

## Ethical Dilemmas and Perceived Risk during COVID-19 pandemic

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### Abstract

**Background:** nurses are expected and feel obligated to provide care despite health risks for themselves and their loved ones, they feel subject to a greater degree of ethical pressure. **Aim of the study:** to assess attitude of nurses toward ethical dilemma during the covid -19 outbreak and perceived risk to provide care. **Subjects and Methods: Research design:** A descriptive design was utilized in this study. **Setting:** This study was conducted at Al-Ahrar zagazig Teaching Hospital. **Subjects:** A simple random sample was selected from nurses (n= 233). **Tool of data collection:** Two tools were used for collecting data: The ethical dilemmas, Perception of risk toward COVID-19 questionnaire. **Results:** The most of studied nurses had negative attitude regarding various ethical dilemmas, As well they had an excellent level of perception of risk toward COVID-19. **Conclusion:** There was a positive significant relation between perception of risk toward COVID-19 and nurses attitude regarding various ethical dilemmas **Recommendation:** it is recommended that Continuous nursing education and in-service training programs about how to deal with patient with COVID-19 with the necessary educational facilities and materials necessary to upgrade the knowledge and practice of nurses, and improve nursing care offered and patients' outcome.

**Key words:** Ethical dilemmas, Perceived risk, COVID-19 and Pandemic.

### Introduction

Corona virus disease (COVID-19) is a contagious disease caused by severe acute respiratory syndrome coronavirus (SARS-CoV-2). The first known case was identified in Wuhan, China in December 2019. The disease has since spread worldwide, leading to a pandemic. Since the first outbreak of the virus, a rapid spread occurred in the world with alarming numbers of infected people it become one of the large-scale outbreaks known in the modern world affecting all nations <sup>(1)</sup>.

Health care workers (HCWs) especial nurses often had complex and conflicting thoughts and feelings about balancing their roles as healthcare providers and parents, feeling professional responsibility but also fear of this new disease, associated coronavirus patients, and guilt about potentially exposing their families to infection by working during the COVID-19 emergency They are facing an unprecedented emergency and insidious invisible danger, which has pushed the

national health service to its limits, increasing workloads<sup>(2)</sup>.

The significant spread of Covid-19 around the globe has affected people of all nations, races, and socio- economic groups. Moreover, the severity of the disease's symptoms have dramatically increased and challenged the duties of healthcare providers for protecting the health of their co-citizens. The rapid and serious outbreak of this pandemic has resulted in urgent responses for detecting and diagnosing patients, treating and managing their care, and combating further contamination <sup>(3)</sup>.

Positioned at the front lines of the fight against the disease, nurses are at increased risk of infection for themselves, their families, and other people with whom they come into contact. As a result, they may choose or be forced to maintain isolation from their families during this period Caring in times of pandemics is extremely stressful <sup>(4)</sup>.

Nursing care especially is highly demanding, with nurses experiencing a significant increase in the volume and intensity of their work while having to also accommodate new protocols and constant changes in the management of the disease<sup>(5)</sup>. This source of anxiety is exacerbated as more healthcare professionals are required to undergo quarantine during the outbreak<sup>(6)</sup>. The combination of high job demands and low resources—including personal protective equipment for healthcare providers, such as respirators, gloves, face shields, gowns, and hand sanitizers<sup>(7)</sup>.

Most issues that face nurses when dealing with patients with COVID-19 can be summarized into two main types. The first involves staffing shortages, depression related to anxiety and fear of infection, a lack of communication with patients, and exhaustion due to working long hours without proper nourishment. The second type involves a lack of medical supplies and resources, such as personal protective equipment (PPE)<sup>(8)</sup>.

Perception of risk might be explained by differences in the pandemic response strategies and provision of resources to protect this critical workforce among organization.<sup>(9)</sup> Indeed, having a high risk of exposure to COVID-19 might negatively impact the well-being and performance of health workers perceived risks at work are aspects of work design and the social, organizational, and management contexts of work that could cause psychological or physical harm.

Psychosocial risks and work-related stress are among the most challenging issues in occupational safety and health, impacting significantly on the health of individuals, organizations, and national economies<sup>(10)</sup>. They arise from inadequate work design, management, organization, and poor social context of work, resulting in adverse physical, psychological, and social outcomes such as work-related stress depression, or burnout. More risks are related to low job satisfaction, health problems, work accidents, work-related stress and burnout<sup>(2)</sup>.

### **Significance of the study:**

The ethical tension and dilemmas posed by the COVID-19 outbreak and its related caregiving provision, exploring and analyzing these tensions and dilemmas is important. It is also valuable to evaluate the relationships between these factors to work during the pandemic, As such, this study focuses on care provided by nurses during the COVID-19 pandemic.

### **Aim of the study:**

The aim of the study was to assess attitude of nurses toward ethical dilemma during the COVID-19 outbreak and to what extend this is associated with there perceived risk to provide care at Al-Ahrar zagazig teaching hospital.

### **Research Questions:**

- How do nurses respond to ethical dilemmas and tension during the COVID-19 outbreak?
- To what extent the nurses responses to perception of risk during covid-19 outbreak?

### **Subjects and methods:**

#### **Research design:**

Descriptive design was used to achieve the objectives of the present study.

#### **Study setting:**

The study was conducted at Al-Ahrar zagazig teaching hospital.

#### **Study subjects:**

A simple random sample, the sample size was 233 out of 500 nurses, who agreed to participate in the study.

#### **Tools of data collection:**

Two tools were used to collect necessary data.

**Tool I: Ethical Dilemmas** questionnaire. It was developed by **Sperling**<sup>(12)</sup>.

Composed of two parts:

**Part I:** Socio demographic and work-related characteristics of nurses to collect data about; age, year of experience, marital status, level of education, department type, gender, previous training about how to

deal with patient with covid 19, treat a patient who was suspected to have covid 19  
Part II: Refer to the extent to which they agree with various statements that represent ethical dilemmas during COVID-19, consists of 12 items with a five-point scale.

**Scoring system:** Subjects' response was scored on a five-point Likert scale, range from (1) = very true to (5) = not at all true. The nurses' attitude regarding ethical dilemmas were positive if the score (equal or above 60%) while it was negative if the score (less than 60%)

**Tool II: Nurse Perception on the risk of covid questionnaire:** It was developed by **Samadipour and Ghardashi** <sup>(13)</sup>. to assessed the perception of nurses regarding risk for contracting COVID-19. It include 20 items covered by 5 sub-scales (cognitive, cultural, political, social and emotional factors),

**Scoring system:** The responses of nurses to the scale were on 5 point likert scale ranged from 5( strongly agree ) to 1(strongly disagree) but in the reversed questions the score is reversed , 5( strongly disagree ) to 1(strongly agree ). Risk perception levels of nurses was poor if the score was on ( 20-39 ) , moderate if the score was on ( 40-59 ) , good if the score was on ( 60-79 ) and excellent if the score was on ( 80-100 ).

#### **Content validity and Reliability:**

It was established for assure of content validity by a panel of expertise's in the field at Zagazig University who revised, relevance, comprehensiveness, understanding, and ease for implementation and according to their opinion minor modification were applied and reliability test was done for self-administered questionnaire and reliability statistics of the study, Cronbach's Alpha was (0.93) for ethical dilemmas, and (0.87) for Perception of risk.

#### **Fieldwork:**

The collection phase lasted for 3months during the period from the beginning of

September 2022 to the end of November 2022.

The first phase of the work is preparatory phase that done by the meeting with head units after obtaining the official permission, to clarify the objective of the study and applied methodology. The second phase that done by meeting the study sample, each nurse was met individually, got a full explanation about the aim of study and was invited to participate. The nurse who gave his /her verbal informed consent to participate was handed the self-administrated questionnaire and was instructed during the filling.

The data were collected in the morning shift and afternoon shifts, the time used for fulfillment the self-administrated questionnaire ranged between 20- 30 minutes for each nurse according to nurse's physical and mental readiness .

#### **Pilot study:**

A pilot study for tools of data collection was carried out in order to test whether they are clarity, applicability, relevance and feasibility, and time consuming to fill the tool. For this study, the researcher randomly selected 23 nurses (10.0 %) to participate in the pilot testing of the questionnaire sheet.

#### **Administrative and ethical considerations:**

An oral consent was taken from nurses for permission to participate in research process. The agreement for participation of the subjects was taken after explaining the aim of the study and component of the tool to them; they were given the opportunity to refuse to participate and to withdraw at any time. In addition, confidentiality, and anonymity of the subjects were assured through coding of all data.

There was no risk in study subject during application of the research.

#### **Statistical analysis:**

The data were organized, categorized, tabulated and statistically analyzed by using SPSS, (Statistical Package for Social Sciences), software program version 17.

Data were presented using descriptive statistics in the form of frequency, percentage, the mean, standard deviation; correlation coefficient, and chi-square were also used to examine the relation between the study variables. A significant level value was considered when  $p < 0.05$  and a highly significant level value were considered when  $p < 0.001$ .

## Results:

**Table (1):** The demographic characteristics of nurses. It is clear from the table that, slightly less than half of studied nurses were in the age group equal and more than 30 years old with mean age  $26.57 \pm 1.412$ , had nursing diploma and had more than five to ten years of experience (40% & 44.4%, respectively) the highest percentage of them were female, married, and working in ICU, (70.7%, 90.7%, 44.4%, 60% & 44.4%, respectively).

**Table 2:** Shows that distribution of job characteristics of the nurses. It is clear from this table all nurses reported that there is a clear guidelines for treating patient with covid 19 and they are Live with the family at the time of the outbreak.

**Table 3:** Shows distribution of nurses' attitude regarding various ethical dilemmas during the COVID-19 pandemic. It is clear from this table all nurses reported that they are true in most cases/very true in the items related to; every patient has a right to equal access to optimal treatment during covid 19 pandemic regardless of his/her age and health background, old sick patients should not be connected from ventilator to allow access to younger patients when there is shortage, they fear of self-contamination and contaminating others (family or parents) "If he/she contract the virus, they put on my protective measures before entering, they separate between babies and their mothers if they are suspected as being positive for COVID-19, they afraid that other patients neglect themselves for fear of coming to the clinic/hospital, and it is more difficult to provide telephone support to patients when the clinics are closed and empty. On the other hand, all nurses reported that they are not true in most cases/Totally not true in the

items related to patients are smoking or not taking protective measures should receive less priority for treatment in comparison to other patients and old sick patients should be disconnected from ventilator to allow access to younger patients when there is shortage

**Table 4:** show levels of nurses' attitude regarding various ethical dilemmas during the COVID-19 pandemic. The highest percentage of nurses had a -ve attitude regarding various ethical dilemmas during the COVID-19 pandemic. (86.7%), while the lowest percentage of nurses had a +ve level of attitude (13.3%)

**Table 5:** the highest percentage of nurses had an excellent level of risk perception (75.6%), while the lowest percentage of nurses had a poor level (2.2%).

**Table 6:** Shows that there was no statistically significant relation between total levels of nurses' attitude regarding various ethical dilemmas and their personal characteristics during the COVID-19 pandemic.

**Table 7:** shows that there was no statistically significant relation between risk perception levels and personal characteristics of nurses regarding COVID-19 pandemic

**Table 8:** Correlation between ethical dilemmas, and risk perception during the COVID-19 pandemic. There is no statistically significant correlation between ethical dilemmas, and risk perception during the COVID-19 pandemic

## Discussion:

### Regarding the personal characteristics of nurses.

The results of these study shows that slightly less than half of studied nurses were in the age group equal and more than 30 years old, had nursing diploma and had more than five to ten years of experience the highest percentage of them were female, married, and working in ICU.

These results may be due to the long history of the feminine nature of nursing profession, and the majority of Egyptian nurses were graduate of secondary nursing schools. These results were in agreement with **Roberts et al** <sup>(14)</sup>. they conducted a study in British to identify and characteriz the self-reported issues that exacerbated or alleviated their concerns during the first wave of the COVID-19 pandemic and found that about two thirds of nurses was female and their age range between 20-36 years old.

On the same line a study conducted in Indian by **Bhatt and Singh** <sup>(15)</sup>. They found that the most of nurses was female, and age less than 30 years old. Similarly, a study conducted at London by **Chehrehgosh** <sup>(16)</sup> to decrease psychological pressure among the medical staff and found that most nurses were females and more than third of them had 10 or more years of experience.

Concerning job characteristics of the nurses, the result of the current study shows that all of nurses had a clear guidelines for treating patient with covid 19 and they live with the family at the time of the outbreak. This findings might be due to the important role of healthcare managers in conducting training, program, providing formal guidelines, procedures and lectures for nurses about COVID pandemic.

These finding was in the same consequence with a study conducted by **Giménez et al** <sup>(17)</sup> in Spain to analyze the perception of COVID-19 by nurses, especially about measures, resources, and impact on their daily work. Also, to analyze these professionals' psychosocial risks and the relationship between perception of COVID-19 and these risks and found that all nurses had attended training courses online for treating patient with COVID.

### **Nurses attitude regarding various ethical dilemmas during the COVID-19 pandemic**

Concerning total level of attitude regarding various ethical dilemmas, the finding of the present study indicated that more than three quarters of nurses had a -ve attitude regarding various ethical dilemmas during the COVID-19 pandemic. While the minority of nurses had a +ve level

of attitude. These result could be due to the nurses feel respected equally and their ideas, opinions and contributions are valued and they are being involved in the decision making to treat all patients fairly regardless gender, age, condition, their leaders may have inspired them to achieve hard and challenging goals and they need to help patients and their families to recover and go to back to their home

This result goes in the same line with a study by **Gebreheat et al.** <sup>(18)</sup>. They conducted a study at Ethiopia to identify the main ethical challenges faced by nurses during COVID-19 pandemic and found that Nurses have high level negative attitude the ethical challenges of COVID-19 pandemic. The results of the of current study indicate that all studied nurses are true in most cases/very true that every patient has the right to equal access to optimal treatment during covid 19 pandemic regardless of his/her age and health background. This is may be due to the respect and following the code of ethics among nursing profession which focused on patient treatment should not be refused during the pandemic

This result was agreement with **McKenna et al.** <sup>(19)</sup>. They conducted a study at China to identify the ethical issues for nurses in COVID-19 and found that all of nurses had the justice ensuring equity and fairness in how patients were treated. This results was disagreement with **Sperling** <sup>(12)</sup>, they conducted a study at Israe1 and found that more than half of nurses believe they have the right to refuse to treat certain patients during the COVID-19 outbreak.

The results of these study shows that all nurse reported that it is true in most cases/very true that old sick patients should not be connected from ventilator to allow access to younger patients when there is shortage. These results may be due to challenges on public health ethics and nursing guides to justify their decisions as to whether they are equally to treat all COVID-19 patients regardly there ages. This finding was in agreement with **Gebreheat et al.** <sup>(20)</sup>. they conducted a study at Ethiopia to identify the main ethical challenges faced by nurses during COVID-19 pandemic and

found that the majority of nurses had unsatisfactory to disconnect old sick patient from ventilator to younger patient .

The results of the of current study indicate that all studied nurses are true in most cases/very true that nurse fear of self-contamination and contaminating others (family or parents) .These results may be due to direct contacting nurses to infectious patient with covid 19 and infectious surrounding environment as well as the probability of scarce of protective measures so they fear of self contamination and contaminating.

This finding was in agreement with **Elshaer et al.** <sup>(21)</sup> who conducted a study at Alexandria to asses the spread of infection to their colleagues, families, and community and found that that most of nurses perception and commitment with personal protective equipment and hand hygiene fear of being contaminated during COVID-19.

The results of these study shows that all nurse reported that it is true in most cases/very true that providing care in hard conditions: “every time i put on my protective measures before entering. These results may be due to nurses face risks arising from use heavy PPE such as physical marking on face, heat stress and dehydration. This agree with **Geneva** <sup>(22)</sup> who conducted a study at France to ensure safety and health at work and found that all of nurses work under hard condition and environment not well ventilated.

The results of the of current study indicate that all studied nurses are true in most cases/very true the hospital expects us to separate between babies and their mothers if they are suspected as being positive for COVID-19 most of us object doing this . These results may be due to suspected mothers may transmit virus to their babies and they were also experiencing moral distress under prolonged pressure to the ethical principles of autonomy, justice, beneficence.

This finding was in agreement withn **Na Zhu et al.** <sup>(23)</sup> who conducted a study at China to examine ethical decisions of health

professionals in COVID- 19 pandemic and found that the more than half of nurses had provided optimal care to babies away from her mother which have lack of knowledge.

### **Risk Perception of nurses regarding COVID-19**

Regarding the nurses' risk perception level, the results of the current study shows that the highest percentage of nurses had an excellent level of risk perception. This is may be due to direct contact with covid-19 patients in the lack of personal protective equipment, inadequate support for nurses' personal and fear of transmitting the disease to their families during the pandemic.

This result goes in the same line with a study conducted by **Seres et al.** <sup>(24)</sup>. in Germany to assess the effect of face masks and distances kept by others as a tool for curbing the spread of COVID-19 and found that all nurses had an excellent level of risk perception and can prevent covid-19 disease by absolutely necessary to take measures to prevent Covid-19 disease , and wearing a mask and maintaining a physical distance.

### **As regard the relation between total attitude level of studied nursing, and personal characteristics of nurses:**

Concerning the relation between total attitude level of studied nursing and their demographic characteristics, the present study revealed that, there was no statistically significant relation between total levels of attitude regarding various ethical dilemmas and personal characteristics of nurses during the COVID-19 pandemic .This is may be due to all nurses follow code of ethics in providing all needed care to all patients handledvires and they follow protective measures to protect themselves .

This comes in disagreement with a previous studies of **Irandoost et al.** <sup>(25)</sup>. they performed a study in iran to describe the problem and adaptation techniques of nurses caring for covid-19 patient ,and found that nurses increased personal competencies gained as one ages and

having more experience in work and all patient had a right to equal optimal treatment during COVID-19 pandemic.

#### **As regard the relation between risk perception levels and personal characteristics of nurses:**

Regarding the relation between risk perception levels and personal characteristics of nurses regarding COVID-19 pandemic the present study showed that there was no statistically significant relation between risk perception levels and personal characteristics of nurses regarding covid 19. This is could be due to all nurses seek to protect themselves and their families from being infected by following all roles and policy of protection regardless their age, qualification and experience as well as adequate training and knowledge about COVID-19.

This was supported by the study of **Sperling** <sup>(12)</sup> who conducted a study in Turkey to minimize the risk ,and found that all nurses had a strong sense and knowledge about how to take measures to prevent Covid-19 disease.

#### **As regard The Correlation between ethical dilemmas and Risk Perception**

Regarding the correlation between ethical dilemmas and risk perception during the COVID-19 there was no statistically significant correlation between risk perception and nurses' attitude regarding various ethical dilemmas during the covid 19 pandemic.

This result goes in the same line with a study by **Sperling**<sup>(12)</sup> who conducted a study at Israel to examine how nurses respond to ethical dilemmas and tension during the COVID-19 outbreak, and found that there was no statistically

#### **Conclusion:**

In the light of the main study results; it can be concluded that the most of studied nursing had a positive attitude regarding various ethical dilemmas during the COVID-19 pandemic As well, the most of studied nursing had an excellent level of risk

perception Furthermore, there was no statistically significant relation between total levels of their attitude regarding various ethical dilemmas and risk perception levels

#### **Recommendations:**

- Support for staff is essential both throughout the pandemic and afterwards and it is important that preparation of individuals regarding building resilience is recognized.
- Psychological support and services for nurses and the wider healthcare team need to be available and quickly convened in the event of similar major incidents.
- Nurse managers need to take measures to reduce risk and work stress and increase motivation to increase the performance of nurses.

Table 1: Distribution of personal characteristics of the nurses (n= 225 )

Demographic characteristic	N.	%
<b>Age in year</b>		
• < 20	65	28.9%
• 20-<30	70	31.1%
• ≥30	90	40%
Mean ±SD	26.57±1.412	
<b>Gender</b>		
• Male	66	29.3%
• Female	159	<b>70.7%</b>
<b>Marital status</b>		
• Married	204	<b>90.7%</b>
• Single	18	8%
• Divorce	3	1.3%
<b>Educational qualification</b>		
• Bachelor of nursing degree	81	36%
• Master in nursin	8	3.6%
• Diploma of technical institute of nursing	36	16%
• Nursing diploma	100	<b>44.4%</b>
• Department of work	90	40%
• Inpatient unit	135	<b>60%</b>
• ICU		
<b>Years of experience</b>		
• less than 5	75	33.4%
• -5- 10	100	<b>44.4%</b>
• More than 10	50	22.2%



Table (2): Distribution of job characteristics of the nurses (n=225)

Job characteristic	N.	%
Previous training about how to deal with patient with COVID-19	125	55.6%
• Yes	100	44.4%
• No		
Treat a patient who was suspected to have COVID-19	200	88.9%
• Yes	25	11.1%
• No		
There is a clear guidelines for treating patient with COVID-19	225	100%
• Yes		
• No		
Willing to work during the pandemic	170	75.6%
• Yes	55	24.4%
• No		
Live with the family at the time of the outbreak	225	100%
• Yes		
• No		
Previously cared for a patient with a COVID-19 on a ventilator	60	26.7%
• Yes	165	73.3%
• No		
You are care with a patients have COVID-19	180	80%
• Yes	45	20%
• No		

**Table (3): Distribution of nurses' attitude regarding various ethical dilemmas during the COVID-19 pandemic (n=225).**

Various ethical dilemmas	Not true in most cases/Totally not true(3)		Have not decided (2)		True in most cases/Very true(1)	
	N.	%	N.	%	N.	%
In the time of shortage in nurses, a patient who is responsible for his/her medical condition eg. As a result of smoking or not taking protective measures should receive less priority for treatment in comparison to other patients.	225	100%	-	-	-	-
Every patient has a right to equal access to optimal treatment during COVID_19 pandemic regardless of his/her age and health background	-	-	-	-	225	100%
Old sick patients should be disconnected from ventilator to allow access to younger patients when there is shortage	225	100%	-	-	-	-
Old sick patients should not be connected from ventilator to allow access to younger patients when there is shortage	-	-	-	-	225	100%
Nurse have a right to refuse treat certain patients during the COVID-19 outbreak	200	88.9%	-	-	25	11.1%
Nurse fear of self-contamination and contaminating others(family or parents) "If he/she contract the virus	-	-	-	-	225	100%
Providing care without adequate material/monetary compensation or managerial support and appreciation: "As a new nurse who also suffers from asthma, I have to fight to survive and receive my rights, instead of benefiting from the system moving COVID-19 patients to appropriate wards	100	44.4%	-	-	125	55.6%
Providing optimal care in cases of uncertainty, lack of knowledge, denial, and shame: *I worry about not providing optimal care	95	42.2%	-	-	130	57.8%
*I'm afraid of making mistakes	45	20%	-	-	180	80%
*Hospitalized patients don't tell the truth about their condition	-	-	125	55.6%	100	44.4%
*Patients are not truthful about their exposure to people with COVID-19	25	11.1%	-	-	200	88.9%
Providing care in hard conditions: "Every time I put on my protective measures before entering	-	-	-	-	225	100%
The hospital expects us to separate between babies and their mothers if they are suspected as being positive for COVID-19. Most of us object doing this.	-	-	-	-	225	100%
Placing great emphasis on COVID-19 at the cost of other diseases/conditions:	25	11.1%	-	-	200	88.9%
*I'm afraid that other patients neglect themselves for fear of coming to the clinic/hospital	-	-	-	-	225	100%
* It is more difficult to provide telephone support to patients when the clinics are closed and empty	-	-	-	-	225	100%
*-Patients are desperate and frustrated.	55	24.4%	-	-	170	75.6

**Table (4): Levels of nurses' attitude regarding various ethical dilemmas during the COVID-19 pandemic (n=225)**

Levels of attitude		
	No	%
Positive	195	86.7%
Negative	30	13.3%

**Table (5): Risk Perception of nurses regarding COVID-19(n=225)**

Risk perception levels		
	No	%
Poor(score of 20-39)	5	2.2
Moderate(40-59)	20	8.9
Good(60-80)	30	13.3
Excellent(80-100)	170	75.6

**Table (6): Relation between total levels of attitude regarding various ethical dilemmas and personal characteristics of nurses during the COVID-19 pandemic (n=225).**

Personal characteristics	Levels of attitude				Total	χ <sup>2</sup>	p-value
	Positive		Negative				
	N	%	N	%			
<b>Age per year</b>							
< 20	55	84.6	10	15.4	65	2.9	0.20
20-<30	61	87.1	9	12.9	70		
≥30	78	86.7	12	13.3	90		
<b>Gender</b>							
Male	55	83.3	11	16.7	66	0.12	0.81
Female	140	88.1	19	11.9	159		
<b>Education level</b>							
• Bachelor of nursing degree	60	74.1	21	25.9	81	0.51	0.23
• Diploma of technical institute of nursing	20	55.6	16	44.4	36		
• Nursing diploma	80	80	20	20	100		
• Master in nursing	6	75	2	25	8		
<b>Marital status</b>							
Single	10	55.5	8	44.5	18		
Married	190	93.1	14	6.9	204	0.52	0.66
Divorced	3	100	-	-	3		
<b>Department</b>							
Inpatient unit	71	78.9	19	21.1	90	0.70	0.60
ICU	120	88.9	15	11.1	135		
<b>Years of experience</b>							
less than 5	61	81.3	14	18.7	75	0.59	0.62
5-10	75	75	25	25	100		
More than 10	40	80	10	20	50		

**Table (7): Relation between risk perception levels and personal characteristics of nurses during COVID-19 pandemic (n=225).**

Personal characteristics	Risk perception levels								Total	χ <sup>2</sup>	p-value
	Poor		Moderate		Good		Excellent				
	N.	%	N.	%	N.	%	N.	%			
<b>Age per year</b>											
< 20	6	9.2	4	6.2	15	23.1	40	61.5	65	2.8	0.24
20-<30	4	5.7		12.9		17.1	45	64.3			
≥30	5	5.5	9	11.1	12	22.2	55	61.1	70		
			10		20				90		
<b>Gender</b>											
Male	6	9.1	4	6.1	16	24.2	40	60.6	66	0.14	0.93
Female	8	5	12	7.5	19	11.9	120	75.5	159		
<b>Educational levels</b>											
Bachelor of nursing degree	5	6.2	6	7.4	10	12.3	60	74.1	81	0.62	0.43
Diploma of technical institute of nursing*	4	11.1	4	11.1	8	22.2	20	55.6	36		
Nursing diploma	4	4	5	5	9	9	82	82	100		
Master in nursing	0	0	0	0	2	25	6	75	8		
<b>Marital status</b>											
Married	14	6.9	20	9.8	10	4.9	160	78.4	204	0.54	0.76
Single	0	0	3	16.7	7	38.9	8	44.4	18		
Divorced	-	-	-	-	3	100	-	-	3		
<b>Years of experience</b>											
less than 5	5	6.7	10	13.3	20	26.7	40	53.3	75	0.63	0.73
5-10	-	-	5	5	30	30	60	60	100		
More than 10	6	12	4	8	10	20	30	60	50		
<b>Department</b>											
Inpatient unit	-		10	11.1	10	11.1	70	77.8	90	0.74	0.69
ICU	6	4.4	4	3	15	11.1	110	81.5	135		

**Table (8): Correlation between various ethical dilemmas and risk perception of COVID-19 (n=225)**

Variables	Nurses attitude regarding various ethical dilemmas during the COVID-19 pandemic	
	r	p-value
	Risk Perception of nurses regarding COVID-19.	2.43

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