363

Discussions

The respondents practiced protective behaviors except those that concerning their families which makes them vulnerable to infections. The protective behaviors of respondents is a way of dealing with the Covid-19. Pregnancy makes the woman vulnerable to the Covid-19 as the elderly and the very young (WHO, 2021). Recognition of the risks translates into higher preventive and protective behaviors of pregnant mothers but often are deterred by cultural and ethnic beliefs that define how they practice health care protocols (Aghababaei et.al, 2020). Perceptions about the risks of contacting the illness as well as of the harm that can damage or affect the fetus can be of great influence in the attitude and protective behaviors of these group of women (Wang et.al, 2021). How risk of infections are perceived by the pregnant woman depends on her previous experiences, the perceived degree of risk and the overall idea of the risks spells out how the expectant mother will respond to the risk (Dashraath et.al, 2020).

The respondents claimed of having normal psychological health. Although exposed to many stresses posed by pregnancy, the participants assess their mental health as normal. Pregnancy is a time of physical, physiological, mental and emotional changes in the woman resulting from the hormonal imbalances and nutritional deficiencies of the condition. All of these contributes to the changes in the psychological status of the woman (Trifu et.al, 2019). The COVID-19 pandemic has added more stress for the expectant mother to endure. Support from the family, friends and other groups can be of great help for the woman to be sane and to develop resilience and cope with the situation (Iranzad, 2014). Coping with the stresses brought about by the pandemic is reflected through the strategies to limit or prevent the negative impact of these stresses on the mental health of the pregnant women (Khoury et.al, 2021).

There is high coping with challenges posed by the Covid-19 pandemic among the respondents of the study. They claimed that practice of scheduling daily activities and indoor recreation and relaxations

has helped them in coping with the rigors posed by the Covid-19 situation. Coping with the altered daily life activities and the stress that comes with it depends on the cognitive and maturity of the individual. Social and environmental support also play great influence on the inherent or developed resilience of the pregnant woman (Han Mo et.al, 2021). Social support was found to have protective effect as it helps the expectant mother cope with the stresses not only of the pregnancy but also of the COVID-19 pandemic (Ajala & Olorunsaiye (2009). Coping mechanisms of the pregnant women is mediated by the social support. Better coping is seen among women with people around them that are ready to give psychological, emotional as well as physical support in terms of economic and financial needs (Khoury et.al, 2021).

The moderate and strong relationship between the educational attainment and protective behaviors of the respondents show how knowledge of the Covid-19 infection and transmission had guided the respondents on how to deal with it. Knowledge and awareness of what happens in the immediate and distant environment leads to better coping mechanisms, protective behaviors and positive and healthier mental status. Knowledge and understanding of situations and current risks are influenced by the level of education of an individual (Rattay et.al, 2021)

There is a strong to perfect relationship between the protective behavior and coping mechanisms of the respondents. According to Edward and Warelow (2005), resilience and coping skills for any adversity are functions of individual psychological and environmental interplay for both adaptation and survival. Coping mechanisms are composed of emotional and intellectual faculties which are manifested in protective behaviors.

The pregnant respondents practiced high protective behaviors and exhibit high coping mechanisms against depression, anxiety and stress. This results is similar with the findings of Akdeniz et.al (2020) which say that the level of anxiety and stress significantly increase protective behavior because of the fear of contacting the disease. The level of

anxiety however, varies from person to person depending on specific factors that mediate the occurrence of anxiety and stress. High levels of stress and anxiety increases the probability of risky behavior engagement (Riad et.al, 2020).

Results of the study showed no relationship between the profiles and the psychological status of the respondents. Although the study of Xi et al. (2020) showed otherwise in terms of age and gender during the Covid-19 pandemic especially among the 19-34 years old individuals. The COVID-19 pandemic has greatly affected mental health status of most people especially those experiencing isolation due to lockdowns imposed to curtail transmission of the virus. The review of current situation done by Vindegaard and Benros (2020) showed that the COVID-19 pandemic has reduced mental well-being and increased in the incidence of psychological to psychiatric complications.

Conclusions: The following conclusions were drawn:

1. The respondents have highly protective behaviors, were of normal psychological status and high coping with the stresses they experienced during the covid-19 pandemic.
2. Cancelling meetings with family and friends is one activity that the respondents did not practice during the pandemic even when this is not a protective behavior. This indirectly show that the emotional support they need is provided by meetings with the family and friends.
3. The respondents are highly coping with the stresses of covid-19 pandemic. To cope with the situation, the respondents keep themselves updated and aware of the current situation of the Covid-19 pandemic, being prepared for what is coming up whether good or bad and keeping positive outlook that everything will turn out alright.
4. There is high to perfect positive association between protective behaviors and coping mechanisms of the respondents against depression, anxiety and stress.
5. There is no relationships between protective behaviors, coping mechanisms and psychological status when grouped

according to age, civil status, and employment/occupation, age of gestation and obstetrical history of the respondents.

6. There is positive correlation between protective behaviors and coping mechanisms against depression, anxiety and stress with level of educational attainment, this means that the higher the educational attainment, the more practice of protective behaviors and better coping skills and psychological well-being.

Recommendations: The study was conducted among a small number of participants because of the COVID-19 situation and the health protocols mandated by the local government to limit the transmission of the disease. It is in this regard that further studies be undertaken on the protective behavior of not only the pregnant mother but also those close to her, such as her husband, close relatives like the mother and siblings as well as in laws to find out how they protect the expectant mother from being infected with the coronavirus. It is noteworthy to recommend studies on how the husbands cope with the life-changing effects due to the pregnancy and the covid-19 pandemic. A longitudinal study be conducted to find out how the psychological well-being changes or maintained by the pregnant women along the gestational journey.

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