



## COVID-19 Social Stigma and Nurses' Preparedness

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**Article History:** Received: 26.06.2023      Revised: 04.07.2023      Accepted: 22.07.2023

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### ABSTRACT

**Background:** The novel coronavirus 2019 or COVID-19 pandemic has brought about a global public health crisis, providing care was emotionally difficult for healthcare workers. Uncertainty, stigmatization, and potentially exposing their families to infection were prominent themes for health care workers during epidemic. **Aim of the study:** was to investigate relationship among COVID-19-social stigma and nurses' preparedness. **Research design** A descriptive correlational design was used to conduct this study. **Setting:** This study was conducted at Al-Ahrar Zagazig Teaching Hospital. **Subjects:** Simple random sample was selected from nurses (n= 230). **Tools of data collection:** COVID-19 Social stigma scale and Nurse's preparedness scale **Results:** Studied nurses had a high level of COVID-19 social stigma and Nurse's preparedness during COVID-19 outbreak. **Conclusion** there was statistically significant negative association between COVID-19 social stigma and Nurse's preparedness. **Recommendations:** Therefore, strategies and measures should be taken, to reduce COVID-19 social stigma such as : enforce positive public attitudes toward nurses; continuing education and training sessions; and support HCWS in healthcare facilities should provide with occupational safety standards, equipment, consumables, training and Personal protective equipment.

**Key words:** COVID-19, Social Stigma and nurses' preparedness.

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**DOI:** 10.53555/ecb/2023.12.1063

### Introduction

Coronavirus disease 2019 (COVID-19), caused by severe acute respiratory syndrome coronavirus (SARS-CoV-2), was declared as a pandemic by the World Health Organization (WHO) on 11 March 2020 due to its alarming level of spread and severity the emergence and spread of COVID-19 has caused confusion, anxiety and fear, and led to stigma on certain populations for being the reason for this outbreak (Yufika, 2021).

Nurses are very important frontline health care professionals as they spend more time

with patients than other professionals. This is even more so at this critical time of the COVID-19 pandemic. The nursing profession is facing great challenges in coping with the pandemic as they are more vulnerable to exposure and infection with the disease. Because COVID-19 is highly transmissible and deadly, it has impact on their cognitive, emotional, behavioral, physical dimensions and led to considerable Sustainability stigmatization (Taghaddom, 2020).

In our study has 3 dimensions (discrimination, acceptance, fear), in common discrimination can be defined as “any distinction, exclusion, restriction, or preference against health care workers (HCWs) also often occurs during outbreaks, due to their close contact with patients (Yufika, 2021).

Possession of a stigmatized identity would have a negative effect on self-esteem (negative acceptance) or stigmatized individuals can remain unaffected by the negative evaluations that others hold about them and self-efficacy might play a role in ameliorating the negative effects of acquiring a stigmatized label (positive acceptance). It would appear that a positive sense of self is linked to positive self-efficacy, however this takes time to develop and it is only through the repeated experience of perceived failure that robust precepts of self-efficacy are developed (Bruffell, 2017).

Fear of being stigmatized during an outbreak may cause people to deny clinical symptoms and not seek medical care. Furthermore, Stigma associated with a particular disease is very dangerous, in particular if it comes from HCWs, as it may lead to poor health care service provision (Yufika, 2021). Nurses' role during COVID-19 pandemic has expanded from caring for the sick to recover. So, nurses should be prepared to cope with this pandemic. Preparedness is known as a set of actions that are taken as precautionary measures in the face of potential disasters. Preparedness is an important quality in achieving goals and in avoiding and

mitigating negative outcomes (Chua et al., 2021).

Nurses Preparedness require adequate knowledge and skills to deliver a practical approach to responding to this outbreak and managing critical situations. Healthcare practitioners can reduce the transmission rate and the risk of COVID-19 in hospitals through proper hand washing, hand hygiene, and personal protective equipment (PPE). Having an adequate PPE supply is inevitable in combating this pandemic (Khan, 2020).

Thus, there is a need for adequate resources, knowledge, and training in mitigating hospital-acquired COVID-19. They require necessary training to equip them with specific skills for delivering quality care to COVID-19 patients. Therefore, adequate knowledge of COVID-19, effective response, and critical preparedness are essential for frontline nurses (Al Baalharith, 2021).

Since the earliest known the first case of COVID-19 identified in the Wuhan city of China in December 2019, the epidemic has rapidly spread throughout China in just several months, turning into a serious national public health crisis, and patients with the same symptoms have been gradually documented in other countries. There is total of 292,142 laboratory-confirmed cases and 12,784 deaths globally as of 22 March, of which 81,498 cases and 3,267 deaths are in China (Liu, 2020).

Although there are increase the number of infected nurses with corona viruses there is no study examine the relationship between COVID-19 social stigma, and nurses'

preparedness and there are some studies made to examine effect of COVID-19 Social Stigma on patient but no study examines its effect on nurse. Thus, the current study will be conducted to assess the effect COVID-19 Social Stigma on nurse and will develop of COVID-19 social stigma scale to measure this effect (Chua et al., 2021).

### Significance of the study:

More than three-quarters of Egyptian doctors consider that stigmatization of HCWs and harassment of families of patients with varying degrees of burnout and fatigue are related (Abd-elhafiz,2020) According to the latest actual count of the number of deaths due to the Corona virus from the nursing staff was reached more than 270 (Jesus,2021) Nurses are soldiers in COVID-19pandemic. Thus, if we need to control and prevent this epidemic, we have to fight against stigmatization toward nurses concurrently. COVID-19-related stigma and its relation among nurses have not been studied. There was no scale for assessing COVID-19 stigmatization for nurses that affect nurses. Up till now, numerous knowledge gaps found.

### The aim of the study was:

To investigate the relationship between COVID-19 social stigma and nurses' preparedness.

### Research questions:

- What is the level of COVID-19 social stigma among nurses?
- What are the levels of Nurses' preparedness during COVID-19pandemic?

- Is there a relationship between COVID-19 social stigma and nurses' preparedness?

### Subjects and Methods:

#### Research design:

A descriptive correlational design was used to conduct this study.

#### Study Subjects:

Simple random sample was selected from nurses (n= 230) out of 500 nurses, who agreed to participate in the study. Sample size was calculated according to following equation provided  $[n= N/ 1+ N (e)^2]$ .

#### Study Setting:

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

#### Tool for data collection:

Data were collected by using 2 tools, **Tool I:** COVID-19 social stigma scale was developed by the researcher and was based on the literature of review to assess COVID-19 social stigma level. It composed of two parts: **Part 1:** personal characteristics that were: age, sex, marital status, educational level, hospital and years of experience. **Part 2:** COVID-19 social stigma scale (29 items) It was developed by the researcher based on the literature of review (Amir, 2021; Elgohari et al., 2021; Ramaci et al., 2020; Atiya et al., 2021; Mostafa et al., 2021; Taylor et al., 2020; Serrano-Ripoll et al., 2020; Krisjane et al., 2020).

#### Scoring system:

Nurses' responses were measured on a two-point Likert scale ranging from 0=no and 1= yes. The scores of each dimension

were summed and the total divided by the total score of this dimension. The total scores for each dimension ranged from (0-29). These scores were multiplied by 100 to be converted into percent score. According to this categories levels of COVID-19 social stigma were estimated through:

- Low COVID-19 social stigma if the score less than 50%.
- Moderate COVID-19 social stigma if the score ranges from 50% to 75%.
- High COVID-19 social stigma if the score more than 75%. **(Bornmann, 2013)**

**Tool II:** Nurses' Preparedness scale. It was designed by researcher based on literature of review **(Crowley et al , 2021)**, **(Afulani et al 2021)**and **(Saadeh,2020)**, **(Liu,2020)**, **(Ivanov, 2020)** and **(Muhammad, 2018)** to measure Nurses' preparedness level related to COVID-19 pandemic. It consists of (63) items grouped under 6 dimensions namely: Nurses' knowledge and Nurses' communication, Nurses' Support and relations, Nurses' training, Management role and resources needs.

### **Scoring system:**

For closed ended questions: nurses' responses were measured on a two-point Likert scale ranging from No= 0 and Yes =1. For multi- choice questions: Nurses responses were measured on two points (Zero) if the answer is wrong and (1) if the answer is correct. The scores of each dimension were summed and the total divided by the total score of this dimension. The total scores for each dimension ranged from (0-78). These scores were multiplied

by 100 to be converted into percent score. According to these categories levels of Nurses' preparedness were estimated through:

- Low Nurses' preparedness if the score less than 50%.
- Moderate Nurses' preparedness if the score ranges from 50% to 75%.
- High Nurses' preparedness if the score more than 75%. **(Bornmann,2013)**

### **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 the tools for clarity, 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.

### **Field work:**

The preparatory phase was done by printing questionnaire forms more than the required sample size in order to maintain the complete sample size and also to compensate for the forms with missing data. Then the data collection phase of this study was executed from 7-10 nurses per day during the morning, afternoon and night shifts in three days per weeks. It was lasting two months from mid-August 2022 to mid-October 2022. Also, explaining orally the purpose of the study and ways to fill in the questionnaire sheets briefly to the nurses before the beginning of their answer. The filled forms were collected in time and revised to check their completeness to avoid any missing data.

**Pilot study:**

The pilot study was conducted to assess the tool's clarity and feasibility and to identify the obstacles of applicability, the pilot sample included 23 nurses (10% of the study sample) selected from the study setting. No modifications were. The pilot study also served in estimating the time needed for filling out the forms that took from 15-45 minutes for each tool questionnaire.

**Administrative and ethical considerations:**

An official letter obtained from the dean of faculty of nursing at Zagazig University to Chairman of board of directors at Zagazig University Hospitals to request permission and cooperation for conducting this study, then oral official permission from the nursing director of each hospital and from the head nurse of each unit after explaining the nature and the aim of the work.

**Ethical Considerations**

The study was approved by Research Ethics committee (REC) of the faculty of nursing, Zagazig University. The nurses were reassured that the information would be utilized anonymously and for research purposes only.

**Statistical Analysis:**

All data were collected, tabulated and statistically analyzed using the IBM SPSS (Statistical Package for the social sciences) statistics for windows, version 23.0 IBM Corp., Armonk, NY: USA Quantitative data were expressed as the Mean  $\pm$  SD & (range), and qualitative data were expressed as absolute frequencies (number) & relative

frequencies(percentage). T test was used to compare between two groups normally distributed variables. Pearson correlation coefficient was calculated to assess relationship between various study variables, (+) sign indicate direct correlation& (-) sign indicate inverse correlation, also values near to 1 indicate strong correlation & values near 0 indicate weak correlation.

All tests were two sided. P Value  $< 0.05$  was considered statistically significant, p and p-value  $\geq 0.05$  was considered statistically insignificant (NS).  $\beta$  (regression coefficients) & R square test for Multiple linear regression. Multiple linear regressions are used to describe data and to explain the relationship between one dependent continues variable and one or more continues independent variables

**Result**

**Table (1):** shows The personal characteristics of nurses It is clear from the table that that the majority of studied nurses were females and aged from 20<30 years (77.4% & 69.6%) respectively, with mean age (Mean $\pm$  SD 26.57+ 1.41). Slightly more than half of nurse were married and had bachelor's degree (53.5%& 54.8%) respectively. While (66%) of them had less than five years' experience.

**Table (2):** Illustrated Prevalence distribution of mean scores and levels of the studied nurses according to COVID-19 Social stigma dimensions It's clear from the table that slightly three quarters of studied nurses 76.5%& 69.5 &75% perceived that they had a high level of behavioral and beliefs discrimination, fear, and negative and



Positive Acceptance COVID-19 social stigma. While 11.3% & 7.8 % & 10% of them had low levels. generally, most of nurses 85.6 % had a high experience of COVID-19 social stigma.

**Table (3):** shows Prevalence distribution of mean scores and levels of the studied nurses according to Nurse's Preparedness dimensions during COVID-19 epidemic. It is clear from table that only (53.9 % & 51.3) of studied nurses reported that they had a high level of Nurses' Preparedness dimensions regarding support and Training during COVID-19 epidemic. While 26.1% & 26.1% had low Nurses' Preparedness regarding Communication and Resources dimension during COVID-19 epidemic. generally, more than threequarters of studied nurses (75 %) have adequate Nurses' Preparedness.

**Table (4):** Correlation matrix between COVID-19 Social stigma and Nurses' preparedness score during COVID-19 epidemic Show there was statistically significant negative association between COVID-19 social stigma and Nurses' preparedness

**Table (5):** Relation between social stigma and personal characters of studied nurses Shows that there was statistically significant relation between COVID-19 social stigma and personal characteristic of studied nurses regarding their gender and experience p value (0.02 & 0.035) respectively. This mean that females perceived COVID-19 social stigma more than males

**Table (6):** Relation between preparedness and personal characteristic of studied nurses Shows that there was statistically

significant relation between Nurses' preparedness and personal characteristic of studied nurses regarding their gender p value = 0.019. This mean that females perceived Nurses' preparedness more than males.

**Table (7):** Multiple linear regression model for predict COVID-19 social stigma among studied nurses It was noticed that, females and Nurses' Preparedness predict nurses high COVID-19 social stigma of COVID-19

### Discussion:

Regarding the distribution of personal characteristics of studied nurses. The present study showed that the majority of studied nurses were females and aged from 20-30 years. While slightly more than half of nurses were married, had bachelor's degrees, and had less than five years' experience. These results may be due to the female gender being higher than male due to the long history of the feminine nature of the nursing profession, and due to the majority of Egyptian nurses being graduates of secondary nursing schools.

A similar study finding was conducted in the Western Cape province of South Africa by *Crowley et al., (2021)* who study entitled "Primary care nurses' preparedness for COVID-19 in the Western Cape province, South Africa", and found that the majority of studied nurses were females and had bachelor's degree in nursing.

Also, on the same line a study conducted in Libya by *Elhadi et al., (2020)* who study entitled "Assessment of Healthcare Workers' Levels of Preparedness and Awareness regarding Covid-19 Infection in low-resource settings", and found that the

majority of studied nurses were females and married. However, in disagreement with these findings, a study was conducted at Hubei by *Zhou et al., (2022)*, and indicated that the majority of studied nurses were males.

Concerning the total levels of COVID-19 social stigma dimensions. slightly three quarters of studied nurses perceived that they had a high level of behavioral and beliefs discrimination, fear, and negative and positive acceptance dimensions of COVID-19 social stigma. This result may be due to some nurses stopping socialization with some people due to their restrictions as they deal with COVID-19 patients. Also, some people tend to ignore their good points and avoid new friendships because of dealing with COVID-19 patients.

This study finding was consistent with a study conducted in Egypt by *Elgohari et al., (2021)* who study entitled " COVID-19 Infection Stigma Scale: Psychometric Properties", and indicated that the highest mean score of COVID-19 social stigma was related to discrimination, fear and acceptance dimensions.

While this result was in disagreement with these findings, a study was conducted in Kampala by *Amir, (2021)* who study entitled " COVID-19 and its related stigma: A qualitative study among survivors in Kampala, Uganda", and revealed that the highest mean score of COVID-19 social stigma was regarding fear dimension.

As regards total level of COVID-19 social stigma as reported by studied nurses during COVID-19 epidemic. The results of

the current study showed that the majority of the studied nurses had a high level of COVID-19 social stigma. This may be due to nurses' belief that they are discriminated and feel uncomfortable by others when dealing with COVID patients and people make them feel worse about themselves and tell them that they are at fault when treating COVID patients. Also, lack of knowledge and fear of unknown led to high level of COVID-19 social stigma.

This result of the current study was in agreement with the study conducted in Indonesia by *Manik, Natalia & Theresia., (2021)* who study entitled " Social stigma towards nurses taking care of patients with COVID-19 in Indonesia: A mixed-methods study", and revealed that the majority of nurses had high level of social stigma. Nurses had restrictions placed on their freedoms, such as not being allowed to go out in public, being isolated from the community, and being separated from their families. While more than one-third of respondents stated that they would avoid nurses for fear of contracting COVID.

Also, another study was consistent with these findings, a study was conducted in Saudi Arabia by *Pasay-an et al., (2022)* who study entitled " A qualitative study on nurses' experiences with social stigma in the context of COVID-19", and revealed that nurses who cared for patients diagnosed with COVID-19 experienced high social stigma and they were labeled " COVID Nurses.

but this the result of the current study was inconsistent with these findings, a study was conducted in Indonesia by *Yufika et al., (2020)* who study entitled " Stigma

Associated with COVID-19 among Health Care Workers in Indonesia”, and revealed that more than half of HCWs didn't have social stigma in private hospitals than public hospitals.

In light of the total level of Nurses' preparedness during COVID-19 among studied nurses. The results of the current study showed that slightly more than three-quarters of studied nurses reported that there was adequate Nurses' preparedness during COVID-19. This may be due to adequate knowledge through TV and social media, comprehensive training and knowledge about standard perceiving, organization and supervision support as well as the presence of human and material resources which help in overcoming the epidemic of COVID-19 as an infectious disease

or due to the hospital has adequate resources to enable nurses to properly perform your duties and they often have to improvise and give out of their own pocket to fill in the lack of materials and resources at the hospital and Their fear defense them to know more information and implement all infection control instructions.

In the same line findings, the study conducted in the Western Cape province of South Africa by *Crowley et al., (2021)* who studied “the preparedness of Primary care (PC) nurses for COVID-19” and found that the majority of nurses reported that they prepared to provide care during COVID -19 epidemic. While this result was inconsistent with a study conducted in Ghana by *Wang et al., (2022)* who studied “Alleviating Emotional Exhaustion through Sports Involvement during the COVID-19

Pandemic: The Mediating Roles of Regulatory Emotional Self-Efficacy and Perceived Stress” and found that there was low perceived preparedness to respond to the COVID-19 pandemic among HCWs.

Concerning total levels of Nurses' preparedness dimensions. The result of the current study showed that more than half of studied nurses reported that they had a high level of support and training of Nurses' Preparedness during COVID-19 epidemic. This result may be due to knowledge, and experience of how to manage and deal with such crises, and beliefs can influence HCWs' perceptions and attitudes toward a particular disease in all healthcare settings do their best to manage such crises from required perceptual and all needed equipment and supplies to protect their nurses from low content and elevate fear from the deal with COVID-19 patient need to special consumable as (PEE).

This finding is in disagreement with a study conducted in Saudi by *Limbu et al., (2020)* who studied “Healthcare workers' knowledge, attitude and practices during the COVID-19 pandemic response in a tertiary care”, and found that most of health care workers had adequate level of preparedness regarding knowledge.

Also, this finding is in disagreement with a study conducted in Spain by *Blanco-Donoso et al., (2022)* who studied “Satisfied as professionals, but also exhausted and worried the role of job demands, resources and emotional experiences of Spanish nursing home workers during the COVID-19 pandemic” and found that most of studied



nurses had low level of support and training preparedness

Regarding correlation among COVID-19 social stigma and nurses' preparedness during COVID-19. The results of this study clear that, there was negative statistically significant association between the COVID-19 social stigma and nurses' preparedness. This may be due to Preparedness reduces fear and anxiety and increases nurses' ability to deal with pandemics. In the same line findings, the study conducted in India by **Ghosh (2020)** who study the pandemic of COVID-19 needs awareness and preparedness instead of stigma and panic and found that there was statistically negative association between social stigma and preparedness.

In light of the relation between the personal characteristics of studied nurses and COVID-19 social stigma. The present study showed that there was a statistically significant relation between the COVID-19 social stigma and the personal characteristics of studied nurses regarding their gender and experience. This may be due to the long history of the feminine nature of the nursing profession and females had a stigma more than males.

A similar finding was consistent with a study conducted in Dhaka by **Kibria et al., (2022)** who studied “Stigma and its associated factors among patients with COVID-19 in Dhaka City: evidence from a cross-sectional investigation”, and found there was a statistically significant relation between social stigma score and personal regarding their gender; females were at a

3.24 times higher risk of experiencing stigma than their male.

Also, this result was in agreement with a study conducted in Istanbul by **Fontesse et al., (2021)** who studied “Stigmatization and dehumanization perceptions towards psychiatric patients among nurses”, and found that there was a statistically significant relation between social stigma score and personal characteristic of studied nurses regarding their experience.

Concerning the relation between Nurses' preparedness and personal characteristics of studied nurses. The present study mentioned that there was a statistically significant relation between Nurses' preparedness and personal characteristics of studied nurses regarding their gender; females were better prepared than males. This may maybe due to females being more afraid than males so they try to increase their knowledge and training to protect themselves and their families.

A similar finding was consistent with a study conducted in Thailand by **Srichan et al., (2020)** who studied “Knowledge, attitudes and preparedness to respond to COVID-19 among the border population of northern Thailand in the early period of the pandemic” and found that there was a statistically significant relation between personal characteristics of studied nurses regarding sex and nurses' preparedness.

In the light of this study It was noticed that , females and nurses preparedness predict nurses high COVID-19 social stigma of COVID-19. This finding is in agreement with a study conducted in Indonesia by

**Iryanidar (2023)** who study Factors contributing to HCWS' stigma in caring for COVID-19 patients and found that there are 3 main factors that can contribute to stigma for HCW during pandemic time, the first personal factors {Demographic characteristics (age & gender), preparedness (knowledge and skills, working experience,)}

### **Recommendation:**

Based on the findings of this study, the following recommendations can be included:

**The nurse manager and authorities should apply strategies to keep nurses away of stigma**

- Provide continuing education, training sessions and support to enforce positive public attitudes toward nurses.
- Set COVID-19 stigma-reduction strategies build on knowledge-shaping and attitude-changing strategies,
- Provide treatment and intervention for stigmatized conditions within general health care settings
- Provide encouragement/counseling for those on COVID-19 frontlines to reduce discrimination
- Implemented An information-based approach, including the involvement of popular opinion leaders, to reduce COVID-19 social stigma against health workers
- Involve persons affected by COVID-19 is a key factor for successful anti-stigma interventions; particularly using voices, stories, recovery and hope narratives and images of local people.

- understood Context-specific stigma through scoping information from local organizations, community leaders, clinicians, news messages, public health websites and social media posts.
- Partnering with leaders are essential to build trust and reduce fear draw on interpersonal connections to promote reassurance, add legitimacy to general public health efforts, and disseminate information to those who might mistrust official communication channels

### **The staff nurses should:**

- Learn how to prioritize work, work proactively, and how to make a difference at work for problem recognition
- Develop their capabilities and follow standard precautions.
- Develop them professionally to protect themselves from being contaminated during dealing with COVID- 19 patients .
- Use new technologies, media, information and communication technologies and methods in nursing to overcome pandemic of COVID- 19.
- Learn new strategies at work place to cope with COVID - 19 pandemic
- Attend workshops and training programs related to COVID-19 to elevate their levels knowledge.
- Improve their skills in problem recognition, idea generation, idea promotion, application and innovative output.
- Foster culture of knowledge sharing, communication and relations through social media groups as what's app, mails,

Instagram...etc to minimize transmission of disease.

### Further researches

- Future research should continue to assess the nature of stigma in relation to COVID-19, and the implementation and impact of the recommended stigma-reduction strategies, including, for example, qualitative operational research in humanitarian settings, the scalability

and sustainability of anti-stigma interventions, and the cost-effectiveness of such interventions.

- Future longitudinal, experimental and multi-site studies to conduct more research on stigma, and Nurses' preparedness in nursing.
- The effect of training program about COVID- 19 on staff nurses' knowledge, skills and attitude.

## Part I

### Part 1: Personal characteristics of studied nurses

**Table I:** Frequency and percentage distribution of the studied nurses according to their Personal Characteristics (n=230).

Variables	NO	%
<b>Gender</b>		
<b>Females</b>	<b>178</b>	<b>77.4 %</b>
<b>Males</b>	<b>52</b>	<b>22.6 %</b>
<b>Age per years</b>		
<b>20 &lt;30 years</b>	<b>160</b>	<b>69.6 %</b>
<b>30 &lt;40 years</b>	<b>70</b>	<b>30.4%</b>
<b>Mean± SD</b>		
<b>26.57± 1.41</b>		
<b>Social status</b>		
<b>Single</b>	<b>99</b>	<b>43.0%</b>
<b>Married</b>	<b>123</b>	<b>53.5%</b>
<b>Divorced</b>	<b>5</b>	<b>2.2%</b>
<b>Widow</b>	<b>3</b>	<b>1.3%</b>
<b>Education</b>		
<b>nursing diploma</b>	<b>28</b>	<b>12.2%</b>
<b>Technical institute</b>	<b>76</b>	<b>33.0%</b>
<b>Bachelors</b>	<b>126</b>	<b>54.8%</b>
<b>Experience</b>		
<b>&lt;5 years</b>	<b>152</b>	<b>66.0%</b>
<b>5-10 years</b>	<b>36</b>	<b>15.7%</b>
<b>&gt;10 years</b>	<b>42</b>	<b>18.3%</b>

**S.D:** standard division

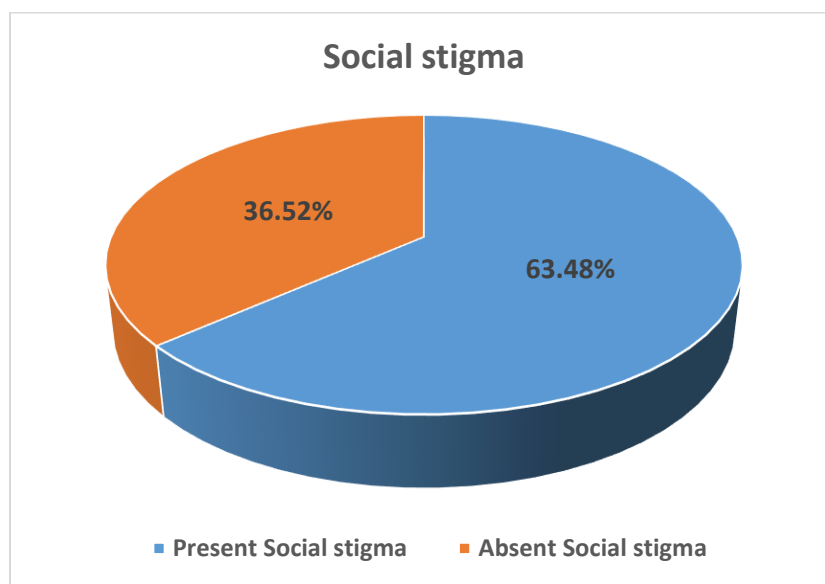


**Part 2**

**Table (2):** Prevalence distribution of mean scores and levels of the studied nurses according to COVID-19 Social stigma dimensions (n=230).

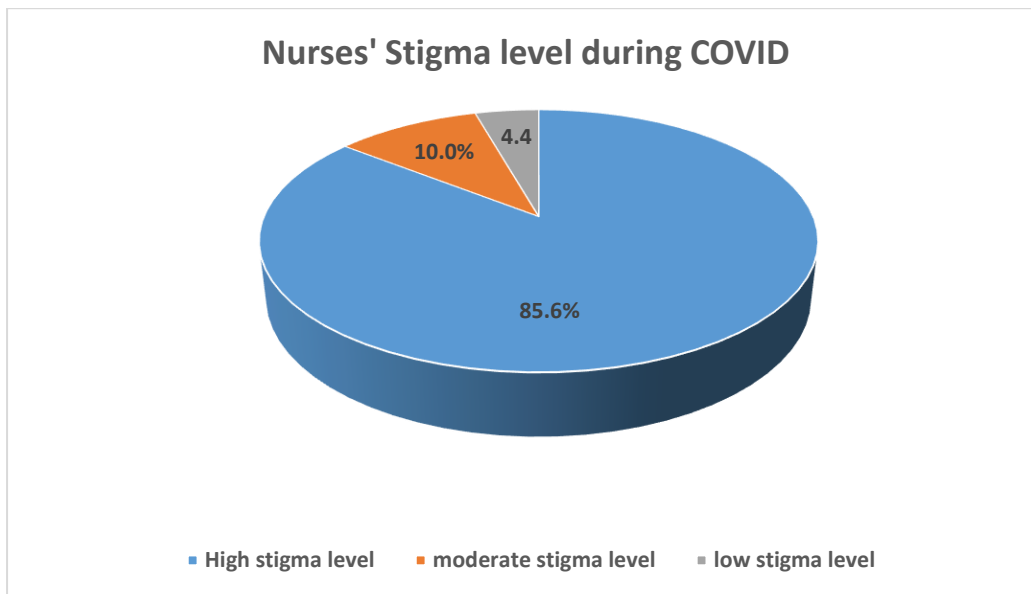
Dimensions	Mean± SD Median (range)	high		moderate		Low	
		NO	%	NO	%	NO	%
<b>A- Discrimination score (11)*</b>	<b>7.77±2.01</b> 8(1-11)	176	<b>76.5</b>	28	12.2	26	<b>11.3</b>
<b>I.Behavior score (5)</b>	3.78±1.26 4(1-5)	158	68.7	26	11.3	46	20.0
<b>II.Beliefs score (6)</b>	3.99±1.344 (1-6)	90	39.1	95	41.3	45	19.6
<b>B-Fear score (6)</b>	3.85±1.49 4(1-6)	160	<b>69.5</b>	52	22.7	18	<b>7.8</b>
<b>C-Acceptance score(12)</b>	<b>6.85 ± 2.09</b> 7 (2-10)	173	<b>75</b>	36	115	21	<b>10</b>
<b>I. Negative Acceptance score (7)</b>	4.86±1.89 5 (1-7)	110	47.8	52	222.6	68	29.6
<b>II. Positive Acceptance score (5)</b>	1.99±0.9 2 (1-4)	50	21.7	62	227.0	118	51.3
<b>Total mean scores of COVID-19 social stigma</b>	18.48±4.41 19 (3-25)	197	<b>85.6</b>	23	10	10	4.4

**Figure1: Prevalence of COVID-19 social stigma during COVID-19 epidemic as perceived by studied nurses. (n=230)**





**Figure 2:** Total levels of COVID-19 social stigma during COVID-19 epidemic as reported by studied nurses (n= 230).



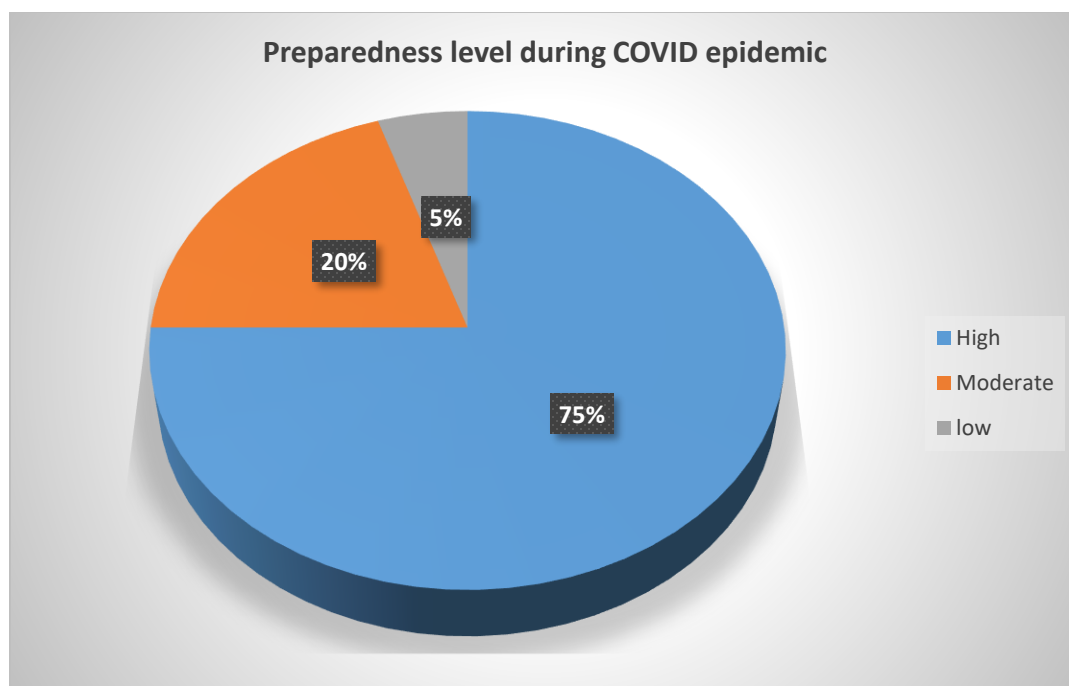
**Part 3**

**Nurse’s Preparedness during COVID-19 epidemic.**

**Table (3):** Prevalence distribution of mean scores and levels of the studied nurses according to Nurse’s Preparedness dimensions during COVID-19 epidemic (n=230).

Dimensions	Mean± SD	High		Moderate		Low	
		NO	%	NO	%	NO	%
A-Knowledge score (16)	12.01±1.89 12(7-16)	107	<b>46.5</b>	70	30.4	53	23.1
B-Communication score(10)	7.02±0.98 7(5-10)	66	28.7	104	45.2	60	26.1
C-Support score (6)	4.86±0.94 5(3-6)	124	<b>53.9</b>	76	33.1	30	13.0
D-Training score (6)	5.04±0.89 5(3-6)	118	51.3	62	27.0	50	21.7
E-Management role score(10)	7.97±1.25 8(4-10)	100	43.5	82	35.6	48	<b>20.9</b>
F-Resources score (8)	5.77±1.29 6(2-8)	66	28.7	104	45.2	60	26.1
<b>Total Nurses' Preparedness scores during COVID-19 epidemic (56)*</b>	<b>35.89±3.5</b> <b>36(28-46)</b>	<b>173</b>	<b>75</b>	<b>46</b>	<b>20</b>	<b>11</b>	<b>5</b>

**Figure 3:** Total levels of studied nurses regarding their preparedness during COVID-19 epidemic (n=230).



**Table (4) :** Correlation matrix between COVID-19 Social stigma and Nurses' preparedness score during COVID-19 epidemic(n=230).

Variables	Nurses' Preparedness score		COVID-19 Social stigma score	
	R	p	r	p
COVID-19 Social stigma score	0.227**	0.001		
Nurses' Preparedness score			-0.227**	0.001

(r): Pearson Correlation coefficient **p>0.05:** no significant , **\* p<0.05:** significant

**Table (5):** Relation between COVID-19 social stigma and personal characters of studied nurses (n=230).

Variables		COVID-19 Social Stigma	t/f	p
		Mean± SD		
Age	20<30 years	18.53±3.74	0.243	0.808
	30<40 years	18.37±5.67		
Gender	Males	17.23±3.88	<b>2.34</b>	<b>0.02*</b>
	females	18.84±4.49		
Social status	Single	18.35±3.845	0.548	0.626
	married	18.46±4.87		
	divorced	21±4		
	Widow	19±1.73		
Education	Nursing diploma	18.64±4.48	0.95	0.39
	Technical institute	19±3.43		
	Bachelors	18.13±4.89		
Experience	<5 years	18.53±4.21	<b>3.398</b>	<b>0.035*</b>
	5-10 years	17±5.13		
	>10 years	19.57±4.197		

**Table (6):** Relation between Nurses' preparedness and personal characteristic of studied nurses (n=230) :

Variables		Preparedness for COVID-19 epidemic	F	P
		Mean± SD		
Age	20<30 years	35.8±3.39	0.544	0.587
	30<40 years	36.09±3.78		
Gender	Females	58.65±7.17	<b>2.37</b>	<b>0.019*</b>
	Males	34.88±3.12		
Social status	Single	35.85±3.47	0.767	0.514
	Married	35.96±3.56		
	Divorced	36.6±3.36		
	Widow	33±1.73		
Education	Nursing Diploma	35.71±4.799	0.039	0.96
	Technical Institute	35.92±2.997		
	Bachelors	35.91±3.48		
Experience	<5 years	35.75±3.36	2.064	0.129
	5-10 years	36.94±3.37		
	>10 years	35.48±3.995		

t: student' t test, f: anova test p>0.05: no significant, \* p<0.05: significant

**Table (7): Multiple linear regression model for predict COVID-19 Social stigma among studied nurses (n.230):**

Predictors	Unstandardized Coefficients		T	Sig.	Model
	B	SE			
(Constant)	43.3				<b>r= 0.55</b> <b>R<sup>2</sup>=0.301</b> <b>F =32.5</b> <b>P=0.0001*</b>
Female	-1.779	0.592	3.0	0.003	
Nurses' Preparedness	-0.192	0.072	2.649	0.009	

**Reference**

**Abdelhafiz, A., Alorabi, M (2020).** Social Stigma: The Hidden Threat of COVID-19. *Frontiers in Public Health*. Volume 8 | Article 429 available . doi: [10.3389/fpubh.2020.00429](https://doi.org/10.3389/fpubh.2020.00429) date :5-6-2022 at 4 am.

**Afulani PA, Gyamerah AO, Nutor JJ, Laar A, Aborigo RA, Malechi H, et al (2021).** Inadequate preparedness for response to COVID-19 is associated with stress and burnout among healthcare workers in Ghana. *PLoS ONE* 16(4): e0250294.

**Al Baalharith, I, M., & Pappiya, E, M. (2021).** Nurses' preparedness and response to COVID-19. *International Journal of Africa Nursing Sciences*, 14(March), 100302. Available at <https://doi.org/10.1016/j.ijans.2021.100302> date:5-10-2021 at 1 am.

**Amir, K. (2021).** COVID-19 and Its Related Stigma: A Qualitative Study Among Survivors in kampala, Uganda Stigma and Health advance online publication .

**Atiya, M. A. G., Sliman, W. M. M., & ...** COVID-19 Stigma and Nurses' Professional Quality of Life, Self-esteem and Performance. *American Journal ...*,(2021). 9(6), 206–215. Available at <https://doi.org/10.12691/ajnr-9-6-4> date:5-1-2022 at 3 pm

**Blanco-Donoso, L. M., Moreno-Jiménez, J., Gallego-Alberto, L., Amutio, A., Moreno-Jiménez, B., & Garrosa, E. (2022).** Satisfied as professionals, but also exhausted and worried!!: The role of job demands, resources and emotional experiences of Spanish nursing home workers during the COVID-19 pandemic. *Health and Social Care in the Community*, 30(1), e148–e160. Available at <https://doi.org/10.1111/hsc.13422>

**Bornmann L, Leydesdorff L, Mutz R.** The use of percentiles and percentile rank classes in the analysis of bibliometric data: Opportunities and limits. *Journal of Informetrics*. 2013;7(1):158–65. Available at <https://doi.org/10.1016/j.joi.2012.10.001>

- Bruffell, H.** (2017). Pride and Prejudice: The role of self-efficacy in stigma  
Copyright © Vol 9 (2): 23 – 40 y  
available: [h.k.bruffell@open.ac.uk](mailto:h.k.bruffell@open.ac.uk)  
Date:12-12-2021 at 12 am
- Chua, B. S., Cosmas, G., & Arsat, N.** (2021). Nurses' Preparedness, Readiness, and Anxiety in Managing COVID-19 Pandemic. *Asia-Pacific Journal of Public Health*, 33(5), 564–570. Available at <https://doi.org/10.1177/10105395211012170> date 1-1-2022 at 1 am
- Crowley T, Kitshoff D, De Lange-Cloete F, et al**(2021). Primary care nurses' preparedness for COVID-19 in the Western Cape province, South Africa. *Afr J Prim Health Care Fam Med*. 13(1), a2879. Available at <https://doi.org/10.4102/phcfm.v13i1.287>
- Elgohari, H. M., Bassiony, M. M., Sehlo, M. G., Youssef, U. M., Ali, H. M., Shahin, I., Elrafey, D. S., & Mahdy, R. S.** (2021). COVID-19 Infection Stigma Scale: psychometric properties. *Egyptian Journal of Neurology, Psychiatry and Neurosurgery*, 57(1). Available at <https://doi.org/10.1186/s41983-021-00317-0>
- Elhadi ,M, Msherghi,A, Alkeelani,M, and etal** (2020). Assessment of Healthcare Workers' Levels of Preparedness and Awareness Regarding COVID-19 Infection in Low-Resource Setting, *Am. J. Trop. Med. Hyg.*, 103(2), pp. 828–833
- Fontesse, S., Rimez, X., & Maurage, P.** (2021). Stigmatization and dehumanization perceptions towards psychiatric patients among nurses: A path-analysis approach. *Archives of Psychiatric Nursing*, 35(2), 153–161. Available at <https://doi.org/10.1016/j.apnu.2020.12.005>
- Ghosh,S.**(2020)who study The pandemic of COVID-19 needs awareness and preparedness instead of stigma and panic Available at DOI:[10.35543/osf.io/gy2t7](https://doi.org/10.35543/osf.io/gy2t7)
- Iryanidar I, Kadar KS, Irwan AM.** Factors contributing to nurses' resilience in caring for COVID-19 patients: an integrative review. *Front Nurs*. 2023;3:289–300 Received: 14 July 2022; Accepted: 15 December 2022; Published: 20 September 2023. *Frontiers of Nursing* • 10(3) • 2023 DOI: 10.2478/FON-2023-0032 [file:///C:/Users/DELL/Downloads/10.2478\\_fon-2023-0032.pdf](file:///C:/Users/DELL/Downloads/10.2478_fon-2023-0032.pdf)
- Ivanov, D. Das,A.**(2020). Coronavirus (COVID-19/SARS-CoV-2) and supply chain resilience: a research note. 13(1):90
- Jesus, M** (2021) Today. the case to consider the deceased doctors and nursing specialists in Corona as martyrs. *El wattan journal*. Available at <https://www.elwatannews.com/news/details/5411615?t=push> date 10-10-2021 at 1 am
- Khan, M. A. S Akiful Haque, M. M., Rahman, M. L., Hossian, M.,**



- (2021). Acceptance of COVID-19 vaccine and its determinants: evidence from a large sample study in Bangladesh. *Heliyon*, 7(6). Available at <https://doi.org/10.1016/j.heliyon.2021.e07376> date 3-3-2-22 at 12 am
- Kibria, M. G., Islam, T., Islam, M. T., Kabir, R., Ahmed, S., & Sultana, P. (2022).** Stigma and its associated factors among patients with COVID-19 in Dhaka City: evidence from a cross-sectional investigation. *PeerJ*, 10, 1–17. Available at <https://doi.org/10.7717/peerj.14092>
- Krisjane E. Apsite-Berina M. Berzins T. Skadins G. Burgmanis** The work-life balance during the covid-19 outbreak <https://www.researchgate.net/publication/348396094>
- Limbu, D. K., Piryani, R. M., & Sunny, A. K. (2020).** Healthcare workers' knowledge, attitude and practices during the COVID-19 pandemic response in a tertiary care hospital of Nepal. *PLoS ONE*, 15(11 November), 7–13. Available at <https://doi.org/10.1371/journal.pone.0242126>
- Liu,W. Yue,X. Tchounwou,P.( 2020).** Response to the COVID-19 Epidemic: The Chinese Experience and Implications for Other Countries17(7): 2304. doi: 10.3390/ijerph17072304 date :12-12-2021at 11 am
- Mostafa, A.** COVID-19-related stigmatization among a sample of Egyptian healthcare workers. (2020); 15(12) doi: 10.1371/journal.pone.0244172. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC77482739->
- Muhammad, H.M.(2018).** Impact of Human Resources Strategies on job performance Available at [https://www.sanadkk.com/files/arts/files/02 Impact of Human Resources Strategies on job performance.pdf](https://www.sanadkk.com/files/arts/files/02%20Impact%20of%20Human%20Resources%20Strategies%20on%20job%20performance.pdf)
- Pasay-An ,E. Alshammari,F. Mostoles ,R. (2022)** A qualitative study on nurses' experiences with social stigma in the context of COVID-19 <https://doi.org/10.1016/j.cobeha.2021.03.014>
- Ramaci,T, Barattucci,M, Ledda,C and Rapisarda,V..** Social Stigma during COVID-19and its Impact on HCWs Outcomes (2020)*journal sustainability*(2020) 12 (9) date:6-9-2021 at 1 am
- Saadeh, D., Sacre, H., Hallit, S., Farah, R., & Salameh, P. (2021).** Knowledge, attitudes, and practices toward the coronavirus disease 2019 (COVID-19) among nurses in Lebanon. *Perspectives in Psychiatric Care*, 57(3), 1212–1221. Available <https://doi.org/10.1111/ppc.12676> date: 5-2-2022 at 2 am.
- Serrano-Ripolla,b,c Jose F. Meneses-Echavezd,e , Ignacio Ricci-Cabelloa,b,f,\* , David Fraile-Navarrog ,.** Impact of viral epidemic outbreaks on mental health of healthcare workers . (2020)Volume 277

<https://www.sciencedirect.com/science/article/pii/S0165032720326392>

**Srichan, P., Apidechkul, T., Tamornpark, R., Yeemard, F., Khunthason, S., Kitchanapaiboon, S., Wongnuch, P., Wongphaet, A., & Upala, P. (2020).** Knowledge, attitudes and preparedness to respond to COVID-19 among the border population of northern Thailand in the early period of the pandemic: a cross-sectional study. *WHO South-East Asia Journal of Public Health*, 9(2), 118–125. [Available at https://doi.org/10.4103/2224-3151.294305](https://doi.org/10.4103/2224-3151.294305)

**Taghaddom, S., Alrashidi, H., Diab, H. (2020).** The Impact of Coronavirus on Staff Nurses' Feeling While Giving Direct Care to COVID-19 Patients in Various COVID Facilities. Vol.10 No.9, DOI: [10.4236/ojn.2020.109060](https://doi.org/10.4236/ojn.2020.109060) Available at <https://www.scirp.org/journal/paperinformation?paperid=103003> Date: 10-2021 at 3 am

**Taylor, S., Landry, C. A., Rachor, G. S., Paluszek, M. M., & Asmundson, G. J. G. (2020).** Fear and avoidance of healthcare workers: An important, under-recognized form of stigmatization during the COVID-19 pandemic. *Journal of Anxiety Disorders*, (2020) 75(August), 102289. Available at <https://doi.org/10.1016/j.janxdis.2020>

**Wang, H., Zheng, X., Liu, Y., Xu, Z., & Yang, J. (2022).** Alleviating Emotional Exhaustion through Sports Involvement during the COVID-19 Pandemic: The Mediating Roles of Regulatory Emotional Self-Efficacy and Perceived Stress. *International Journal of Environmental Research and Public Health*, 19(18). Available at <https://doi.org/10.3390/ijerph191811776>

**World Health Organization (WHO).** WHO Coronavirus Disease (COVID-19) dashboard [Internet]. 2020[cited 2020 Aug 20]. Available from: [https://covid19.who.int/?gclid=EAIaIQobChMItL387bTl6gIVvCB7Ch3asQ0PEAAYASAAEgL6DvD\\_BwE](https://covid19.who.int/?gclid=EAIaIQobChMItL387bTl6gIVvCB7Ch3asQ0PEAAYASAAEgL6DvD_BwE)

**Yufika, A., Pratama, R., Anwar, S., Winardi, W., Librianty, N., Ananda, N., & Prashanti, P. (2020).** Stigma Associated with COVID-19 Among Health Care Workers in Indonesia. *Disaster Medicine and Public Health Preparedness*, 1–5 available at <https://pubmed.ncbi.nlm.nih.gov/33762053/> date: 2-3-2022 at 12 am

**Zhou, X., Chen, C., Yao, Y., Xia, J., Cao, L., & Qin, X. (2022).** A systematic review of COVID-19-related stigma targets, antecedents, and outcomes. *Frontiers in Psychology*, 13. Available at <https://doi.org/10.3389/fpsyg.2022.1026712>