

Relation between Compassion Fatigue, Pandemic Emotional Impact, and Time Management among Nurses at Isolation Hospitals during COVID- 19

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Abstract

Background: Nurses face extra professional challenges due to the COVID-19 pandemic, which results in physical and mental health problems. Compassion fatigue and pandemic emotional impact are considered extra-additional stressful factors that affect nursing time and their abilities for time management. **Aim:** current study aimed to investigate the relationship between compassion fatigue, pandemic emotional impact, and time management among nurses at isolation hospitals during COVID-19. **Research design:** The present study utilized a descriptive correlational research design. **Setting:** The study was conducted at both Minia (fever and chest) hospitals. **Sample:** Two hundred registered nurses met inclusion and exclusion criteria. **Tools:** The personal interview sheet, the professional quality of life scale, the Pandemic emotional impact scale, and the time management questionnaire were used to compile the data. **Results:** Less than half of the studied sample was in the age group between 19 and < 29 years old, while the majority of them were females. Near two-thirds of the studied sample had a high level of total compassion fatigue. Also, more than half of them had a moderate level of pandemic emotional impact and time management. **Conclusion:** there is a statistically significant positive correlation between pandemic emotional impact and burnout subdomain of compassion fatigue. On the other hand, there is a statistically significant negative correlation between time planning with compassion fatigue (secondary traumatic stress). **Recommendations:** Educational workshops and periodical training programs should be implemented to reduce nurses' compassion fatigue and pandemic emotional impact and inspire nurses to work with effective time management techniques.

Keywords: COVID-19, Compassion fatigue, Pandemic emotional impact, Time management

Introduction:

Public health is threatened by a new pandemic, the Corona Virus Disease (COVID-19), which was first detected in late 2019 in Wuhan, China. The World Health Organization (WHO) issued a pandemic declaration in March 2020 (Jebril, 2020). The common cold, severe acute respiratory syndrome, and Middle East respiratory syndrome are all caused by members of the coronavirus family (MERS). Coughing, sneezing, shortness of breath, difficulty breathing, and fever are all signs of the COVID-19 virus; more severe complications include pneumonia, acute respiratory failure, kidney failure, and death (Gabutti et al., 2020).

As part of the country's efforts to contain the COVID-19 pandemic, General Hospitals and Fever and Chest Hospitals have been designated as COVID isolation centers and triage centers, respectively, for all suspected COVID-19 cases referred from General Hospitals or identified through a hotline or from walk-in patients (Ministry of Health and Population, 2021). Many nurses from all nursing specialties have been assigned to care for persons infected with COVID-19. For example, nurses with only a basic understanding of infectious diseases may work in stressful situations outside their comfort zone (Catton, 2020). Worldwide, the infection claimed the lives of around 1,500 nurses by the end of October 2020 (International Council of Nurses, 2020).

Compassion fatigue (CF) is "the result of a progressive and cumulative process that is induced by lengthy, continuous, intense interaction with patients and exposure to stress" (Salmond et al., 2019). Burnout, the slow emergence of cumulative stress connected to the work environment, and secondary traumatic stress, an internal reaction to a second exposure to severely stressful or traumatic events, comprise CF (Steinheiser, 2018). Nurses must also think about how to

avoid COVID-19-related medical issues, which may make them doubt their capacity to offer comprehensive care to patients in a compassionate manner. Consequently, nurses caring for COVID-19 patients are at increased risk of compassion fatigue. Persons who provide long-term care for those who are ill or have undergone trauma are at risk of developing compassion fatigue, characterized by depletion on all levels of functioning and an inability to empathize with the people they help. The emotional anguish that leads to compassion fatigue sets it apart from burnout, which is caused by more routine, non-emotional sources of stress like those found in administrative work (Alharbi et al., 2020).

The present health crisis owing to the coronavirus pandemic can aggravate and increase the exposure of health workers (stressful workload, increased anxiety, increased reactivity to stress, and compassion fatigue) (CF). Consequently, the quality of the treatment nurses delivers to their patients suffers from increased emotional distress and avoidance behaviors (Franza et al., 2020). Health experts typically take the opposite approach during pandemics, when the world faces a shutdown or slowdown in regular activity and individuals are encouraged to apply social distancing to decrease connections between people and, thus, the likelihood of new infections. Long hours in a dangerous environment while wearing bulky protective gear that can restrict movement and make it hard to breathe are just a few of the challenges that healthcare workers confront as the demand for their services continues to soar (Wilder-Smith & Freedman, 2020).

Furthermore, many professionals may feel unprepared to carry out the therapeutic intervention of patients afflicted with a new virus, about which little is known and for which there are no well-established clinical protocols or

treatments. Concern for one's immune system's health comes into play here, as does the potential for transmitting the illness to one's loved ones and coworkers (Kang et al., 2020; Xiang et al., 2020). Because of this, they may withdraw from their immediate and extended families, alter their daily habits, and find it necessary to spend more time alone (Huang et al., 2020). Stress, irritation, exhaustion, mental and physical drowsiness, and depression are only some negative emotional states that might result from these external influences. Professionals in the health care industry are particularly at risk for experiencing mental anguish and developing psychiatric disorders due to their high work demands and stress-related symptoms (Lee et al., 2018). Therefore, it is vital to provide psychological support, improve mental health support services, and boost mental healthcare globally by having a deeper awareness of the emotional burden among various groups of healthcare workers, notably nurses, during this time (Zhang et al., 2020).

COVID-19 causes stress and time management problems because of the simultaneous exposure to news of many deaths, long work shifts with a wide variety of unknowns, and the stress of meeting various demanding objectives. At the same time, nurses are essential to the global response to the epidemic but are among the most at risk of contracting the disease. There have been many cases of infection and quarantine among frontline nurses during the COVID-19 pandemic (Sanderson et al., 2020). Since nurses have traditionally played a crucial role in epidemic prevention and control, prioritizing their health is of the utmost importance in managing infectious diseases (Mo et al., 2020).

Time management can be defined in various ways but generally involves assessing how one spends one's time and setting priorities to get the most out of one's day. Another way of looking at it is as a form of self-management, or more specifically, as an active method of self-regulation. Another writer Bley, (2015) describes it as "behaviors that aim at achieving effective use of time while executing particular goal-directed activities". The term "time management" refers to making the most of one's time using various components, such as planning, goal setting, goal-and-activity prioritization, communication, and delegating. A nurse's ability to manage their time effectively is crucial since any time away from a patient reduces the standard of care they can provide. The introduction of COVID-19 causes shifts in hospital care, affecting time allocations (Molaei et al., 2021).

Nurses must work more rigorously and strategically due to the peculiar circumstances brought on by the COVID-19 virus's short-term existence (Karakose, 2015). Nurses who fail to develop practical time management skills during their academic careers risk failing to graduate with the credentials needed to practice in a clinical setting and provide adequate patient care. Time management abilities are linked to compassion fatigue and the psychological toll of pandemics (Ghiasvand et al., 2017). When nurses learn to manage their time better, they feel refreshed and energized. So, nurses may focus on the current patient without worrying about the next one. As well as physical health, a disease-free life requires mental tranquility (Wolverhampton, 2018).

Nursing workloads and time spent on patient care have improved as a result of reform measures in hospitals. It implies that nurses need to be more disciplined and strategic in their approach to daily work in order to get more done in the same amount of time. A nurse's ability to effectively manage their time and study during their academic years is

crucial to their success in the nursing profession. Successful time management is linked to reduced compassion fatigue and lessened effects of emotional pandemics (Ghiasvand et al., 2017).

According to Sainz et al., (2019), nurses can benefit from a wide range of abilities that contribute to effective time management. When it comes to managing time, the following are some of the most crucial skills: **Organization**, Nurses who take the time to stay organized are better able to see the big picture of what has to be done and when (Hamzehkola & Naderi, 2018). **Prioritization**, a vital part of managing one's time effectively, determines the importance of one's many duties. The nurse could start with the shorter, more manageable tasks and work up to the more time-consuming ones. Alternately, the nurse might arrange the list from most urgent to least. (Watanabe et al., 2020). **Goal-setting** is the first step in learning to manage one's time effectively. The nurse visualizes the result and chooses what steps should be taken first. Career success can be achieved by setting immediate and distant objectives (Van der Hoek et al., 2018). Strong communication skills can help nurses communicate with lone patients about their aims and objectives. Nurses can assign responsibilities to other staff members, freeing time to concentrate on what matters most in achieving the organization's mission and objectives (Cameron et al., 2018). **Planning** plays a crucial role; nurses who take the time to meticulously organize their days' events, meetings, and care delivery are more likely to keep to their schedules (Botha et al., 2018). **Delegation** is a skill that could be useful in many settings, but especially those requiring isolation, such as hospitals and those where the future is uncertain (Jiang et al., 2018). So, Lack of time is a significant problem in modern healthcare. Emergencies in isolation hospitals must be managed with a focus on the quality of treatment, safety, standardization, and efficiency, all within the constraints of a predetermined timetable (Goldsby et al., 2020).

Time management is the art of making the most of one's available time in order to complete tasks and accomplish objectives. Furthermore, time management effectively utilizes time for a healthy life. Competence in time management can alleviate a lot of the emotional toll of pandemics and prevent burnout from helping others (Marquis & Huston, 2012).

Significance of the study:

Nurses were on the front lines during the COVID-19 pandemic, as nurses regularly reported experiencing anxiety and sadness due to their exposure to infected patients. Patient dissatisfaction can trickle down to the staff, leading to a vicious cycle of low morale, absenteeism, apathy, and stressful work (An et al., 2020). Although estimates of the pandemic's emotional toll on healthcare professionals across departments are high, health authorities can still develop prevention strategies, and efficient treatment plans to minimize the pandemic's negative effects on healthcare professionals. According to research, health professionals may encounter various psychological issues when working in high-stress and high-risk situations, such as during crisis and pandemic situations (Arafa et al., 2021).

Time is the most precious resource, and its presence and availability are prerequisites for the growth of any other resources. Successful people focus on time management because it's the key to achieving their goals. In the nursing profession, time squandered by nurses is time not spent with the patient, which has a detrimental impact on the quality of

care provided to the patient. Enhanced emotional regulation, originality, efficiency, and job fulfillment among nurses (Ghiasvand et al., 2017).

When caring for COVID-19 patients, nurses should find a balance between emotional impact and time management. The study found that most nurses were unable to face problems, irritated, anxious, emotionally concerned, and did not arrange the work during the COVID-19 pandemic. So, the researchers are introducing this study to investigate the relationship between compassion fatigue, pandemic emotional impact, and time management among nurses at isolation hospitals during COVID-19.

Aim of the study:

The current study aims to investigate the relationship between compassion fatigue, pandemic emotional impact, and time management among nurses at isolation hospitals during COVID-19.

Research questions:

1. What are the levels of compassion fatigue, pandemic emotional impact, and time management among nurses at isolation hospitals during COVID-19?
2. Is there a relationship between compassion fatigue, pandemic emotional impact, and time management among nurses at isolation hospitals during COVID-19?

Subjects and Method:

Research design:

The present study employed a descriptive correlational research design.

Setting:

This study was conducted at Minia isolation hospitals, including the Minia fever isolation hospital and the Minia chest isolation hospital; each hospital consists of inpatient departments, an intensive care unit, and an emergency unit. Minia fever hospital consists of three buildings; each building has three floors, and a capacity is 143 beds, while Minia chest hospital has one building with three floors and 110 beds.

Sample:

A convenience sample of 200 nurses from the previously mentioned settings was recruited. All age ranges were represented, both sexes were included, nurses with direct patient care were prioritized, and volunteers had to be healthy and willing to participate in the study.

Tools of data collection:

Four tools were used in the present study, based on related literature, to collect the necessary data for this study, which is divided into the followings:

1-Personal interview sheet:

The researchers developed this tool after reviewing relevant literature and encompassing items such as age, gender, marital status, educational qualification, functional class, and years of experience, hospital name, department, and residence.

2-Professional Quality of Life Scale version 5 (ProQual-5).

The ProQual-5 was originally developed by Figley (1995), and the last version was developed by Stamm (2009). It is a 30-item scale known as compassion fatigue and satisfaction and is designed to evaluate both the positive and negative outcomes of interacting with individuals who have endured stressful events. The ProQOL-5 is a 30-item scale. The researchers used the compassion fatigue scale in this study, which consists of 20 items; divided into two subscales (burnout and secondary traumatic stress), and did not take the 10 items of satisfaction. The compassion fatigue subscale consists of 20 items, divided into two subscales, the first is burnout, which includes 10 items numbers (1- 10), and the second is secondary traumatic stress, which includes 10 items (11- 20). Rated on 3-point scale; as 1 (rarely), 2 (sometimes), 3 (always). The score was reversed for questions (11, 12, 15, 16, and 20).

The studied sample total scores were divided into the following base:

1- Burnout

- 10 or less: Low risk for burnout
- 11 - 20: Moderate risk for burnout
- 20 or more: High risk for burnout

2- (Secondary traumatic stress)

- 10 or less: Low risk for secondary traumatic stress
- 11 - 20: Moderate risk for secondary traumatic stress
- 20 or more: High risk for secondary traumatic stress

TOTAL COMPASSION FATIGUE :

- 22 or less: Low risk for Compassion Fatigue (Low level)
- 23 - 41: Moderate risk for Compassion Fatigue (Moderate level)
- 42 or more: High risk for Compassion Fatigue (High level)

1- Pandemic Emotional Impact Scale (PEIS):

The Pandemic Emotional Impact Scale (PEIS) was designed by Ballou et al., (2020) to evaluate the emotional impact of a worldwide pandemic and to illuminate the long-term effects of this and future epidemics on people's mental health and includes 16 items. Respondents are asked to rate how each emotional domain had changed in the previous 4 weeks compared to before the pandemic began on a scale from 0 to 3-point scale, as 1 (rarely), 2 (sometimes), and 3 (always). The overall score is a sum of these items, ranging from 1 to 48, and divided into three levels: low pandemic emotional impact from 1 to 16, moderate pandemic emotional impact from 17 to 32, and high pandemic emotional impact from 34 to 48.

2- Time management questionnaire:

This questionnaire was developed by Gazawy, (2012) to assess the time management among nurses working at isolation hospitals during COVID-19. The questionnaire included 53 items in total and was divided into 8 dimensions as follows: fulfillment of obligations (7 items), district control (6 items), time planning (9 items), setting of priorities (7 items), discipline in the use of time (6 items), uses of resources (8 items), negotiation requirement (4 items), and balance lifestyle (6 items).

Scoring system:

Each item has a set of at least three possible answer choices ranging from (agree = 3, neutral = 2, disagree =1). The scoring system ranged from 53 to 159 and was divided into three levels: low time management from 53 to 88, moderate time management from 89 to 124, and high time management from 125 to 159.

The three scales were translated into Arabic language by an accredited professional translator and back-translated by an independent bilingual professional from the population group.

Validity and reliability of tools:

A panel of five professionals in nursing administration and psychiatric mental health nursing from the faculty of nursing determined the face validity of the current study tools. Each expert panel judged the tools' content, phrasing, length, coverage clarity, format, and overall appearance. All jury members agreed that the current study techniques were legitimate and appropriate to the study's goal based on their recommendation, hence no change. Hence made by the Jury panel. The reliability test was calculated using Cronbach's Alpha Coefficient for the analysis equipment. Cronbach's Alpha Coefficient was employed to assess the study scales' internal correctness. The tools' reliability was calculated statistically at 0.83, 0.89, and 0.888, respectively.

Pilot Study:

A pilot study was conducted at the beginning of the research. It includes (10%) of the total sample representing 20 nurses; a pilot study was conducted to test clarity, feasibility, completeness, objectivity, adequacy of the study tools, applicability, determine possible problems in the methodological approach or tool, and determine the time needed to complete the tools. No changes have done to the assessment sheet, so the sample selected for the pilot study was included in the primary study sample.

Procedure:

Review the current and past related literature on the various aspects of the study using recent books and available journals to be acquainted with the research problem, give a clear picture of the subject, and select the appropriate tools for measuring the study variables. In addition, the study tools were translated into Arabic by the researchers. They were reviewed and validated by the jury committee composed of

five experts in (psychiatric mental health nursing and nursing administration) to test the tools' validity.

Formal permission was granted from the manager and head nurses of Minia fever hospital and Minia chest hospital in Minia governorate after the explanation of the purpose and nature of the current study. The researchers interviewed each study subject to collect the necessary data using all the study tools by self-administrative techniques. The interview began with the researchers introducing themselves to the participants and providing a brief overview of the study's purpose. The study tools were distributed to nurses individually in the workplace at isolation hospitals. The data was collected between the periods of November 2021 to the end of February 2022, and it was done during the morning and afternoon shifts according to the nurses' and researchers' time. The time spent filling the study tools ranged from 20 to 25 minutes according to the needed explanation with each nurse.

Ethical considerations:

An official letter was granted from the Faculty of Nursing, Minia University research ethics committee, before the pilot study's conduction and the actual research; oral consent was obtained from nurses participating in the study after explaining the nature and purpose of the study. The study subject has the right to refuse to participate or withdraw from the study without any rationale at any time. Study subject privacy was considered during the collection of data. Participants were assured that all their data were highly confidential; anonymity was also confirmed by assigning a number for each nurse instead of names to protect their privacy. Plagiarism was avoided, and intellectual property rights were maintained.

Statistical Analysis:

Statistical analysis of data implemented by an excel program and using SPSS (IBM 26). The content of each tool was analyzed, categorized, and then coded. The reliability analysis was used to determine the reliability of the tools for the present sample. Qualitative data was used to describe the frequency distribution of the study sample. Quantitative data presented as mean & SD. Chi-square and Spearman correlation tests were used to identify differences in the prevalence of compassion fatigue, pandemic emotional impact, and time management among the studied sample. Statistical significance was used at P. value <0.05 at a confidence interval 95%.

Results:

Table (1): Frequency distribution of the personal characteristics among the studied sample (n = 200)

Personal Characteristics	Total	
	No.	%
Age/ years		
19 - <29	96	48.0
29 - < 39	64	32.0
39 - < 49	18	9.0
49 - < 59	22	11.0
Mean ± SD	32.3 ± 9.7	
Gender		
Male	34	17.0
Female	166	83.0
Marital status		
Single	58	29.0
Married	129	64.5
Widow	13	6.5
Years of experience		
1-5	49	24.5
6- 10	90	45.5

Personal Characteristics	Total	
	No.	%
11 – 15	61	30.5
Mean ± SD	6.9 ± 3.3	
Nurses' qualifications		
Diploma	56	28.0
Technical Institute of Nursing	65	32.5
Bachelor's degree of Nursing Science	79	39.2
Job position		
Head nurse	50	25.0
Staff Nurse	150	75.0
Hospital name		
Chest hospital	90	45.0
Fever hospital	110	55.0
Department		
ICU	60	30.0
Emergency unit	57	28.5
General department	48	24.0
*Other departments	35	17.5
Residence		
Rural	119	59.5
Urban	81	40.5

Table (1) shows that less than half of the studied sample (48.0%) is in the age group between 19 - < 29 years old, with mean age (32.3 ± 9.7). Females are more prevalent than males in the studied participants (83.0%), while nearly two third (64.5%) are married. Regarding years of experience, less than half of the studied sample had 6-10 years of experience, with a mean (6.9 ± 3.3). Moreover, more than one-third (39.2%) of them are bachelor's degrees, and three-quarters (75%) are staff nurses. On the other hand, more than half of them worked in fever hospitals, and less than two-thirds (59.5%) are from rural areas.

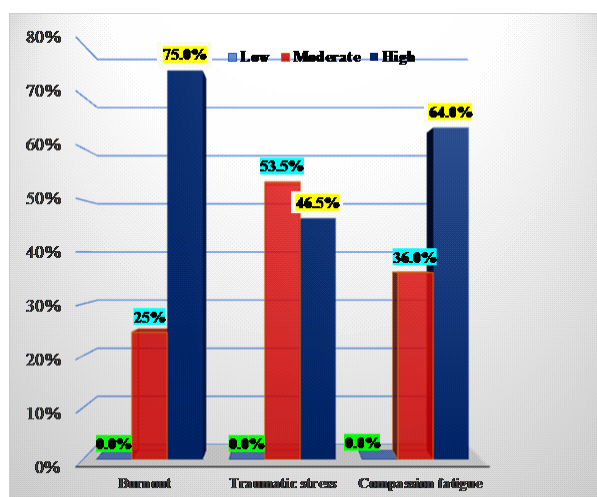


Figure (1): Frequency distribution of compassion fatigue domains among the studied sample (n = 200).

Figure (1): depicts that, nearly two-thirds of the studied sample (64.0%) is a high level of total compassion fatigue, while more than one-third of them (36.0%) is a moderate level.

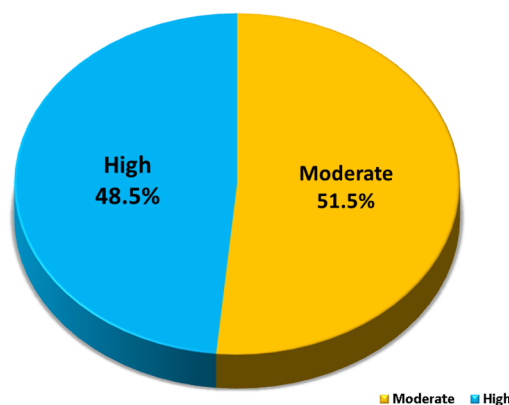


Figure (2): Frequency distribution of pandemic emotional impact among the studied sample (n = 200)

Figure (2): shows that more than half of the studied sample (51.5%) is a moderate level of pandemic emotional impact, while (48.5%) of them are a high level.

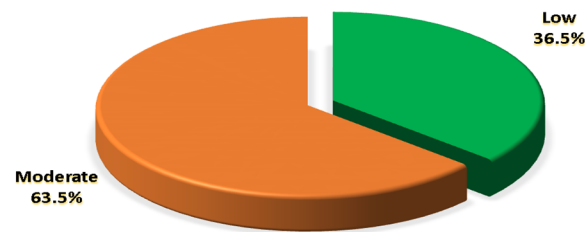


Figure (3): Frequency distribution of the total time management among the studied sample (n = 200)

Figure (3): presented that, less than two-thirds of the studied sample (63.5%) are at a moderate level of time management, while (36.5%) of them are at a low level.

Table (2): Mean score of compassion fatigue, pandemic emotional impact, and time management among the studied sample (n = 200).

Items	Mean ± SD
Compassion fatigue	42.9 ± 5.6
Burnout	22.6 ± 3.3
Secondary traumatic stress	20.3 ± 3.3
Pandemic emotional impact	32.7 ± 5.9
Time management	91.1 ± 9.4
Fulfillment of obligations	10.6 ± 2.5
District control	11.2 ± 2.3
Time planning	14.8 ± 3.2
Setting of priorities	12.1 ± 2.2
Discipline in the use of time	9.6 ± 1.7
Uses of resources	14.2 ± 2.9
Negotiation requirements	7.0 ± 1.4
Balance of life	11.7 ± 2.6

Table (2): Indicates that, the total mean scores of compassion fatigue among the studied sample are (42.9 ± 5.6). At the same time, mean scores of pandemic emotional impact are (32.7 ± 5.9). On the other hand, the total mean scores for time management are high among the studied sample (91.1 ± 9.4).

Table (3): Relation between compassion fatigue and personal characteristics of the studied sample (n = 200)

Personal Characteristics	Total	Compassion fatigue				Test of significance	
		Moderate (n = 72)		High (n = 128)		X ²	P value
		No.	%	No.	%		
Age/ years							
19 - <29	86	35	40.7	51	59.3	1.658	0.646
29 - < 39	74	23	31.1	51	68.9		
39 - < 49	18	6	33.3	12	66.7		
49 - < 59	22	8	36.4	14	63.6		
Gender						2.174	0.140
Male	34	16	47.1	18	52.9		
Female	166	56	33.7	110	66.3		
Marital status						8.023	0.018*
Single	58	16	27.6	42	72.4		
Married	129	47	36.4	82	63.6		
Widow	13	9	69.2	4	30.8		
Years of experience						3.834	0.147
1-5 years	49	15	30.6	34	69.4		
6- 10 years	90	39	43.3	51	56.7		
11 – 15 years	61	18	29.5	43	70.5		
Nurses' qualifications						5.532	0.063
Diploma	56	13	23.2	43	76.8		
Technical Institute of Nursing	65	27	41.5	38	58.5		
Bachelor's degree of Nursing Science	79	32	40.5	47	59.5		
Job position						0.116	0.734
Head nurse	50	17	34.0	33	66.0		
Staff Nurse	150	55	36.7	95	63.3		
Hospital name						5.065	0.024*
Chest hospital	90	40	44.4	50	55.6		
Fever hospital	110	32	29.1	78	70.9		
Department						4.671	0.198
ICU	60	27	45.0	33	55.0		
Emergency unit	57	20	35.1	37	64.9		
General department	48	12	25.0	36	75.0		
Other departments	35	13	37.1	22	62.9		
Residence						11.216	0.001**
Rural	119	54	45.4	65	54.6		
Urban	81	18	22.2	63	77.8		

Table (3): illustrates that there are no significant relations between compassion fatigue and personal characteristics of the study sample, except for marital status, hospital name, and residence at p-value = (0.018*, 0.024*, 0.001**, respectively).

Table (4): Relation between pandemic emotional impact and personal characteristics of the studied sample (n = 200).

Personal Characteristics	Total	Pandemic emotional impact				Test of significance	
		Moderate (n = 103)		High (n = 97)		X ²	P value
		No.	%	No.	%		
Age/ years							
19 - <29	86	44	51.2	42	48.8	19.025	0.0001**
29 - < 39	74	50	67.6	24	32.4		
39 - < 49	18	5	27.8	13	72.2		
49 - < 59	22	5	22.7	17	77.3		
Gender							
Male	34	16	47.1	18	52.9	0.363	0.547
Female	166	87	52.4	79	47.6		
Marital status							
Single	58	30	51.7	28	48.3	1.845	0.398
Married	129	64	49.6	65	50.4		
Widow	13	9	69.2	4	30.8		
Years of experience							
1-5	49	22	44.9	27	55.1	1.765	0.414
6- 10	90	50	55.6	40	44.4		
11 – 15	61	32	52.5	29	47.5		
Nurses' qualifications							
Diploma	56	24	42.9	32	57.1	5.723	0.057
Technical Institute of Nursing	65	30	46.2	35	53.8		
Bachelor's degree of Nursing Science	79	49	62.0	30	38.0		
Job position							
Head nurse	50	28	56	22	44	0.755	0.385
Staff Nurse	150	75	50.0	75	50.0		
Hospital name							
Chest hospital	90	44	48.9	46	51.1	0.765	0.382
Fever hospital	110	60	54.5	50	45.5		
Department							
ICU	60	29	48.3	31	51.7	4.864	0.182
Emergency unit	57	28	49.1	29	50.9		
General department	48	23	47.9	25	52.1		
* Other departments	35	24	68.6	11	31.4		
Residence							
Rural	119	67	56.3	52	43.7	2.927	0.087
Urban	81	36	44.4	45	55.6		

Table (4): illustrates that there is no significant relation between pandemic emotional impact and personal characteristics of the study sample, and on the contrary, there is a highly significant relation between pandemic emotional impact and age at P value= (0.0001**).

Table (5): Relation between time management and personal characteristics of the studied sample (n = 200).

Personal Characteristics	Total	Time management				Test of significance	
		Low (n = 73)		High (n = 127)		X ²	P value
		No.	%	No.	%		
Age/ years							
19 - <29	86	34	39.5	52	60.5	5.362	0.147
29 - < 39	74	25	33.8	49	66.2		
39 - < 49	18	3	16.7	15	83.3		
49 - < 59	22	11	50.0	11	50.0		
Gender							
Male	34	6	17.6	28	82.4	6.282	0.012*
Female	166	67	40.4	99	59.6		
Marital status							
Single	58	25	43.1	33	56.9	1.594	0.451
Married	129	44	34.1	85	65.9		
Widow	13	4	30.8	9	69.2		
Years of experience							
1-5	49	18	36.7	31	63.3	0.074	0.964
6- 10	90	32	35.6	58	64.4		
11 – 15	61	23	37.7	38	62.3		
Nurses' qualifications							
Diploma	56	16	28.6	40	71.4	10.386	0.006**
Technical Institute of Nursing	65	34	52.3	31	47.7		
Bachelor's degree of Nursing	79	23	29.1	56	70.9		

Personal Characteristics	Total	Time management				Test of significance	
		Low (n = 73)		High (n = 127)		X ²	P value
		No.	%	No.	%		
Science							
Job position							
Head nurse	50	24	48.0	26	52.0	3.804	0.05*
Staff Nurse	150	49	32.7	101	67.3		
Hospital name							
Chest hospital	90	33	36.7	57	63.3	0.002	0.965
Fever hospital	110	40	36.4	70	63.6		
Department							
ICU	60	24	40.0	36	60.0	8.798	0.032
Emergency unit	57	18	31.6	39	68.4		
General department	48	24	50.0	24	50.0		
*Other departments	35	7	20.0	28	80.0		
Residence							
Rural	119	50	42.0	69	58.0	3.858	0.049*
Urban	81	23	28.4	58	71.6		

Table (5): illustrates that; there is significant relation between time management with gender, nurses' qualifications, job position and residence at p value= (0.012*, 0.006**, 0.05*, 0.049 *respectively). On the other hand, there is no significant relation between time management with age, marital status, hospital name, and department

Table (6): Correlation matrix between compassion fatigue domains, pandemic emotional impact, and time management domains of the studied sample (n = 200).

		Compassio n fatigue (Burnout)	Compassio n fatigue (Secondary Traumatic stress)	Pandemic emotional impact	Fulfillment obligation	District control	Time planning	Setting priorities	Discipline time	Users courses	Negotiation requiremen t	Balance lifestyle
Compassion fatigue (Burnout)	r	1										
	P											
Compassion fatigue (Secondary Traumatic stress)	r	.384	1									
	P	.0001* *										
Pandemic emotional impact	r	.257	.124	1								
	P	.0001* *	.081									
Fulfillment obligation	r	.137	.046	-.041-	1							
	P	.053	.520	.564								
District control	r	-.052-	-.037-	.132	.036	1						
	P	.462	.605	.063	.608							
Time planning	r	.112	-.211	.070	.469	.057	1					
	P	.115	.003**	.322	.0001* *	.419						
Setting priorities	r	-.047-	.061	-.061-	.205	.024	.376	1				
	P	.508	.394	.387	.004**	.735	.0001* *					
Discipline time	r	-.010-	-.014-	.178	.098	.116	.325	.458	1			
	P	.893	.846	.012*	.165	.103	.0001* *	.0001* *				
USE resources	r	-.113-	.081	-.102-	.220	.053	.120	.115	.095	1		
	P	.111	.253	.152	.002**	.455	.091	.106	.180			
Negotiation requirement	r	-.130-	.002	-.120-	.076	.101	.204	.169	.128	.462	1	
	P	.066	.983	.089	.283	.157	.004**	.017*	.070	.0001* *		
Balance Lifestyle	r	-.134-	.025	-.057-	-.218	.138	-.177	-.128-	-.043-	.239	.219	1
	P	.059	.728	.421	.002**	.051	.012*	.071	.550	.001**	.002**	
Time management	r	-.042-	.120	-.003-	.520	.369	.648	.533	.488	.598	.532	.261
	P	.555	.092	.966	.0001* *	.0001* *	.0001* *	.0001* *	.0001* *	.0001* *	.0001* *	.0001* *

Table (8): summarizes that a statistically significant positive correlation between subdomains of compassion fatigue (secondary traumatic stress and burnout) at r= (.384) P-value= (.0001**). Moreover, there is a statistically significant positive correlation between pandemic emotional impact and burnout subdomain of compassion fatigue at r= (.257) P- value = (.0001**). In addition, there is a statistically significant positive correlation between pandemic emotional impact with discipline time subdomains of time management at r= (.178) P- value = (.012*). On the other hand, there is a statistically significant negative correlation between time planning with compassion fatigue (secondary traumatic stress) at r= (-.211) P- value = (.003**).

Discussion:

Work stress can be exacerbated by providing healthcare support to persons suffering from complicated, debilitating biological and mental problems. Healthcare costs are expected to grow in times of significant health alarm, such as the current COVID-19 epidemic. The COVID-19 epidemic negatively impacted every person's physical, social, and mental health, but frontline teams, such as nurses, had the most significant impact (Zhao et al., 2020). A nurse's ability to manage their time effectively is essential to their survival during hectic shifts, and nurses should take the time to learn how to do so (Nayak, 2018). So, the present study investigated the relationship between compassion fatigue, pandemic emotional impact, and time management among nurses at isolation hospitals during COVID-19.

Concerning the personal characteristics of the studied sample, the results of the current study revealed that the mean age of the studied sample is (32.3 ± 9.7) years old. This finding is consistent with Hakime et al. (2021), who reported that the average age of nurses participating in the study was 33.6 ± 6.7 years. Regarding gender, the present study's results showed that the majority of the study participants were females. This result may be due to the fact that most of the nurse staff recruited in isolation hospitals during the COVID-19 pandemic were females. In addition, a nursing career in Egypt includes more females than males in recent years.

This result is consistent with Francesco Franza et al. (2020), who mentioned that the majority of the participants were female (52 vs. 48; 52.94% vs. 47.06%, respectively). Similarly, Hakime et al. (2021) stated that 81.5% of the studied sample were female. Moreover, About half of the people studied by Dagget et al. (2016), who looked at job-related stress and its predictors among nurses in Jimma Zone public hospitals, were female. Concerning the marital status of the studied sample, the present study demonstrates that nearly two-thirds of them were married. This finding is supported by Chen (2016), who analyzed the impact of personal characteristics and professional values on nurses' decisions to remain in their current hospitals; roughly half of the study's participants were married. In the same line, Khanmohammadi et al. (2020) mentioned that (53.8%) of participants were married. On the other hand, this study was contradicted by a study done by Janita et al. (2021), who found that more than half of the studied sample was single.

Concerning years of experience, the results of the present study showed that nearly half of the study sample had 6-10 years of experience with a mean score of 6.9 ± 3.3 . The fact that the nursing profession in Egypt is one of few that offers graduates the chance to work after completing their studies may help explain this result, as it gives them years of experience distinct from those of graduates in other professions. This finding matched the study by Shahrour & Dardas (2020), who found that the majority of the participant had 10 years of work experience as a nurse. Besides that Hakime et al. (2021) reported that the average duration of nurse work in the profession was 6.7 ± 3.4 years. This result is not consistent with Mohammad et al. (2022), who found that more than half of the participants with more than ten years of clinical experience, while the majority of them with more than one year of experience in the current clinical setting.

Regarding nurses' qualifications, the result of the present study shows that; more than one-third of the studied sample had a bachelor's degree. This finding may be due to the differences in economic and educational levels between

the nurses. In the same line, Hegney et al. (2014) reported that 72.9% of the study sample had bachelor's degrees. This finding is inconsistent with Manwatkar & Mathew (2016), who found that most study participants were diploma holders. Moreover, the study result was not supported by El-Etreby et al. (2021), who reported that, regarding the educational level, slightly more than two-thirds (67.3%) of the participants had a diploma degree.

Besides job positions, the results of this study mentioned that; the majority of the study sample was staff nurses. This finding may be due to the fact that; the number of staff nurses is higher than the number of head nurses; also, the staff nurses are the primary healthcare practitioners who interact directly and indirectly with patients. These findings were consistent with the study by Wang et al. (2020), who assessed the prevalence of compassion fatigue among Chinese nurses and explored the factors associated with compassion satisfaction, burnout, and secondary traumatic stress, which found that the majority of the study participants were general nurses (93.9%).

On the other hand, the present study reveals that nearly two-thirds of the studied sample had a high level of compassion fatigue. This result may be related to the fact that; the current health emergency due to the coronavirus pandemic can aggravate and increase the exposure of health workers to stressful workloads, increased anxiety, increased responses to stress, and compassion fatigue. This result is consistent with a study conducted by Francesco Franza et al. (2020), who mentioned an increase in overall compassion fatigue scores in all workers; however, there was more CF in psychiatric health workers. Nursing Solutions Inc (2021) also showed that the COVID-19 effect on healthcare professionals and increased compassion fatigue is 52%, and emotional exhaustion is 82%. On the other hand, this result contradicts those of Arkan et al. (2020), who showed that the nurses had moderate levels of compassion fatigue. Besides, El-Etreby et al. (2021) found that nearly two-thirds (64.3%) of the study sample had a low trauma/compassion fatigue level.

In relation to the percentage distribution of pandemic emotional impact, the study result found that more than half of the studied sample had a moderate level of pandemic emotional impact. This finding may be related to; the emotional and behavioral consequences of the pandemic on the nursing personnel who interact with suspected or confirmed COVID-19 patients. Moreover, providing care and any associated changes in procedure can be very stressful for the nursing staff. The volume and complexity of nurses' work are growing, and they must also adjust to new standards of care for their patients.

This finding is in agreement with Nashwan et al. (2021), who stated that the nurses working in COVID-19 facilities had increased odds of having higher pandemic emotional impact categories by 2.62 times than nurses working in non-COVID-19 facilities. Consistent with the findings of El-Hage et al. (2019) and Qiu et al. (2020), healthcare personnel are at risk for developing anxiety, depression, stress, burnout, addiction, and post-traumatic stress disorder as a result of the global terrible health catastrophe sparked by the outbreak of COVID-19. According to the percentage distribution of time management, the current study results reported that less than two third of the studied sample had a moderate level of time management. In contrast, more than one-third of them had a low level. This finding may be related to the fact that; the study sample may have adequate

knowledge and skills about time management during the worldwide crisis of the COVID-19 pandemic. **Khalifa et al. (2021)**, who studied nurses' time management and emotional stability during same-day procedures at Samalot Hospital, came to similar conclusions. The same author reported that more than three-quarters of the sample (79.9%) have a moderate level of time management. Also, the study by **Maynard (2020)** examined knowledge and utilization of time management skills among nurses in a healthcare institution in South East Nigeria. It concluded that the majority of the nurses were knowledgeable about time management in healthcare, but only a few applied the necessary time management skills in patient care.

Regarding the relation between pandemic emotional impact and personal characteristics of the studied sample. The present study results showed that; there is no significant relation between pandemic emotional impact and personal characteristics of the study sample except for age. This result may be attributed to the influence of age on the nurse's capacity to manage a COVID-19 crisis emotionally and physically. Additionally, the age of the nurse has an impact on resilience, particularly in terms of problem-solving and emotional stability. The study result was consistent with the study by **Nashwan et al. (2021)**, who mentioned no statistically significant associations between nurses' characteristics (nursing experience) with pandemic emotional impact categories. Also, the study result was supported by **Mohammad et al. (2022)**, who reported that age categories, profession, working area, and years of clinical experience were found to be significant relation to pandemic anxiety.

Besides the relationship between time management and personal characteristics of the studied sample, the study results demonstrated a statistically significant relationship between time management with gender, qualification, job position, and residence. This finding was consistent with those of **Tong (2018)**, who determined the relationship between meaningful work, job performance, and the impact of meaningful work on nursing care quality, which found a statistically significant difference between nurses' educational qualifications and time management. On the other hand, this finding contradicted **Qteat & Sayej (2014)**, who investigated the factors affecting time management and nurses' performance in Hebron hospitals in the West Bank. The author mentioned no significant correlation between gender, the academic degree of the participants, and time management.

Moreover, the current study revealed that; there is a statistically significant negative correlation between time planning with compassion fatigue (secondary traumatic stress). At the same time, there is a highly significant and positive correlation between all subdomains of time management with total scale. This result supported the notion that good time management is crucial for managers and head nurses to achieve organizational objectives and boost productivity and performance. This result was in line with **Gaber et al. (2021)**, who reinforced a high statistical significance in total and all time management items; additionally, time management impacts nurses' stress levels.

Concerning the correlation between pandemic emotional impact, and time management, the current study reported that; there is a statistically significant positive correlation between pandemic emotional impact with discipline time subdomains of time management. This result could be explained by the possibility that; increased anxiety

and stress during the COVID-19 pandemic significantly impacted nurses' perspectives on what life is all about and their ability to manage their times during this pandemic. In other words, when time management skills are lacking, the emotional impact on nurses as a whole increases.

This finding is consistent with **Hendy et al. (2021)**, who found that the nurses were highly flexible in prioritizing, accessing, and modifying the usage of constantly changing nursing care protocols tailored to COVID-19; they also could manage their time. Additionally, they were sensitive to and aware of the particular requirements of COVID-19 patients. Those are exceptionally skilled at providing comfort, promoting psychological well-being, and reducing the burden of mental illness that is so common in this population. However, **Van Mol et al. (2018)** investigated the complex relationship between work engagement, workplace demands, and beneficial personal resources. The author claimed that there was no significant correlation between emotional stability, work engagement, and demand fulfillment.

Conclusions:

Based on the findings of this study, it can be concluded that nearly two-thirds of the studied sample had a high level of total compassion fatigue. At the same time, more than half of them had a moderate level of pandemic emotional impact, and time management. In addition, there is a statistically significant positive correlation between subdomains of compassion fatigue (secondary traumatic stress and burnout). Moreover, there is a statistically significant positive correlation between pandemic emotional impact and the burnout subdomain of compassion fatigue. On the other hand, there is a statistically significant negative correlation between time planning with compassion fatigue (secondary traumatic stress)

Recommendation:

- Educational workshops and periodical training programs should be implemented to reduce nurses' compassion fatigue and pandemic emotional impact and inspire nurses to work with effective time management techniques.
- Nurses need adequate resources to control the COVID-19 epidemic and find effective treatments as soon as possible.
- During this time of job overload peer support is crucial, encouragement of communication and support of each other can enhance the staff's health.
- Organizational strategies should be set up to make nurses feel safe and at ease in their work environment.

Recommendations for further studies:

- Guideline and policy recommendations from the Ministry of Health and international health bodies should be used to implement systematic, evidence-based interventions targeting psychosocial hazards.

Study Limitations:

- The sample is not enough to generalize the results of the current study to the whole hospitals.
- Workload limitations on nurses at isolation hospitals lead to a low participation rate in the study.

Conflicts of interest:

There are no conflicts of interest.

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References:

1. Alharbi, J., Jackson, D., & Usher, K. (2020). The potential for COVID-19 to contribute to compassion fatigue in critical care nurses. *Journal of Clinical Nursing*.
2. An, Y., Yang, Y., Wang, A., Li, Y., Zhang, Q., Cheung, T., Ungvari, G., Qin, M., An, F., & Xiang, Y. (2020). Prevalence of depression and its impact on quality of life among frontline nurses in emergency departments during the COVID-19 outbreak. *J Affect Disord.* 1; 276: 312–315.
3. Arafa, A., Mohammed, Z., Mahmoud, O., Elshazley, M., & Ewis, A. (2021); Depressed, anxious, and stressed: What have healthcare workers on the frontlines in Egypt and Saudi Arabia experienced during the COVID-19 pandemic? *Journal of affective disorders*, 278, 365-371.
4. Arkan, B., Yılmaz, D., & Düzgün, F. (2020). Determination of Compassion Levels of Nurses Working at a University Hospital. *Journal of Religion and Health*, 59, 29–39.
5. Ballou S, Gray S, Palsson OS. (2020). Validation of the Pandemic Emotional Impact Scale. *Brain, Behavior, & Immunity - Health* 9 (2020) 100161.
6. Bley, S. (2015). An examination of the time management behaviors and work-life balance of k-12 music educators (Doctoral dissertation, Bowling Green State University).
7. Botha, M., Du Preez, L., Geach, W. D., & Rabenowitz, P. (2018). Fundamentals of financial planning 2018. Cape Town: LexisNexis.
8. Cameron, R. J., Kudsia, C. M., & Mansour, R. R. (2018). Microwave filters for communication systems: fundamentals, design, and applications. John Wiley & Sons.
9. Catton H. (2020). Global challenges in health and health care for nurses and midwives everywhere. *Int Nurs Rev.*;67:4–6.
10. Chen, L. C., Perng, S. J., Chang, F. M., & Lai, H. L. (2016). Influence of work values and personality traits on intent to stay among nurses at various types of hospitals in Taiwan. *Journal of Nursing Management*, 24(1), 30-38
11. Dagget, T., Molla, A., & Belachew, T. (2016). Job-related stress among nurses working in Jimma Zone public hospitals, South West Ethiopia: a cross-sectional study. *BMC nursing*, 15(1), 1-10.
12. El-Etreby, R., Zanaty, M., Abdelraof, A (2021). Professional Quality of Life and Mental Health Outcomes of Emergency Nurses in Egypt During the COVID-19 Pandemic *Egyptian Journal of Health Care*. 12
13. El-Hage W, Hingray C, Lemogne C. (2020). [Health professionals facing the coronavirus disease 2019 (COVID-19) pandemic: What are the mental health risks?]. *Encephale* 2020; 46(3S): S73-80.
14. Figley, C.R. (1995). Compassion Fatigue. In B.H.Stamm, (Ed) Secondary traumatic stress: Self-care issues for clinicians, researchers, and educators. Lutherville, MD: Sidran Press.<http://www.sidran.org/digicart/products/stss.html>.
15. Francesco F, Roberto B, Ferdinando P, Barbara S & Vincenzo F (2020). the role of fatigue of compassion, burnout and hopelessness in healthcare: experience in the time of COVID-19 outbreak. *Psychiatria Danubina*, 32 (1): 10-14
16. Franza, F., Basta, R., Pellegrino, F., Solomita, B., & Fasano, V. (2020). The role of fatigue of compassion, burnout, and hopelessness in healthcare: Experience in the time of COVID19 outbreak. *Psychiatria Danubina*, 32(1), 10-14.
17. Gaber, M. A., Hassan, F., & Hassan, R. M. (2021). Time Management Program and Its Effect on Work Stress among Head Nurses. *Indian Journal of Forensic Medicine & Toxicology*, 15(3).
18. Gabutti, G., Anchera, E., Sandri, F., Savio, M., & Stefanati, A. (2020). Coronavirus: update related to the current outbreak of COVID-19. *Infectious diseases and therapy*, 9(2), 241-253
19. Gazaway, T.A . (2012). Time management and its impact on employees' performance at the civil status and passports department in the northern region in Jordan from employees perspective. *time management and its impact on employees' performance at the civil status and passports department in the northern region in Jordan from employees perspective*.
20. Ghiasvand, A. M., Naderi, M., Tafreshi, M. Z., Ahmadi, F., & Hosseini, M. (2017). Relationship between time management skills and anxiety and academic motivation of nursing students in Tehran. *Electronic physician*, 9(1), 3678.
21. Goldsby, E., Goldsby, M., Neck, C. B., & Neck, C. P. (2020). Under pressure: Time management, self-leadership, and the nurse manager. *Administrative Sciences*, 10(3), 38.
22. Hakime A · Behice E· Hatice P (2021): Relationship Between Compassion Fatigue in Nurses, and Work-Related Stress and the Meaning of Life. *Journal of Religion and Health*.
23. Hamzehkola, R. G., & Naderi, M. (2018). The effect of time management skills training on psychological empowerment of nurses. *Adv Nurs Midwifery*, 28(1), 9-14.
24. Hegney, D. G., Craigie, M., Hemsworth, D., et al. (2014). Compassion satisfaction, compassion fatigue, anxiety, depression, and stress in registered nurses in Australia: Study 1 results. *Journal of Nursing Management*, 22(4), 506–518.
25. Hedy, A., Abozeid, A., Sallam, G., Abdel Fattah, H., & Reshia, F. (2021). Predictive factors affecting stress among nurses providing care at COVID-19 isolation hospitals in Egypt. *Nursing Open*. 8:498–505.
26. Huang JZ, Han MF, Luo TD, Ren AK, Zhou XP. (2020). Mental health survey of 230 medical staff in a tertiary infectious disease hospital for COVID-19. *Zhonghua Lao Dong Wei Sheng Zhi Ye Bing Za Zhi*;38:E001.
27. International Council of Nurses. (2020). ICN confirms 1,500 nurses have died from COVID-19 in 44 countries and estimates that healthcare worker COVID-19 fatalities worldwide could be more than 20,000 [online],2020. Available: <https://www.icon.ch/news/inc-confirms-1500-nurses-have-died-covid-19-44-countries-and-estimates-healthcare-worker-covid> [Accessed 13 Nov 2020].
28. Janita P, Suzanne H, Ravneet S, Claudia H, Simon L, David R (2021): Nurses' experiences of caring for people with COVID-19 in Hong Kong: a qualitative inquiry. *BMJ Open*2021;11:e052683. doi:10.1136/bmjopen-2021-052683.
29. Jebiril, N. (2020). World Health Organization declared a pandemic public health menace: A systematic review of the coronavirus disease 2019 “COVID-19”, up to 26th March 2020. Available at SSRN 3566298.
30. Jiang, Y., Susilo, W., Mu, Y., & Guo, F. (2018). Ciphertext-policy attribute-based encryption against key-delegation abuse in fog computing. *Future Generation Computer Systems*, 78, 720-729.
31. Kang L, Ma S, Chen M, Yang J, Wang Y, Li R, et al. (2020). Impact on mental health and perceptions of psychological care among medical and nursing staff in Wuhan during the 2019 novel coronavirus disease outbreak: a cross-sectional study. *Brain Behav Immun* [Online]. 2020, ...(-)-2%22http://dx.doi.org/HYPERLINK%20%22http://dx.doi.org/10.1016/j.bbi.2020.03.028.S0889-1591(20)30348-bbi.2020.03.028.S0889-1591(20)30348-2%222
32. Karakose, T. (2015). The Relationship between medical students' time management skills and academic achievement. *Studies on Ethno Medicine*, 9(1), 19-24.
33. Khalifa, M. A. M., Abdelrahman, S. M., Fahmy, A. M., & Gabra, S. F. (2021). Relation between Emotional Stability and Time Management Levels among Nurses at one Day Surgeries Hospital. *Minia Scientific Nursing Journal*, 10(1), 19-26.
34. Khanmohammadi S, Hajibeglo A, Rashidan M, Bekmaz K.(2020). Relationship of resilience with occupational stress among nurses in coronavirus ward of Khatam Al-Anbia Hospital, Gonbad Kavous, Neuropsychiatry & Neuropsychology/Neuropsychiatric I *Neuropsychologia*. 2020; 15.
35. Lee SM, Kang WS, Cho AR, Kim T, Park JK. (2018). The psychological impact of the 2015 MERS outbreak on hospital workers and quarantined hemodialysis patients. *Compr Psychiatry*; 87:123-7.
36. Manwatkar, S., & Mathew, S. (2016). A study to assess the effectiveness of self-instructional modules among staff nurses regarding stress management in selected hospitals of the city. *IOSR Journal of Nursing and Health Science*, 5(4), 01-03.
37. Marquis, B. & Huston, C. (2012). Leadership roles and management function in nursing. 7 edition, *Time Management*, 9, by Wolters Kluwer Health China. Lippincott Williams & Wilkins, pp 182-201.
38. Maynard, A.E. (2020). Knowledge and Utilization of Time Management Skills among Nurses in a Healthcare Institution in South East Nigeria. *International Journal of Research In Medical Surgical Nursing*; 1(1)
39. Ministry of Health and Population Egypt —mohp || (2021). COVID- 19 in Egypt. Available at: <https://www.care.gov.eg/EgyptCare/index.asp>
40. Mo, Y., Deng, L., Zhang, L., Lang, Q., Liao, C., Wang, N., ... & Huang, H. (2020). Work stress among Chinese nurses to support Wuhan in fighting against COVID- 19 epidemic. *Journal of nursing management*, 28(5), 1002-1009.
41. Mohammad J, Ahmad M. , Mohammad H., Alqudah, O., Susanna E. Du Preez, Khalid S. (2022): Stress, Depression, Anxiety, and

- Burnout among Healthcare Workers during the COVID-19 Pandemic: A Cross-sectional Study in a Tertiary Centre. *The Open Nursing Journal*, 2022, Volume 16
44. Molaei, P., Javaherian, M., & Afzalipour, M. (2021). Principles of flexibility in the design process, with the approach to creativity in design. *AJ ZITU Mimarlık Fakültesi Dergisi*, 18(3), 625-635.
 45. Nashwan, A. J., Villar, R. C., Al-Qudimat, A. R., Kader, N., Alabdulla, M., Abujaber, A. A., ... & Singh, K. (2021). Quality of life, sleep quality, depression, anxiety, stress, eating habits, and social bounds in nurses during the coronavirus disease 2019 pandemic in Qatar (The PROTECTOR Study): a Cross-Sectional, Comparative Study. *Journal of Personalized Medicine*, 11(9), 918
 46. Nayak, S. G. (2018). Time management in nursing—an hour of need. *International journal of caring sciences*, 11(3), 1997-2000
 47. Nursing Solutions Inc (NSI), (2021). NSI national healthcare retention and RN staffing report. https://www.nsinursingsolutions.com/Documents/Library/NSI_National_Health_Care_Retention_Report.pdf.
 48. Qiu J-Y, Zhou D-S, Liu J, Yuan T-F. Mental wellness system for COVID-19. *Brain Behav Immun* 2020; 87: 51-2.[<http://dx.doi.org/10.1016/j.bbi.2020.04.032>] [PMID: 32298801]
 49. Qteat, M., & Sayej, S. (2014). Factors affecting time management and nurses' performance in Hebron hospitals. *Journal of education and practice*, 5(35), 41-58.
 50. Sainz, M. A., Ferrero, A. M., & Ugidos, A. (2019). Time management: skills to learn and put into practice. *Education+ Training*.
 51. Salmond, E., Salmond, S., Ames, M., Kamienski, M., & Holly, C. (2019). Experiences of compassion fatigue in direct care nurses: a qualitative systematic review. *JBIC Evidence Synthesis*, 17(5), 682-753.
 52. Sanderson, W., Arunagiri, V., Funk, A., Ginsburg, K., Krychiw, J., Limowski, A & Stout, Z. (2020); The nature and treatment of pandemic-related psychological distress. *Journal of contemporary psychotherapy*, 50(4), 251-263.
 53. Shahrour, G., & Dardas, L. A. (2020). Acute stress disorder, coping self-efficacy, and subsequent psychological distress among nurses amid COVID-19. *Journal of nursing management*, 28(7), 1686-1695
 54. Stamm, B. (2009). Professional Quality of Life: Compassion Satisfaction and Fatigue Version 5 (ProQOL5) Retrieved from www.isu.edu/~bhstamm or www.proqol.org.
 55. Steinheiser, M. (2018); Compassion fatigue among nurses in skilled nursing facilities: Discoveries and challenges of a conceptual model in research. *Applied Nursing Research*, 44, 97-99.
 56. Tong, L. (2018). Relationship between meaningful work and job performance in nurses. *International journal of nursing practice*, 24(2), e12620.
 57. Van der Hoek, M., Groeneveld, S., & Kuipers, B. (2018). Goal setting in teams: Goal clarity and team performance in the public sector. *Review of public personnel administration*, 38(4), 472-493.
 58. Van Mol, M. M., Nijkamp, M. D., Bakker, J., Schaufeli, W. B., & Kompanje, E. J. (2018). Counterbalancing work-related stress? Work engagement among intensive care professionals. *Australian Critical Care*, 31(4), 234-241.
 59. Wang, J., Okoli, C. T., He, H., Feng, F., Li, J., Zhuang, L., & Lin, M. (2020). Factors associated with compassion satisfaction, burnout, and secondary traumatic stress among Chinese nurses in tertiary hospitals: A cross-sectional study. *International Journal of Nursing Studies*, 102, 103472.
 60. Watanabe, H., Chen, L., Geng, X., Goda, Y., & Shimada, A. (2020). Design of the time management skills acquisition system using learning analytics. In *Proceedings of 17th International Conference Cognition and Exploratory Learning in Digital Age (CELDA 2020)* (pp. 67-73).
 61. Wilder-Smith A, Freedman DO. (2020). Isolation, quarantine, social distancing and community containment: a pivotal role for old-style public health measures in the novel coronavirus (2019-nCoV) outbreak. *J Travel Med* 2020; 27:taaa020.
 62. Wolverhampton. (2018). Skills for learning. Guide to time management [online]. The University of Wolver Hampton. [Accessed 1-9-2018]. Available at: <<http://www.wlv.ac.uk/skills>>.
 63. Xiang Y-T, Yang Y, Li W, Zhang L, Zhang Q, Cheung T, et al. (2020). Timely mental health care for the 2019 novel coronavirus outbreak is urgently needed. *Lancet Psychiatry* 2020; 7:228-9.
 64. Zhang W, Wang K, Yin L, Zhao W, Xue Q, Peng M, et al. (2020). Mental health and psychosocial problems of medical health workers during the COVID-19 epidemic in China. *Psychother Psychosom*;89:242---50.
 65. Zhao Y, Cui C, Zhang K, (2020). COVID19: A Systematic Approach to Early Identification and Healthcare Worker Protection. *Front Public Health* 2020; 8:205.