Nurses' Willingness to Care of Patients with COVID-19: Impact of Work Motivation Training Program.

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Abstract

Background: Nursing is a profession requiring prolonged training at the workplace. Nurses' willingness to care of patients with COVID-19 plays a considerable role in ensuring the stability of the nursing team and in controlling the pandemic. Work motivation is an effective instrument help nurses to charge up their batteries and increase the willingness to work. Improving staff's knowledge and maintain satisfactory remuneration systems boost their willingness to work in a hazardous environment. **Aim**: Investigate the impact of work motivation educational program on the nurses' willingness to care of patients with COVID-19. **Design**: Quesi -experimental design was used to conduct this study. Setting: The study was conducted in critical care units at University Menoufia Hospital. Subjects: A simple random sample of 126 staff nurses provided direct patient care in Critical Care Units (CCUs). **Tools**: Three tools were used for data collection; Tool 1: Work Motivation Knowledge Questionnaire, consist of two parts, the first part to collect demographic data, second part; Motivational knowledge Questionnaire. Tool 2: Motivational Level Questionnaire. Tool 3: Factors Influencing Willingness to Care of Patients with COVID-19 questionnaire. **Results**: There was highly statistical significance difference among studied staff nurses regarding motivation knowledge pre and post the implementation of motivation program and their willingness to care of patients with COVID-19 $p \leq 0.001$. There was statistical significant positive correlation between the studied nurses total motivation knowledge and total motivation level mean scores and willingness level to care of patients with COVID-19. **Conclusion**: In the light of findings of the present study, the current study concluded that improving nurses' work motivation knowledge is an important strategy to improve their willingness to participate in care of patients with COVID-19. **Recommendations**: For nursing managers, improving nurses' perceived professional benefits is an important strategy to improve their willingness to participate in care of patients with COVID-19, Integrating crisis management to nurses' in the early stages of their educational curriculum. All medical supplies should be available, such as personal protective equipment and vaccination to help keep the lives of nurses and patients safe. Raising the awareness of infectious diseases and increased pre-disaster training during infectious disease outbreaks is equally critical.

Keywords: COVID-19; Willingness; Nurses; Work motivation; Training; Program.

Introduction

Nursing is the largest frontlines and the most diverse professional workforce within any healthcare system. Therefore, their role in defining the care and services is very instrumental. The COVID-19 pandemic has affected the provision of care across the world (**Saqlain et al., 2020**). The challenges and obstacles of the pandemic present to their services and make the changes to their

system. The provision of care has changed depending on the setting as critical intensive care units and providing care through a variety of modalities, including using a telephone or video camera, or in person with personal protective equipment (PPE). (**Al-Hunaishi, Hoe, & Chinna, 2019; Liu et al., 2020**).

At many hospitals, patients considered for admission are now undergoing rapid testing to determine COVID-19 status. COVID-19 positive and COVID-19 negative inpatient units have since been established, although split positive and negative units have been met with much separately and controversy (**Cui, 2020**). Training is an essential stage, while nursing staff are fresh and as transparent materials. Nurses are fearful of acquiring or being infected by a highly contagious virus. However, the majority of them are still willing to work and accept it as an obligation and part of their job despite the risks. Most issues that face nurses when dealing with patients with COVID-19 can be summarized into two main types. (**Saqlain et al., 2020**). 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. (**Chen, Tian, Li & Li, 2020**) The second type involves a lack of medical supplies and resources, such as personal protective equipment (PPE) (**Newby et al., 2020**).

Work motivation is a prerequisite for better organizational performance. Motivation may be described as the processes that account for an individual's intensity, direction, and persistence of effort toward attaining a goal. It is defined as an intrinsic process that psychologically directs the behavior of an individual. Furthermore, in the healthcare field, attaining health objectives in a population depends to a large extent on the provision of effective, efficient, accessible, viable, and high-quality services by healthcare professionals who, technically, are driven by motivation (**Lambrou, Kontodimopoulos &Niakas, 2010**).

Ideally, every employee will put up a better performance if the incentive packages are rewarding and in line with the capacity to meet the needs of the individual. In this regard, while economic factors play a crucial role in the motivation and retention of healthcare workers, including nurses, in healthcare facilities and other work posts, other factors are equally as important to keeping their loyalty. The workforce in the health sector has specific features that cannot be ignored, and motivation can play an integral role (**Marquis & Huston, 2015**).

In healthcare organization, work motivation is an important measure of healthcare professional's response to the increasing challenges and demands. Motivation is known as a process that starts with an inspiration to perform and energized to an end. It initiates behaviors to accomplish the intended goals. It is a complex, multidimensional and therefore defined as "the force within individual that influence or direct behavior" Motivation is a concept used to describe an external state inspiring a special behavior and internal responses revealing that behavior (**Toode, Routasalo &Suominen, 2011**).

In the organizational context, motivation is explained as the stimulus of work behavior, which channels the worker's effort to accomplish the organization's goals. Worker motivation is the result of the interactions between individuals (internal psychological

process), their work environment (a transactional process) and the fit between these interactions and the societal context (**Suangga &Tuppal, 2017**).

There are two different types of motivation: intrinsic and extrinsic. Intrinsic motivation (IM) is an inner force that leads workers to meet personal and organizational aims. It guides individuals to do activity that they find it exciting People who were intrinsically motivated have internal drive that forms behaviors and inspiration to perform responsibilities without any external effects (**Suangga &Tuppal, 2017**). Therefore, IM arises from the person's pleasure in the job itself or self-interest and without pressure of others as well as it is recognized by its own and does not rely on results. The IM among nurses, in the healthcare context, is operationally defined as self-gratification and pleasure in carrying out responsibilities instead of working for external rewards (**Hee, Kamaludin &Ping, 2016**).

Extrinsic motivation (EM) is an exterior force that leads workers to meet personal and organizational aims. Moreover, it guides persons to carry out responsibilities by using coercion or instruction to get rewards in return. Extrinsic rewards consist of awards, bonuses, pay and benefits (**Roussel &Swanburg, 2009**).

It also can be in the forms of good relationship between workers, better facilities, good working conditions and higher administrator's quality at the work area. The EM in the healthcare context leads the nurses to achieve work behaviors such as prizes, positions, awards, incentives and numerous fringe benefits which generated by external stimuli and profit themselves and their organization (**Hee et al., 2016**). Motivated nurses are able to do tasks well and gain more knowledge and skills, improve standards of practice, a higher level of work satisfaction and promotion, increased productivity, fewer occupational accidents and effective patient outcomes than less motivated nurses apparently (**Suangga & Tuppal, 2017**).

Motivated nurses have reported stronger behavior, verbal outcome empowerment and high quality of performance than unmotivated nurses, whereas low work motivations, on the contrary, have led to a decrease in service quality (**Emmanuel, 2015**). The primary factor that can impact the willingness of nurses is the hospital's preparedness plans that consider the safety of their staff members. Improving self-efficacy through training can increase willingness to participate in a disaster (**Al-Hunaishi et al., 2019**). The training, knowledge and attitude of nurses and other healthcare providers are expected to largely influence the degree of adherence to the proper use of personal protective measures and ultimately will be reflected on clinical outcomes for patients with COVID-19. Expected monetary compensation that is associated with the level of risk exposure can impact the nurses' willingness to take care of patients with COVID-19. Improving staff's knowledge and to consider satisfactory remuneration systems to boost their willingness to work in a hazardous environment. (**Suangga & Tuppal, 2017**).

Significance of the Study

The success of any an organization depends on how well motivated its personnel or staff. Epidemics early reports related to COVID-19 indicate that the rate of infection among health care professionals with this virus was more extensive. More than 7.6 million cases of COVID-19 had been confirmed worldwide. Nurses especially in hazardous care units were having a professional obligation to care the infected patient during a pandemic or epidemic and it impacted on them personally, physically, psychologically, and so on. Additionally, the vulnerabilities of their job for being infected, transmission of the infection to family members, and social stigma about the concerns (**Huang & Rong Liu, 2020**).

In this era, the willingness of nurses to work and stay in an organization depends on the extent to which they are adequately motivated. Unmotivated nurses are likely to spend little or no effort in their job and avoid the workplace as much as possible especially during a pandemic or epidemic, so, they need to motivate and willingly undertake. (**Saqlain et al., 2020**). Moreover, from study setting practice, the researcher conducted preliminary study to assess the nurses' motivation and strategies applied to motivate critical care nurses; it revealed that there is no motivation strategies applied during COVID pandemic ,the nurses depressed from death of their colleges in the workplace and fear from being infected and be COVID.

Nowadays, the nurses must have knowledge and awareness concerning work motivation for refreshing and increasing their knowledge. The educational process is a primary factor that results in improving performance in the workplace from gaining knowledge. Additionally, a review of the literature did not yield any studies on the impact of work motivation education program as a predictor for willingness to work with patients diagnosed with COVID-19 from nurse's perspective. Accordingly, the present study aimed to investigate the impact of work motivation training program on nurses' willingness to care of patients with COVID-19.

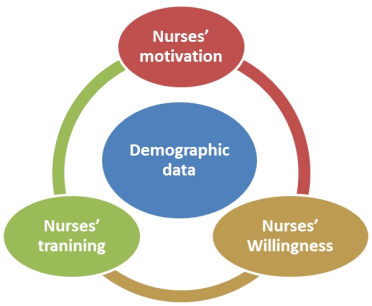

Figure 1: Conceptual Research Model

Subjects and Method

Design: Quesi -experimental design was utilized in carrying out this study.

Setting: This study was conducted at Menoufia University Hospital as in the following critical care units (CCUs) as chest ICU, intensive ICU, pediatric ICU (PICU), dialysis unit, and cardiac ICU at Menoufia Governorate, Egypt

Sample: Representative simple random sample of nurses who were working in selected critical care units and responsible for providing direct nursing care for patient with COVID or suspensed patients. The total number of nurses who working in all CCUs was 403 nurses at the study time, so the total number of nurses included in the study was 126 chosen randomly.

Aim of the Study

The study aimed to investigate the impact of work motivation training program on the nurses' willingness to care of patients with COVID-19.

Objectives

1- Assess the level of motivation knowledge during COVID-19 among studied staff nurses pre and after work motivation training program.

2- Assess number of motivated and demotivated nurses before and after program

3- Assess the most common factors influencing nurses' willingness to care of patient with COVID-19.

4- Assess the most common desired work motivated factors as perceived by studied staff nurses

5- Designing and implementing work motivation training program

6- Identify the impact of work motivation training program willingness to care of patient with COVID-19 among critical care units' staff nurses.

Research hypothesis:

H1: there is increasing in willingness to care of patients with COVID-19 among the studied nurses after implementation of the work motivation training program.

Instruments for Data Collection

Three instruments were used to fulfill the aim of this study.

Instrument one: Motivation knowledge questionnaire. Self-administered questionnaire was developed by the researchers based on **El-sayad (2019), Marquis and Huston (2015)** and relevant literature review to assess staff nurses knowledge regarding work motivation. It included two parts:

Part one: Demographic characteristics of participants. It aimed to obtain the demographic information such as age, gender, educational preparation, marital status, years of nursing experiences, and source of obtaining COVID-19 knowledge.

Part two: it consisted of 29 questions described as follows:

Table a: Motivation knowledge items.

Motivation knowledge items (question types)	Multiple choice	True and false	Discuses	total
• Definition and concept of motivation at workplace.	2	1		3
• Importance of motivation during COVID-19.	4			4
• Process of wok motivation	3			3
• Types of motivation	4	1	2	7
• Methods of motivation	2	3		5
• Obstacles of motivation during COVID-19.	2			2
• Motivation theory	3	2		5
Total Motivating knowledge Scores	**20**	**7**	**2**	**29**

Scoring system:

Each question was assigned a score of (one) for correct answer and zero

for the wrong answer. Therefore, the total level of knowledge was converted into percentage, the total level of knowledge was considered poor if the percent score ≤ 60%, average if the percent score 60%-75 %, and good if the percent score 75 % (**Elsayad, 2019**)

Instrument two: Motivational Level Questionnaire. It was developed by the researchers based on **Charl Van (2011)**. It was developed to assess the motivating work factors among nurses at study setting and assess the extent to which hospitals provide motivating work factors Scoring system for nurses' motivation:

A three point's likert scale type was used for each statement as follows: "1" disagree, "2" neutral and "3" for agree. Motivated nurses who get ≥ 60 % of total motivation scores, and demotivated nurses who get < 60 % of total motivation scores (**Ell-aboudy, 2017**).

•**Instrument three**: Nurses' Willingness to Care of Patient with COVID-19 questionnaire. It includes two parts:

Part one: it consisted of one item as an inquiry (requested to express nurses willingness) whether the respondent willingness to care of patient with COVID-19 or not (**Saqlain et al., 2020**).

Part two: Contributing factors influencing the willingness to care of patients with COVID-19 was adapted from Al-Jabry and Abujaber (2020). It was developed to assess factors influencing nurses' willingness to care of patient with COVID-19 at study setting and ask nurses to rank them.

Scoring system for contributing factors of influencing the willingness to care Patients with COVID-19 (Ranking 15 items): A three point's likert scale type was used for each statement as follows: "1" agree weakly, "2" agree moderately and "3" for agree substantially.

Construction of the Training program:-

The program was conducted at four phases:

1-Preparatory phase:

This phase started from March to end May 2018 covering three months. It includes a review of recent, current, national and international related literature regarding work motivation. Also, journals, magazines, text books, internet, and theoretical knowledge of the various aspects concerning the study topics. The researchers prepared the data collection tools and translated into Arabic language.

2- Assessment phase:

This phase took six months before intervention (work motivation training program). In this phase studied CCU nurses was assessed for socio demographic data and assessed regarding nurses' knowledge regarding motivation at work during COVID-19.

3-The planning and implementation phase:

This phase included the program strategy (time, number of sessions ,and teaching method).The teaching place and the facilities were checked for appropriateness .Number of sessions were four sessions ,one session per week .Each session takes from 40-60 minutes(5 hours; 4 theoretical and 1 practical for all program). At the end of the program implemented, a booklet of the program was given to each nurse as teaching

media and reference. Teaching sessions of the program were conducted in critical care units at Menoufia University hospital. Program of intervention was designed, with general objectives to estimate impact of the work motivation program on willingness of CCUs staff nurses to care of COVID-19 patients. The researchers were interviewed with studied nurses one day every week during the break time to avoid nurses' time wasting and emphasized upon maintaining distance and protective measurements during the implementing of the program.

The program content included:-

Program objective:

To motivate CCUs staff nurses to increase willingness of them to care of patients with COVID-19.

Selection and Organization of content:

The content was selected carefully and included topics of: definition of work motivation, importance of work motivation, impact of motivation, theory of motivation, etc.

Methods of teaching:

Selection of teaching methods was governed by consideration for subject characteristics and program contents. The methods used in teaching the program included lecture, clinical activities, situation from real life and group discussion.

Teaching aids:

The teaching aids used in the program were booklet, handouts and power point

The program consisted of four sessions:

Session 1: Greeting the nurses then provide manuals hand out and booklet then show the program objectives, fill pretest (knowledge questionnaire) from nurses,

Session 2: give theoretical and practical information related to work motivation during COVID-19 pandemic

Session 3: give theoretical and practical information related to work motivation during COVID-19 pandemic.

Session 4: give theoretical and practical information related to work motivation during COVID-19 pandemic, fill posttest, then thanks the studied staff nurses for their active participation.

4- Evaluation phase: Nurses were evaluated for their willingness to care of patients with COVID-19 after the implementation of the program.

- **Validity**

A bilingual group of seven of experts was selected to test the content and face validity of the tools. Necessary modifications and removal of some questions were done to reach the final valid version of the tools. The questionnaires were reviewed for content validity by a seven of experts (3 professors from nursing administration and 2 assistant professors from community health nursing and 2 assistant professors from psychiatric nursing) The tools were considered valid from the experts' perspective

Reliability: The internal consistencies of the questionnaires were calculated using Cornbrash's alpha coefficients. The Cornbrash's alpha of the motivation knowledge questionnaire was

0.97, for motivation level questionnaire was 0.91 and for willingness to work with COVID-19 patient questionnaire was 0.89 which indicated good reliability, "indicating that data collected through these questionnaires were reliable".

Procedure for Data Collection

Written official approval to conduct this research was obtained from the faculty dean of Nursing that was taken and delivered to the director of Menoufia University Hospitals to obtain their agreement to conduct the study after explaining its purpose. Informed consent was obtained from critical ICU staff nurses who chosen randomly and the aim of the study was explained to them. The data collection from the beginning of June (2020) to the end of Augustus (2020) were covering three months.

Ethical consideration:

Protection of nurse's rights was obtained from the participants to share in the study; the researchers initially introduced themselves to all participants. They were informed about aim of the study. Each participant was notified about the right to refuse to participate in the study, before taking the verbal consent.

• **Tool development**: the tools were reviewed and tested for content validity by 7 experts in the field of nursing; modification was done accordingly to ascertain relevance and completeness (the experts use blueprint to test the content validity of questionnaires).

• **Pilot study**, a pilot study was conducted on 10 % of the study sample (13 nurses) to evaluate the developed tools before starting the actual data collection. Based on the results of the pilot study, modifications, clarifications, omissions, and rearrangement of some items were done. It also helped to estimate the time needed to fill in the questionnaires, and these were included in the sample because no modifications were done .The time taken for every questionnaire to be completed was about 20- 25 minutes for each nurse.

• **Anonymity and confidentiality** of the information gathered was ensured (the researcher coded each questionnaire before and after the program) Then, the designed questionnaire was distributed to them, with instructions about its filling.

Statistical Analysis:

Upon completion of data collection, data entry was done. Then data were coded, analyzed using Statistical Software Packages. SPSS-v.20. Descriptive and analytical statistics were applied. Data were presented using frequency, percentages and mean were calculated for descriptive data analyses. The chi-square (X2) test was used to compare categorical data and the t-test was used for continuous variables. Correlation between variables was evaluated using Pearson's correlation coefficient (r). Highly significance was adopted at $p \leq .0.001$; significance was adopted at $p \leq .05$ for the interpretation of the results of tests of significance.

Results

Table (1): Represented demographic characteristics of the studied staff nurses. As shown in the table, the highest percentage of the studied staff nurses was between 30 - 40 years old and most of them were female nurses. Also the highest percentage of the studied staff nurses was diploma nurses & had 10- <15 years of experience and most of them were married and the most common source of obtaining of COVID-19 knowledge was television .

Table (2): Represented distribution of mean and standard deviation of motivation knowledge during COVID-19 through program phase. As shown in the table, there was highly statistical significant difference among studied staff nurses regarding motivation knowledge pre and post the implementation of work motivation program, where $p \leq 0.001$.

Table (3): Represented distribution of number and percentage of the studied nurses' motivation knowledge total levels during COVID-19 pre and post the implementing program. As shown in the table, there was highly statistical significance difference among studied staff nurses regarding knowledge pre and post the implementation of motivation program, where $p \leq 0.001$.

Figure (1): As showed from the figure, there was a significant improvement in the level of knowledge of the studied nurses about work motivation throughout program phases; before and after the implementing of the motivation training program program.

Table (4): Distribution of number and percentage of the studied staff nurses' willingness to care of patient with COVID-19 before and after the implementing program. As shown in the table, there was highly statistical significance different among the studied staff nurses regarding their willingness to care of patient with COVID-19 before and after the implementing program, where $p \leq 0.001$.

Table (5): Represented distribution of number and percentage of motivated and demotivated CCUs studied staff nurses during COVID-19 before and after the program. As shown in the table, there was highly statistical significant difference among CCUs studied staff nurses regarding motivation level during COVID-19 before and after the program, where $p \leq 0.001$.

Figure (2): As showed from the figure, there was a significant improvement in the studied Staff Nurses' willingness to Care of Patients with COVID-19 throughout program phase.

Table (6): illustrated frequency and percentage distribution agreement and ranking of influencing factors of willingness to care of patient with covid-19 among the studied staff nurses. As showed from the table, the first ranking was priority for vaccination/antiviral treatment, while the latest ranking was good nurse- patient relationship.

Table (7): displayed means scores, standard deviation and ranking distribution of motivating work factors during covid-19 as reported by the studied staff nurses. It indicated that the first ranking with mean score (20.91±6.82) was motivational policies and leadership, while enabling work environment (3.66±1.46) which considered the latest one.

Table (8): displayed correlation between studied nurses' willingness to care patients with COVID-19 scores and total knowledge and motivation level mean scores. It illustrated that, there was highly statistical significant positive correlation among studied nurses' willingness to care patients with COVID-19 scores and total knowledge and motivation level mean scores after the implementation of the program, where $p \leq 0.001$.

Table (9): displayed correlation among studied nurses' motivation knowledge, total motivation, and their demographic data through phases of motivational program. It illustrated that,

there was a statistical significant difference between motivation knowledge, total motivation, and age as demographic data after implementation of motivational program where $p \leq 0.001$, while there was a statistical significant difference between total motivation knowledge, total motivation level, and qualification and years of experience as demographic data after implementation of motivational program where $p \leq 0.05$.

Table (10): illustrated relation between the studied nurse's willingness level and their demographic data through phases of training program. It illustrated that, there was a highly statistical significant difference between the nurse's willingness level and age, qualification and years of experience as demographic data after implementation of program, where $p \leq 0.001$.

Table (1): Frequency & Percentage Distribution of Demographic Characteristics of the Studied Critical Staff Nurses (N=126).

Demographic Characteristics of studied nurses:	No	(%)
Age (years):		
• <30	30	23.82
• 30-40	87	69.04
• >40	9	7.14
Gender :		
• Male	27	21.42
• Females	99	78.57
Marital status:		
• Married	120	95.23
• Not Married	6	4.76
Educational preparation :		
• Diploma	66	52.38
• Associated degree	27	21.42
• Bachelor	33	26.19
Working years of experience in nursing :		
• 5- <10 years	24	19.04
• 10- <15 years	90	71.42
• ≥15 years	12	9.53
Source of COVID-19 knowledge		
• Television	66	52.3
• Newspaper	12	9.5
• Internet	24	19.0
• Hospital training programme	9	7.14
• Others	15	11.9

Table (2): Distribution of Mean and Standard Deviation of the studied nurses' work Motivation Knowledge to care of patient with COVID-19 pre and post the implementing program (N=126).

Work Motivating knowledge	Pre-prog. Mean ± SD	Post-prog. Mean ± SD	Paired t test	P value
• Definition and concept of motivation at workplace.	1.71 ± 0.35	2.14 ± 0.33	9,405	**0.001
• Importance of motivation during COVID-19.	1.15± 1.43	2.14 ± 1.33	10.19	**0.001
• Process of wok motivation	0.82 ± 1.13	2.60 ± 0.45	17.08	**0.001
• Types of motivation	3.19 ± 1.21	6.34 ± 0.11	8.57	**0.001
• Methods of motivation	2.14 ± 1.33	4.55 ± 0.65	14.89	**0.001
• Obstacles of motivation during COVID-19.	0.99 ± 1.95	1.02 ± 0.34	4.57	**0.001
• Motivation theory	3.10 ± 1.13	4.54 ± 0.65	8.29	**0.001
Total Motivating knowledge Mean Scores	3.96±2.3	5.3±1.44	9.32	**0.001

* Statistically significant difference at $p \leq .05$,
** Highly statistically significant difference at $p \leq .001$.

Table (3): Distribution of number and percentage of the studied nurses' motivation Knowledge total levels during COVID-19 pre and post the implementing program (N=126).

Motivation knowledge level	Pre program		Post program		X^2	p.value
	No	%	No	%		
• Poor level of motivation knowledge during COVID-19	78	61.9%	9	7.1%	40.34	**0.001
• Average level of motivation knowledge during COVID-19	33	26.2%	18	14.3%		
• Good level of motivation knowledge during COVID-19	15	11.9%	99	78.6%		

* Statistically significant difference at $p \leq .05$,
** Highly statistically significant difference at $p \leq .001$

Figure (1): percentage Distribution of the studied nurses' motivation Knowledge total levels during COVID-19 pre and post the implementing program (N=126)

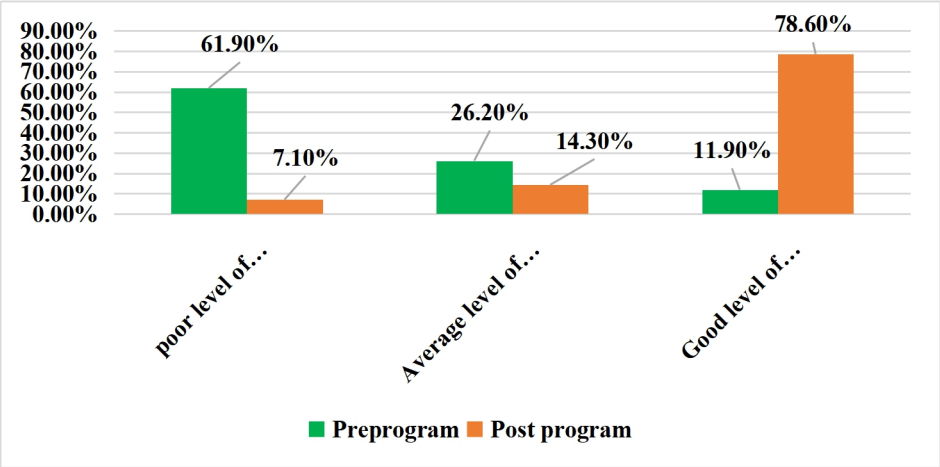

Table (4): Distribution of number and percentage of the studied Staff Nurses regarding to willingness to Care of Patients with COVID-19 before and after the implementing program (N=126).

Willingness level	Pre program		Post program		X^2	p.value
	No	%	No	%		
• Willingness to Care of Patients with COVID-19	51	40.5%	111	88.1%		
• Unwillingness to Care of Patients with COVID-19	75	59.5%	15	11.9%	31.19	**0.001

* Statistically significant difference at $p \leq .05$,
** Highly statistically significant difference at $p \leq .001$

Table (5): Distribution of number and percentage of motivated and demotivated CCU nurses during COVID-19 before and after the implementing program (N=126).

Motivation level	Pre program		Post program		X^2	p.value
	No	%	No	%		
• Number of motivated CCU staff nurses during COVID-19(	26	20.63%	100	79.37 %	11.13	**0.001
• Number of demotivated CCU staff nurses during COVID-19	95	75.39%	31	24.61 %		

* Statistically significant difference at $p \leq .05$,

** Highly statistically significant difference at $p \leq .001$

Figure (2): Distribution of number and percentage of the studied Staff Nurses' willingness to Care of Patients with COVID-19 (N=126).

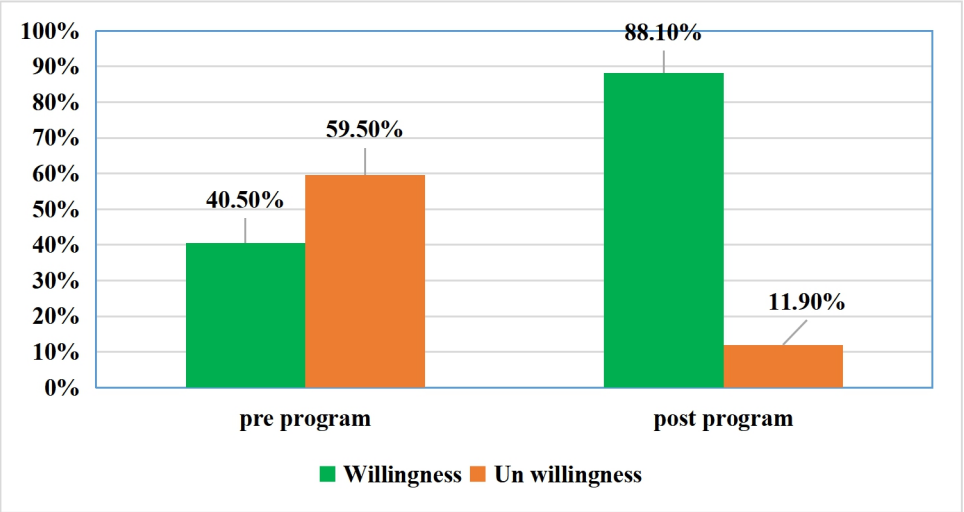

Table (6): Frequency and Percentage Distribution Agreement and Ranking of influencing Factors of Willingness to Care of Patient with COVID-19 among the studied staff nurses (N=126).

Influencing Factors	Agree weakly		Agree moderately		Agree substantially			Ranking
	No	%	No	%	No	%		
1) Priority for vaccination/antiviral treatment	3	2.38	6	4.76	117	92.85	92.1	1
2) Knowledge and awareness toward Coronavirus disease	6	4.76	27	21.42	93	73.80	86.9	2
3) Good nurse- patient relationship	24	19.04	36	28.57	66	52.38	57.8	15
4) Attitude toward Coronavirus Disease	3	2.38	3	2.38	120	95.23	69.2	6
5) Empathy toward Coronavirus patient	9	7.14	48	38.09	69	54.76	60.0	12
6) Pre disaster training	6	4.76	15	11.90	105	83.33	61.1	10
7) Appreciation and recognition of relatives and friends	6	4.76	3	2.38	117	92.85	63.4	8
8) Family protection	12	9.52	21	16.66	93	73.80	84.1	3
9) Frequency contact	3	2.38	24	19.04	99	78.57	59.8	13
10) Logistic Provision as drugs, consumables, syringes, and infusions.	3	2.38	6	4.76	117	92.85	80.8	5
11) Enabling work environment	3	2.38	3	2.38	120	95.23	62.1	9
12) Sense of team belonging	24	19.04	36	28.57	66	52.38	60.1	11
13) Job security (feeling that they were being protected by their hospital)	27	21.42	33	26.19	66	52.38	82.4	4

14)	Incentives and financial supports	9	7.14	18	14.28	99	78.57	68.2	7
15)	Professional obligation	9	7.14	24	19.04	93	73.80	58.8	14

Table (7): Means Scores and Ranking Distribution of Motivating Work Factors During COVID-19 as Reported by The Studied Staff Nurses (N=126).

Motivating work factors	Mean ± SD	Maximum Score	Minimum Score	Ranking
• **Rewards**	6.38 ± 2.17	12	4	7
• **Goal-setting**	8.38 ± 2.71	15	5	5
• **Enabling Work Environment.**	3.66 ± 1.46	6	2	12
• **Job characteristics**	10.32 ± 3.09	15	5	2
• **Pay and financial incentives**	6.12 ± 2.19	12	4	8
• **Advancement and growth**	6.11 ± 2.21	12	4	9
• **Working conditions**	9.16 ± 2.84	15	5	3
• **Recognition and appreciation**	7.56 ± 2.71	15	5	6
• **Training and development**	8.87 ± 3.11	15	5	4
• **Job responsibility**	5.28 ± 1.76	9	3	9
• **Job security**	4.92 ± 1.87	9	3	10
• **Supportive relationship and communication**	4.45 ± 1.81	9	3	11
• **Motivational policies and Leadership**	20.91 ± 6.82	36	12	1
Total means scores	16.88 ± 5.21	180	60	

Table (8): Correlation between the Studied Nurses' Willingness to Care of patients with COVID-19 and Their Total Motivation Knowledge and Motivation Level Mean Scores.

Variables	Total Willingness level			
	Pre program		Post program	
	r	p-value	r	p-value
• **Total work motivation knowledge means score.**	0.074	0.642	0.805	**0.001
• **Total work motivating factors means score.**	0.033	0.837	0.366	**0.001

* Correlation is significant at $p \leq .05$,
** Correlation is highly significant at $p \leq .001$.

Table (9): Relation between the Studied Nurses total Motivation knowledge mean score, Motivation level mean score, and their Demographic Data through Phases of training Program (N=126).

Soci-demographic characteristics	Total Motivation knowledge mean scores		T.test	P.value	Total motivation level mean scores		T.test	P.value
	Pre program.	Post program.			Preprogram.	Post program		
Age	Mean ± SD	Mean ± SD			Mean ± SD	Mean ± SD		
▪ <30	26.9 ± 9.43	36.1±3.12	9.42	*0.032	42.50 ±20.49	81.00±7.54	11.42	**0.001
▪ 30-40	29.87± 6.52	38.31±3.43	8.57	*0.026	50.97±22.84	83.31±15.33	12.3	**0.001
▪ >40	30.00 ± 8.57	40.33±0.57	6.82	*0.033	45.00 ±20.49	91.33±5.51	11.65	**0.001
Qualification								
▪ Diploma	27.00 ±8.48	27.00 ± 8.48	8.57	1.00	32.62±3.99	36.09±4.25	8.32	*0.04
▪ Associated degree	32.44 ± 3.91	32.44 ±3.91	9.46	1.00	28.76 ±7.38	39.22 ±2.22	9.26	*0.032
▪ Bachelor	28.91±7.41	28.91±7.41	10.5	1.00	25.25±9.84	38.32 ±3.067	9.86	*0.021
Years of Experience								
▪ 5- <10 years	49.87 ± 26.48	86.37±5.62	9.32	*0.021	27.5 ± 8.5	36.,9 ± 4.3	8.92	*0.041
▪ 10- <15 years	47.97 ±21.32	82.43±15.03	9.46	*0.024	32.4 ±3.9	39.22 ± 2.2	8.23	*0.043
▪ ≥15 years	53.00 ± 24.48	84.00±13.34	10.5	*0.011	28.9 ±7.4	38.3± 3.06	9.31	*0.036

* Statistically significant difference at $p \leq .05$, ** Highly statistically significant difference at $p \leq .001$

Table (10): Relation between the Studied Nurses Willingness level and their Demographic Data through Phases of Motivational Program. (N=126).

Demographic characteristics	Nurses' Willingness level scores											
	Preprogram.						Post program					
	Unwillingness (75)		Willingness (51)		X^2	P.value	Unwillingness (15)		Willingness (111		X^2	P.value
	No	%	No	%			No	%	No	%		
Age												
• <30	18	60.0	12	40.0	0.708	0.702	0	0.0	30	100.0	3.62	**0.001
• 30-40	54	58.1	39	41.9			12	13.8	75	86.2		
• >40	3	100.0	0	0.0			3	33.3	6	66.7		
Qualification												
• Diploma	21	63.6	12	36.4	2.76	0.901	6	18.2	27	81.8	5.06	**0.001
• Associated degree	15	55.6	12	44.4			0	0.0	27	100.0		
• Bachelor	39	59.1	27	40.9			9	13.6	57	86.4		
Years of Experience												
• 5<10years	12	50.0	12	50.0	0.138	0.601	0	0.0	24	100.0	6.32	**0.001
• 10<15years	57	63.3	33	36.7			12	13.3	78	86.7		
• ≥15 years	6	50.0	6	50.0			3	25.0	9	75.0		

* Statistically significant difference at $p \leq .05$. **

Discussion

Nurses are on the frontline and have a significant role in fighting COVID-19 as a pandemics crisis. Nursing motivation at workplace still remains one of sensitive subject to contribute to a higher quality and better performance particularly at hazardous environment as CCUs. This study aimed to investigate the impact of work motivation educational program on nurses' willingness to care of patients with COVID-19. Discussion of the study presented in the following sequence; the first part concerned with demographic data; motivation level before and after program. The result of the present revealed that the highest percentage of the studied staff nurses was between 30 - 40 years old and most of them were females. Also, the highest percentage of the studied staff nurses was diploma nurses & had 10- <15 years of experience and most of them were married and the most common source of obtaining of COVID-19 knowledge was television.

The results of the present study showed that most of the respondents in this study obtained information related to COVID-19 from television, the Internet, and hospital training programme. This was also true in the study on the assessment of COVID-19 knowledge among nurses in Iran where most information was obtained from the Internet: 55% from the World Health Organization (WHO) and their Ministry of Health, 88% from social media and 42% from traditional media. In comparison to one study in Taiwan, healthcare workers generally received information about COVID-19 through formal lessons which resulted in greater self-confidence (Wang et al., 2020). Different hospitals initiated programs to prepare nurses for COVID-19; however,

only 12 out of 377 (3%) of the respondents had completed hospital-based training programs. The result was consistent with **Abdulqadir et al., (2020)** who found the Internet, medical journals and television were the most sources of COVID-19 knowledge. From the researcher point of view due to the immense volume of information that was made public by social media and the use of the Internet. According to The New York Times, Internet traffic in America has drastically increased during the pandemic with people seeking more information on COVID-19 (**Times, 2020**).

One of the strategies to stop the spread of the virus is knowledge and information; for this reason, authorized governing body, such as the World Health Organization (WHO) had been consistently uploading COVID-19 facts through their websites and different social media platforms. The findings of the current study showed that the high percentage of studied staff nurses had good level of knowledge related to work motivation after program. This finding was consistent with **Kahungya,(2016)** who studied "effect of motivation on employee performance in dares salaam "and reported that the majority of employees had good motivation knowledge. Moreover, there finding was agreed with **Odukah, (2016)**who studied "factors influencing staff motivation among employees "and reported that there was highly significant improvement in knowledge level of employees.

The result of the present study revealed that the majority of studied staff nurses had willingness to care of patients with COVID-19 after the program compared with 11.9% who were unwilling. The result was consistent with other studies (**Abdulqadir et al., 2020**) who found the most of the participants expressed their willingness to work with COVID-19 patients and the minority expressed their unwillingness. Moreover, most healthcare professionals were not willing to accept new patients or take care of patients during the COVID-19 pandemic (**Apisarnthanarak et al., 2020**). Because of fear of acquiring the virus, nurses and midwives may hesitate to provide the usual care or they minimize their caring hours. There have been studies on previous flu epidemics where an increase in absenteeism is noticeable among nurses and other health care workers, which may or may not be related to sickness (**I p et al., 2015**).

From the researcher' point of view, the perception of occupational hazards exposure may lead to unwillingness to go to work, especially when they note their colleagues acquire the disease or viruses. Also, confidence in safety, risk perception, prior training, general and role knowledge were proven facilitators for willingness to work during pandemic.

This result was barrel with **Wu et al., (2020)** who found the majority of respondents were willing to participate in care of patients with COVID-19, and the minority of them were unwilling and mentioned that the reasons for unwillingness were as follows: fear of insufficient local protective measures and fear of infection, frail and weakened immune systems, an unsupportive family, limited work skills, pregnant, worried about child care, aged and had poor physical health.

Moreover, these results were not concurrent with **Danaci & Koc, (2020)** who showed that surgical nurses reported higher job satisfaction, lower job burnout and higher personalized nursing perception than nurses in other departments, which may result in surgical nurses being more willing to participate that ICUs nurses had a lower willingness

to participate than internal medicine nurses.

Regarding to the relation between studied nurse's willingness level and their demographic data through phases of training program; it illustrated that, there was a statistical significant difference between nurse's willingness level and age, qualification and experience as demographic data after implementation of educational program and there was no statistical significant difference between nurse's willingness and demographic data before implementation of educational program.

This result was in concurrent with single factor of **Wu et al (2020)**who revealed that age significantly affected nurses' willingness level ($p < .05$), while qualification had inconspicuous effect ($p > .05$). Unlike most of the earlier-mentioned studies revealed that no significant associations were found between demographics and staff willingness to care for patients with COVID-19 **(Saqlain et al., 2020).**

These results were in concurrent with **AI Hunaishi, Hoe, & Chinna (2019)** that surveyed medical workers in Sana'a, Yemen, and found that 66% of health care workers were willing to participate in the treatment of infectious diseases. The willingness of Chinese nurses to participate in care of patients with COVID-19 was much higher than before. Furthermore, regarding to the 128 nurses who were unwilling to participate, only 26 (20.31%) nurses were afraid of infection due to insufficient local protective measures, the vast majority 92 (79.69%) were attributed to poor physical fitness, unsupportive family, pregnancy and maternity, insufficient working skills, age and others. Regarding to nurses' years of experience and their willingness level to care of patients COVID-19, the present study revealed that there was a significant difference. This study was supported by **Tzeng et al. (2016)** who showed that nurses with more clinical experience were more willing to engage in disaster work than those with less clinical experience. This difference may have been caused by cultural differences of various respondents.

Regarding to certain incentives offered to motivate the studied staff nurses as a contributing factor and increase their willingness to care of patients with COVID-19. The present study showed that the contributing factors as priority for vaccination/ antiviral treatment, Knowledge and awareness toward Coronavirus disease, family protection, incentives and financial supports and job security (feeling that they were being protected by their hospital) had high ranking. The result was consistent **with Martin, Brown & Reid, (2013)** who examined potential predictors of nurses' intentions to work during the 2009 influenza A (H1N1) pandemic where nurses were significantly more likely to work if certain incentives were offered (e.g. risk allowance, family protection, priority for vaccination/antiviral treatment). Furthermore, Abdulqadir et al., 2020 added that nurses are more willing to care patients with COVID-19 when they are more Knowledgeable and well-compensated for the level of work-environment- related risks.

Another study revealed that the most influential factors motivated people to work with patients diagnosed COVID were incentives and financial supports and reported that Asian' nurses were mostly motivated by financial rewards and it was the main reason that made them leaving their countries to pursue better commercial packages overseas (**Henderson &Tulloch, 2008**).

Nevertheless, an experiment was discovered by **Ryan & Deci, (2000)** that incentives can have adverse effects on individual motivation, especially when extrinsic motivation significantly displaces the intrinsic motivation of the subject.

Conclusion

Based on the findings of the current study, The results of the current study concluded that the training motivational program significantly improved the studied nurses' work motivation knowledge is an important strategy and significantly improved their willingness level to care of patients with COVID-19. Demographic factors such as age, qualification and years of experience had statistical significant relation to willingness level after implementing motivational program

Recommendations:

The study recommended the following:

- For nursing managers, improving nurses' perceived professional benefits is an important strategy to improve their willingness to care of patients with COVID-19.

- Nurses should respond effectively to the pandemic and that all medical supplies be available, such as PPE, to help keep the lives of nurses and patients safe.

- Offering salary and offering paid sick leave for nursing staff are effective ways to increase nurses' willingness to participate in care of patients with COVID-19

- Raising nurses' awareness of infectious diseases and increased pre-disaster training during infectious disease outbreaks is equally critical.

- Integrating disaster management (COVID is biological disaster) to nurses' in the early stages of their educational curriculum.

- Adding early exposure of health care workers to relevant disaster experiences, which would further boost their willingness to participate in infectious diseases response.

- Studies must focus on nurses' levels of knowledge, preparedness, and risk perception, which affects their adherence to precautionary behaviors, as these are critical issues in the context of epidemics with no treatment

- Health care workers have different reactions to infectious diseases and nursing administrators need to make prudent decisions according to nurses' actual conditions when deploying nursing staff.

- A disaster plan for pandemics is kept in place that aims to guide nurses before, during, and after any health-related crises.

- Future studies should explore the key issues in maintaining nurses' ability to respond to the epidemic.

- Further research could examine nurses who are highly willing to care of patients with COVID-19 based on qualitative research.

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Conflicts of Interest Disclosure

The authors declare that there is no conflict of interest.

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