

COVID-19 Social Stigma and Nurse's role efficacy

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Abstract

Background: 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. **Aim of the study** was to investigate relationship among COVID-19-social stigma and nurse's role efficacy. **Subject and method: Research design:** A descriptive correlational study design was used to conduct this study. **Setting:** This study was conducted at Al-Ahrar Zagazig Teaching Hospital in Zagazig, Al-sharqia, Egypt. **Subjects** Simple random sample was selected from nurses (n= 230). **Tool of data collection:** Two tools were used for collecting data: COVID-19 social stigma scale and Nurse's role efficacy Scale (RES). **Results:** Studied nurses had a high level of COVID-19 social stigma and had a moderate level of nurse's role efficacy. **Conclusion:** There was statistically significant negative association between COVID-19 social stigma and nurse's role efficacy. **Recommendations:** Strategies and measures should be taken, to reduce COVID-19social stigma , promote nurses' role efficacy by; enforcing positive public attitudes toward nurses; continuing education and training sessions; and support Health care workers in healthcare facilities should provide with occupational safety standards, equipment, consumables, training .

Key words: COVID-19, Social Stigma and nurse's role efficacy

Introduction

Coronavirus disease 2019 (COVID-19) is a respiratory infection that is recognized as a serious global public health threat Epidemics provoke social stigma especially when surrounded with several uncertainties, as in the case of the COVID-19 pandemic. Imposing unfamiliar measures to protect public health, improper understanding of modes of transmission, health resource shortages, and conflicting messages from authorities are amongst the many factors that led to public fear and anxiety during the COVID-19 pandemic. Therefore, it is important to determine the COVID-19 workplace-based preparedness as well as psychological preparedness for Health care workers (HCWS) ⁽¹⁾

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 ⁽²⁾.

In our study has three 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 ⁽³⁾

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 ⁽⁴⁾

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 ⁽³⁾

Stigma experiences can also lead to internalized stigma, the cognitive and emotional internalization of negative stereotypes and application of those stereotypes to one's self. Internalized stigma may lead to additional harms, including decrements in self-esteem, self-efficacy and role-efficacy ⁽⁵⁾.

Nurse's role efficacy would mean potential effectiveness of an individual occupying a particular role in an organization. The performance of a person working in an organization depends on his own potential effectiveness, technical competence, managerial experience as well as the design of the role that he performs in the organization ⁽⁶⁾

Nurse's role efficacy consists of five dimensions are centrality, proactivity, creativity, inter-role linkage, helping relationship, Centrality defined as an individual's belief of the degree of importance of his work in life, proactivity: The tendency to confront problems and find relevant solutions contributes to efficacy, Inter-role Linkage- Linkages of one's role with other roles in the organization increases efficacy, Creativity: An opportunity to try new and unconventional ways of solving problems or an opportunity to be creative is equally important ,Helping Relationship- feeling of person that they can get help from some source in the organization whenever the need arises, when they performing a particular role ⁽⁷⁾.

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 (8) 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 (9) 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. Up till now, numerous knowledge gaps found.

Aim of the study:

The aim of the study was: to investigate the relationship between COVID-19 social stigma and nurse's role efficacy at Al-aharar teaching hospital in Zagazig, Al-sharqia, Egypt.

Research Questions:

- 1- What is the level of COVID-19 social stigma in nurses?
- 2- What are the levels of nurse's role efficacy during COVID-19pandemic?
- 3- Is there a relation between COVID-19 social stigma and nurse's role efficacy?

Subjects and methods:

Research design:

A descriptive correlational design was used to conduct this study.

Study setting:

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

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 [$n = \frac{N}{1 + \frac{N}{e^2}}$].

Tools of data collection:

Data were collected by using 2 tools;

Tool I: COVID-19social stigma scale was developed by the researcher and was based on the literature of review to assess COVID-19social 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 ^{(10) (11) (12) (13) (14) (15) (16)}

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%. ⁽¹⁷⁾

Tool II: Nurse's role efficacy Scale (RES):

It was developed by Pareek (18) to measure nurse's role efficacy level among nurses. It consists of 20 items grouped under 5 dimensions namely: Centrality, Creativity, Inter-role linkage, Helping Relationship and confrontation.

Scoring system: Nurses' responses were measured on a three-point Likert scale ranging from (1) disagree, (2) Neutral, (3) agree. 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 (20-60). These scores were multiplied by 100 to be converted into percent score.

According to this categories levels of nurse's role efficacy were estimated through:

- **Low nurse's role efficacy** if the score less than 50%.
- **Moderate nurse's role efficacy** if the score ranges from 50% to 75%.
- **High nurse's role efficacy** if the score more than 75%. ⁽¹⁷⁾

Content validity and reliability:

Content validity was used to assess the items that were relevant and representative of the construct of interest. Face validity

evaluation allowed evaluation of item clarity and comprehension. **First tool** (COVID-19 Social Stigma Scale) was developed by the researcher based on literature review. **Second tool** (Role Efficacy Scale) was developed by Pareek, (1987). Then the study tools were translated into Arabic language. Face and content validity were conducted by five experts from faculty of nursing at Zagazig University and four nurses from the setting of study

Content and face validity sheet involved two parts: the first part included the opinions of the experts for each item that were recorded on a two-point scale: relevant, and not relevant; the second part covered general or overall opinion about the form which express their opinions and comments on the tools for clarity, applicability, comprehensiveness, understanding, any suggestions for any additional or omissions of items and ease for implementation. According to their opinions, all recommended modifications were performed by the researcher. Reliability statistics of the study, Kuder –Richardson (KR20) was (0.90) for COVID-19 Social Stigma and Cronbach's Alpha was (0.72) for Nurse's role efficacy.

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 and checklist.

Fieldwork:

The collection phase lasted for two months from mid-August 2022 to mid-October 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 COVID-19 Social Stigma and nurse's role efficacy questionnaire and was instructed during the filling. The data were collected in the morning shift, afternoon shifts and night shift, the time used for fulfillment the questionnaire ranged between 15- 45 minutes for each nurse according to nurse's physical and mental readiness.

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 Al-Aharar Teaching Hospital 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.

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): Shows that the majority of studied nurses were females and aged from 20<30 years (77.4% & 69.6%) respectively, with mean age (Mean± 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): Illustrates total of 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 discrimination, fear and Acceptance COVID-19 social stigma. Generally, most of nurses 85.6 % had a high experience of COVID-19 social stigma.

Table (3): Illustrates total of studied nurses according to their perception of nurse's role efficacy dimensions. It's clear from the table that slightly more than half (61.75%&59.1) of studied nurses perceived that they had high level of Centrality and Creativity as dimensions of their nurse's role efficacy. While only 16.5% & 13 % of them perceived that they had a low level of helping and confrontation as dimensions of their nurse's role efficacy.

Table 4: Shows that there is statistically significant negative association between COVID-19 social stigma and nurse's role efficacy ($r=-0.509$, $p=0.0001$).

Table 5: 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, the more experienced nurses Perceived COVID-19 social stigma more than the less experienced of nurses.

Table (6): Reveals that there was statistically significant relation between nurse's role efficacy and personal characteristic of studied nurses regarding their age and experience p value (0.017&0.022) respectively. This indicate that nurses who their ages 30>40 had more nurse's role efficacy than who their ages 20<30 and the more experienced nurses had nurse's role efficacy more than the less experienced of nurses.

Table (7): Shows that being females and Nurse's role efficacy were negative predictors of COVID-19 social stigma.

Table (8): Shows that nurses experienced COVID-19 social stigma predict low nurses' role efficacy.

Discussion:

Regarding the distribution of personal data 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.** ⁽¹⁹⁾ 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.** ⁽²⁰⁾ whose 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.** ⁽²¹⁾ and indicated that the majority of studied nurses were males.

Concerning the total mean of COVID-19 social stigma, slightly three quarters of studied nurses perceived that they had a high level of behavioral and beliefs discrimination, 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.** ⁽¹¹⁾ 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 and acceptance dimensions. Also, another study was inconsistent with these findings, a study was conducted in Kampala by **Amir** ⁽¹⁰⁾ who study entitled "COVID-19 and its related stigma: A qualitative study among survivors in Kampala, Uganda", and revealed that the highest mean 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 and Theresia** ⁽²²⁾ 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 COVID-19 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.** ⁽²³⁾ 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 stigma and they were labeled "COVID Nurses

Concerning As regards the total level of nurse's role efficacy during the COVID epidemic among studied nurses. The

present study findings showed that slightly more than half studied nurses had a moderate level of nurse's role efficacy. This may be due to a lack of definitive evidence supporting with knowledge and skills that are required to ensure that nurses perform competently during COVID-19 epidemic. The competency may also be different depending on the setting and services provided which affects nurse's role efficacy during the pandemic.

A similar finding was consistent with a study conducted in India by **Dumblekar and Dhar** ⁽²⁴⁾ who conducted a study to generate and understand the factors of nurse's role efficacy and found more than half of the studied nurses had a moderate level of nurse's role efficacy. However, in disagreement with these findings, a study was conducted in Jordan by **Abu Sharour et al.** ⁽²⁵⁾ who conducted a study to evaluate nurses' role-efficacy, confidence, and nurse-patient interaction while caring for patients with COVID-19 and found participants had a high level of role-efficacy, self-confidence and interaction.

Concerning the total mean of nurse's role efficacy. The present study revealed that slightly more than half of studied nurses perceived that they had high level of centrality and creativity as dimensions of their nurse's role efficacy. This result may be due to most nurses reporting that they think that their role is very important in the hospital, they feel quite central in the hospital related to decision-making and work in close collaboration with other colleagues.

A similar finding was consistent with a study conducted in Australia by **Lee** ⁽²⁶⁾ which studied Changes in workplace practices during the COVID-19 pandemic: the roles of emotion, psychological safety, and organization support", and found the highest mean of nurse's role efficacy was related to centrality. Also, this finding is in agreement with a study conducted by **Orkibi et al.** ⁽²⁷⁾ who studied "Creative Adaptability and Emotional Well-Being During the COVID-19 Pandemic: An International Study", and presented that there was a high level of creativity during covid-19.

However, in disagreement with these findings, a study was conducted in Awka by **Oguebe and Joe-akunne** ⁽²⁸⁾ who studied "the effect of role efficacy on work centrality among workers" and found that most of studied nurses had a high level of nonconfrontation dimension of role-efficacy and low level of creativity

Regarding correlation between COVID-19 social stigma and nurse's role efficacy during COVID-19. The results of this study clear that, there were negative statistically significant association between the COVID-19 social stigma score and nurse's role efficacy score. This may be due to the COVID-19 is a universal disaster that most healthcare workers face and requires adequate preparedness from nurses and hospitals. Therefore, nurses who treat COVID-19 patients were stigmatized when people know that treating COVID-19 patients affects their nurse's role efficacy. This finding is in agreement with a study conducted in Spain by **Recio** ⁽²⁹⁾ to determine The mediational role of affiliate stigma and efficacy and found there was a negative correlation between stigma and role-efficacy.

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 score 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.** ⁽³⁰⁾ 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 COVID-19 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.** ⁽³¹⁾ who studied "Stigmatization and

dehumanization perceptions towards psychiatric patients among nurses", and found that there was a statistically significant relation between COVID-19 social stigma and personal characteristic of studied nurses regarding their experience

Concerning the relation between nurse's role efficacy and personal characteristics of studied nurses. The present study mentioned that there was a statistically significant relation between nurse's role efficacy and personal characteristics of studied nurses regarding their age and experience. This may be due to the nurse's role efficacy of nurses depending on their years of experience in the workplace. The more experience, the more nurse's role efficacy.

A similar finding was consistent with a study conducted in India by *Kim and Kim*⁽³²⁾ who studied "Analysis of the Impact of Health Beliefs and Resource Factors on Preventive Behaviors against the COVID-19 Pandemic", and found that there was a statistically significant relation between nurse's role efficacy and demographic variables (age and experience).

Also, this finding is in disagreement with a study conducted in Iranian by *Seyedi-Andi et al.*⁽³³⁾ who studied "The relationship between role-efficacy and some demographic and socioeconomic variables among Iranian Medical Sciences students", and found that there was a significant negative statistical relationship between the role-efficacy index and demographic variables such as age and experience

Conclusion:

In the light of the main study results; it can be concluded that the most of studied nursing staff had a high level of COVID-19 social stigma and a moderate level of nurse's role efficacy. Additionally, there was statistically negative significant association between COVID-19 social stigma and nurse's role efficacy. Moreover, there was a statistically significant relation between COVID-19 social stigma and personal data of studied nurses regarding their gender and experience. Furthermore, there was a statistically significant relation between nurse's role efficacy and personal

characteristic of studied nurses regarding their age and experience.

Recommendations:

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 with 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 with encouragement/counseling for those on COVID-19 frontlines to reduce discrimination.
- Implement 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.
- Partner 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.

Table 1: Distribution of personal data of the nurses (n= 230)

Variables	NO	%
Gender		
Females	178	77.4 %
Males	52	22.6 %
Age per years		
20 <30 years	160	69.6 %
30 <40 years	70	30.4%
Mean +SD 26.57+ 1.41		
Social status		
Single	99	43.0%
Married	123	53.5%
Divorced	5	2.2%
Widow	3	1.3%
Experience		
<5 years	152	66.0%
5-10 years	36	15.7%
>10 years	42	18.3%

Table (2): Prevalence Distribution Social stigma during COVID-19 among studied nurses (n=230).

Dimensions	Mean± SD Median(range)	high		Moderate		Low	
		NO	%	NO	%	NO	%
A- Discrimination score (11)	7.77±2.01 8(1-11)	176	76.5	28	12.2	26	11.3
I. Behavior score (5)	3.78±1.26 4(1-5)	158	68.7	26	1.3	46	20.0
II. Beliefs score (6)	3.99±1.344 (1-6)	90	39.1	95	4 1.3	45	19.6
B-Fear score (6)	3.85±1.49 4(1-6)	160	69.5	52	22.6	18	7.9
C- Acceptance score(12)	6.85 ± 2.09 7 (2-10)	173	75	36	5	21	10
I. Negative Acceptance score (7)	4.86±1.89 5 (1-7)	110	47.8	52	2 2.6	68	29.6
II. Positive Acceptance score (5)*	1.99±0.9 2 (1-4)	50	21.7	62	7.0	118	51.3
Total mean scores of social stigma	18.48±4.41 19 (3-25)	197	85.6	33	10	10	4.4

(*)maximum score

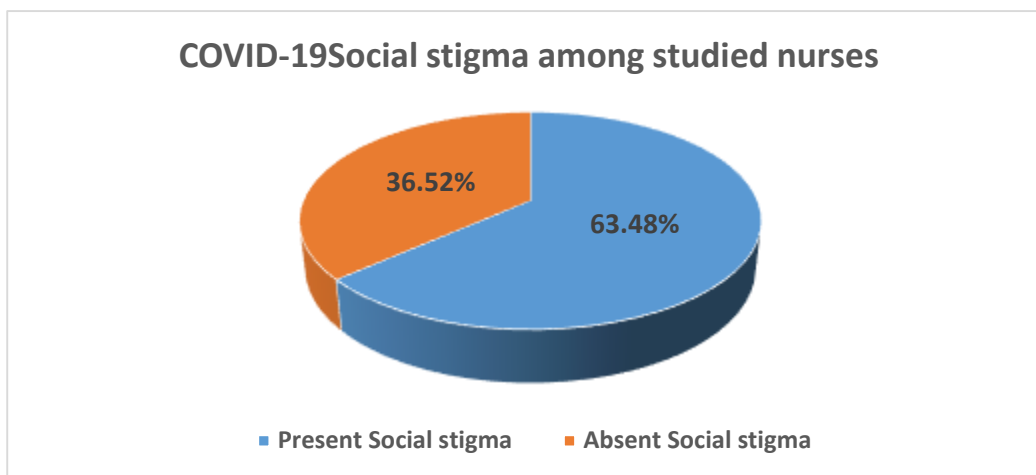


Figure 1: Prevalence of nurses social stigma during COVID-19 as perceived by studied nurses (n=230)

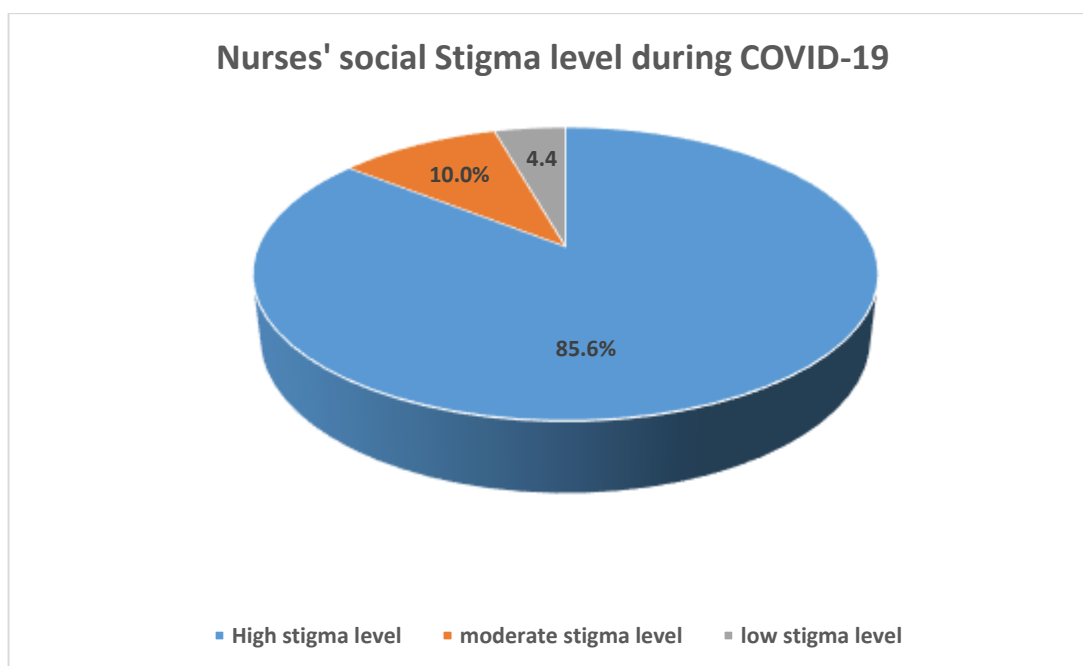


Figure 2: Total levels of social stigma during COVID-19 epidemic as reported by studied nurses (n= 230)

Table (3): Total levels of studied nurses according to their perception of nurse's role efficacy during COVID-19 pandemic (n=230).

Dimensions of role efficacy	Mean± SD	High		Moderate		Low	
		N	%	N	%	N	%
		O		O		O	
Confrontation score (28)	19.71±4.02 20(7-28)	92	40.0%	10	43.5%	38	16.5%
Centrality score(16)	12.096±2.64 13(4-16)	14	61.5%	78	33.5%	10	4.4%
Inter role score(16)	12.304±2.71 13(7-16)	10	45.5%	84	36.5%	42	18.5%
Creativity score(12)	8.62±2.449 (3-12)	13	59.5%	70	30.5%	24	10.5%
Helping score(8)	5.98±1.866 (2-8)	12	52.5%	80	34.5%	30	13.5%
Total mean scores of Nurse's role efficacy (80)*	58.71±6.94 58(41-80)	49	21.5%	15	6.5%	23	10.5%

(*):Maximum score

Table (4): Correlation among Social stigma and nurse's role efficacy during COVID-19 pandemic (n=230).

Variables	Social stigma		Nurse's role efficacy	
	r	p	r	p
COVID-19 Social stigma score			-0.509**	0.000
Nurse's role efficacy score	-0.509**	0.0001		1

Table (5): Relation between social stigma and personal data of studied nurses (n=230).

Variables		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	2.34	0.02*
	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	3.398	0.035*
	5-10 years	17±5.13		
	>10 years	19.57±4.197		

Table (6): Relation between nurse's role efficacy and personal data of studied nurses (n=230).

Variables		Nurse's role efficacy		t/f	p
		Mean	SD		
Age	20<30 years	57.89	5.99	2.43	0.017*
	30<40 years	60.6	8.46		
Gender	males	58.92	6.12	0.248	0.805
	females	58.65	7.17		
Social status	single	58.404	6.62	1.303	0.274
	married	59.22	6.996		
	divorced	56	11.14		
	Widow	52.67	6.35		
Education	nursing diploma	60.14	6.797	2.36	0.097
	Technical institute	59.66	6.31		
	Bachelors	57.83	7.25		
Experience	<5 years	57.88	6.68	3.861	0.022*
	5-10 years	61.22	6.499		
	>10 years	59.57	7.72		

Table (7): Multiple linear regression model for predict social stigma among studied nurses (n.230):

Predictors	Unstandardized Coefficients		T	Sig.	Model
	B	SE			
(Constant)	43.3				r= 0.55
female	-1.779	0.592	3.0	0.003	R ² =0.301
Nurse's role efficacy	-0.301	0.036	8.313	0.0001	F =32.5 P=0.0001*

Table (8): Multiple linear regression model for predict nurse's role efficacy among studied nurses during COVID-19 (n=230).

Predictors	Unstandardized Coefficients		t	Sig.	Model
	β	SE			
(Constant)	65.23				r= 0.54
Age	2.541	0.840	3.026	.003	R ² =0.29
Social stigma	-0.763	0.090	-8.456	.0001	F =31.8 P=0.0001*

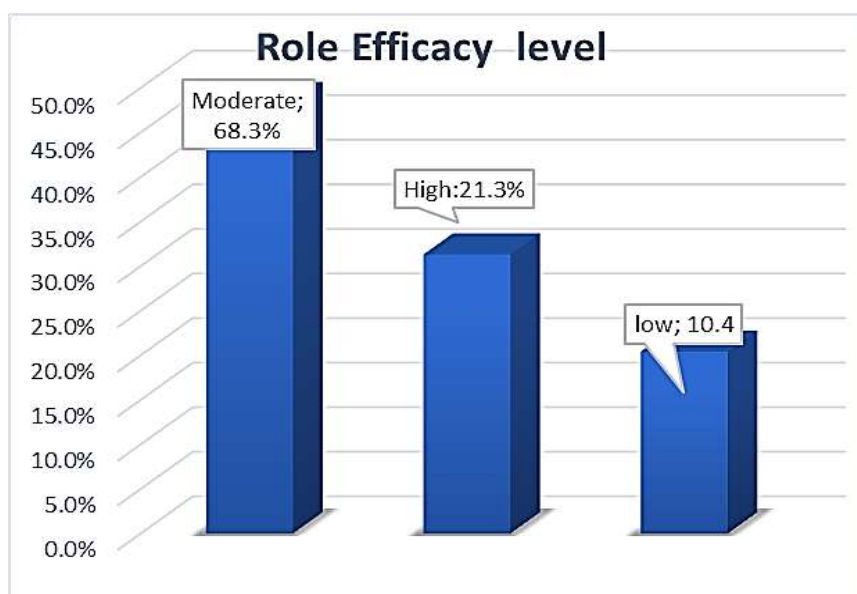


Figure 3: Total levels of studied nurses regarding their perception of nurse's role efficacy during COVID-19 epidemic (n=230).

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