Relation between Cognitive Emotion Regulations, Spiritual Intelligence with Occupational Stress amongCritical Care Nurses Staff

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Abstract

Background: Nurses working in intensive care units (ICU) confront several problems resulting from the complexity of patient care, work overloads, time constraints, and administrative responsibilities, all of which have an impact on their psychological well-being. **Aim of the study:**Asses levels of cognitive emotional regulation, spiritual intelligence, and occupational stress among critical care nurses**,** andexplores the relation between cognitive emotion regulations, spiritual intelligence with occupational stress**.Subjects and Method:Study design:** A descriptive correlational design. **Setting and subjects:** The study was conducted in Intensive care units at Tanta Universal Teaching Hospital. **Subjects**: It involved all available of critical care nurses that are working in the previous settings, their number was 130 nurses. **Study tools:**It consisted of three tools, tool one was structure questionnaire, itinvolved two parts: socio-demographic data was developed by researchers, andCognitive EmotionRegulation Questionnaire,it was developed by ***Garnefski. N and Kraaij.V(2001)***. Tool two wasSpiritual Intelligence Self-report Inventory, it was developed by ***King. D, Decicco.T (2008)***.Tool three was Expanded Nursing Stress Scale, it was developed by ***French S et al (1999)***.**Results:**Nearly half of the participants (45.4%) perceived moderate level of occupational stress, and 39.2% have higher level, regarding to cognitive emotional regulation, 40,8 %of them have moderate level , and 44.6% have lower level. Moreover 46.9 % of the nurses have moderate level of spiritual intelligence and 30.8% have lower level. Thereare negative correlations between cognitive emotional regulations, spiritual intelligence with occupational stress.**Conclusion:**Increased cognitive emotional regulation and spiritual intelligence among critical care nurses lead to decrease their occupational stress. **Recommendation:** Establishing training program for critical care nursesto improve their cognitive emotional regulation, and their spiritual intelligence fordeceasing theiroccupational stress.

Key words: Critical care nurses, Occupational stress, Cognitive emotion regulation, Spiritual intelligence.

Introduction

Occupational stress is currently one of the main health problems and a discussed issue in the 21th Century[1] .Occupational stress occurs when demands of the working environment overpower the capacities of workers to cope with them, and employees observe that workplace's needs for commitment and adaptation are beyond their capacity and ability[1]. Excessive occupational stress has been associated with increased risk to physical and mental health, and decreased work ability and life quality of the employees [2].

Although occupational stress exists in all occupations, but this is more important in healthcare that is dealing with human health. In such a system, the nurses are at the forefront of providing services to patients and this was given the critical nature of their occupation, they are one of the groups constantly exposed to stress. Nursing stress is attributed to the physical efforts, suffering and demands of patients and families, work load,(including extra working time, multiple duties in a limited time and limited rest time),and other burdens related to nurses' work[3].

Regarding to nurses in Intensive Care Units (ICU) compared to other departments, it is extremely challenging [4].Critically ill patients have a higher acuity of illness than other patients in medical/surgical units.Such harsh working conditions are major sources of stress for critical care nurses.Stressful situations such as performing procedures that are painful for the patient and fear of making mistakes were also recurrent in critical care nurses [5].In ICU, patients' conditions are diverse, unpredictable, and rapidly changing and therefore, nurses need to manage patients and families' conditions, concerns, and problems as well as possible amount of time[6].Furthermore the corona virus has been spreading throughout the world for the past two years, and nurses have been on the front lines of dealing with this crisis, which has increased stress, fear of infection, during nursing care of patients with COVID-19[7].

Critical care nurses are working in highly stressful working conditions necessitates remarkable ability to cope with daily emotions[8]. Therefore success in nursing work depends not only on intellectual abilities and practical skills but also on competence in cognitive emotion regulation that help critical nurses to improve their resistance to extreme emotions and feelings.Nursing has been considered an emotional demanding job, nurses are required many emotional in their relationships with patients, relatives, and with colleagues[9].

Studies revealed that the regulation of emotions by cognitions was helping people to control over their emotions during or after experiences of stressful events[10]. Cognitive emotion regulation (CER) refers to the conscious, cognitive way of handling the intake of emotionally arousing information, and can be considered part of the broader concept of emotion regulation[11].

Emotional regulation (ER) defined as the ability to manage one's own emotions, when they are of the wrong type, come at the wrong time; occur at the wrong intensity level. The focus on the emotional regulation process has permitted to know what, when, and how to convey and control emotional status, rather than the expression, containment or concealment of some discrete emotional states[12].

One of the most effective emotion regulation strategies is cognitive strategies, which cognitive processes help individuals regulate their emotions and feelings and improve their resistance to extreme emotions and feelings[13]. These strategies are divided into adaptive and maladaptive. Adaptive strategies include positive reappraisal, positive refocusing, putting into perspective, acceptance and refocus on planning, while maladaptive strategies are self-blame, other-blame, rumination, and catastrophizing[14].

The studies show that health individuals, who use adequate ER strategies, have lower levels of perceived stress. Conversely, those individuals with greater difficulties in regulating their emotions havesymptoms associated with stress[15].On the other hand, emotion regulation training is reducing and controlling negative emotions and improvesways of using positive emotions[16]. In previous studies, emotion regulation training was effective in coping with occupational stress, and improving psychological well-being[17].

Spirituality has been considered as an important aspect of human being, which has a significant relationship with health improvement [18]. In the work environment, nurses are confront on a daily basis with multiple occupational stressors, which can jeopardize their physical and mental health, in such cases the innate source such as spiritualty, which might help them because it gives meaning and purpose to life [19].

Spiritual intelligence (SI) is the ability of individuals to hear the voice of the heart to be closer to Allah, and to give the best and benefit to themselves. Moreover, SI is very meaningful and it can help an individual to be self-sufficient [20].SI allows nurses to place their actions and lives in a much wider, richer and meaning-giving context;

the intelligence which allows nurses to evaluate why a life path is more significant than another[21].SI is a collection of individual capabilities in terms of spiritual resources that contain the effective kind of adaptation and problem solving behavior [22].The important characteristics of SIinclude personal confidence, effectivecommunication, interpersonal understanding, managing changes, and moving from difficult routes. SI is one of the multiple intelligences that can independently grow and develop[22].

Significant of the study

Occupational stress may significantly affect nurse's physical and psychological health. It increases the probability of anxiety, depression, cardiovascular, and locomotors diseases; these negatively affect nurses' quality of life. There is a general agreement that work-related stress decreases the quality of nursing care[23]. Previous research concluded that healthy people who employ ER techniques have lower levels of perceived stress and individuals who have a harder time for controlling their emotions, on the other hand, will exhibit more stress-related symptoms[24].SI allows nurses to find a meaning and purpose from all physical and mental experiences, including the ability to create and dominate individual life goals[25]. SI also includes the highest levels of growth in various cognitive, ethical, emotional, and interpersonal fields, and it helps people to coordinate with the phenomena around them and to achieve internal and external integrity [26].

Aim of the study

This study aimed to assessthelevels of cognitive emotional regulation, spiritual intelligence, and occupational stress among critical care nurses**,** andexplored the relation between cognitive emotion regulations, spiritual intelligence with occupational stress**.**

Research questions

1- What are the levels ofcognitive emotion regulation, spiritual intelligence and occupational stress among critical care nurses staff?
2- What are relations between cognitive emotion regulation, spiritual intelligence with occupational Stress among critical care nurses staff?

Subjects and Method

Research design

Descriptive correlational design was utilized in the present study.

Setting

The study was conducted in the Intensive Care Units (ICU) at Tanta Universal Teaching Hospital that affiliated to Tanta University. These units are Cardiology, Medical and Chest, Anesthesia, and Pediatric unit.

Subjects

The sample of this study was consisted of all available nurses that are working in the previous settings and give direct care and contact with the patient. Their number was 130 nurses after excluded nurses who involved in the pilot study. Distribution of nurses in previous setting was as a follow: Cardiology ICU (45nurses), Medical and Chest ICU (35 nurses), Anesthesia ICU (30 nurses), and Pediatric ICU (20 nurses).

Tools of the study

Three tools were used to collect the study data:

Tool one : StructureQuestionnaire was consisted of two parts:

Part(1): Socio demographic charact-eristicsquestionnaire

It was developed by the researchers after review of related literature and included the following items:gender, age, educational level, marital status,years of experience in nursing,andyears of experience in critical nursing care.

Part two: Cognitive Emotion Regulation Questionnaire (CERQ)

It was developed by ***Garnefski. N and Kraaij.V (2001)***[27].It used to measure cognitive emotion regulation strategies that used by individuals after experienced stressful life events. This tool was used in the present study to measure nurses' cognitive emotion regulation style in response to their occupational stress. This tool was a 36 items questionnaire consisting of a nine subscales. That involved adaptive and maladaptive strategies.

Subscales are explained as a following

- Adaptive strategies consisted of five subscales: acceptance, positive refocusing,refocus on planning, positive reappraisal, and putting into perspective.
- Maladaptive strategies consists of four subscales: self-blame, rumination, catastrophizing ,and blaming others .

CERQ items are rated on a 5-point Likert scale ranging from 1= almost never to 5=almost always. Each subscale scores is summed, and ranged from 4 to 20. Higher scores reflect greater use of the strategy in this subscale .Total score of all subscales was summed to determine the total of cognitive emotion regulation and ranged from 36 to 180. The maladaptive strategies subscales have reversed score.

The levels of CER andits subscales was determined according to the following scoring systems: less than 50 % from total score referred tolower level , 50-75%

indicated to moderate level,and more than 75 % meanshigher level.

Tool (2): The Spiritual Intelligence Self-Report Inventory (SISRI)

This tool was developed by ***King. D, Decicco.T (2008)*** [28].It was used to measure the spiritual intelligence that individuals may be having. It was consisted of 24 items divided into four subscales as follow:critical existential thinking, personal meaning production, transcendental awareness, and conscious state expansion.

The responses of studied nurses were rated on five point Likert scale from not all true for me = zero to completely true for me = 4. The total score ranged from zero to 96. The higher scoreof SISRIwere referred to the higher abilities of spiritual intelligence. The levelsSI and its subscales were determined according to the following scoring system: less than 50 % from total score meanslower level of spiritual intelligence, between 50 % to 75% was meansmoderate level of spiritual intelligence, and more than 75 % refer to higher level of spiritual intelligence.

Tool (3): Expanded Nursing stress Scale (ENSS)

This scale was developed **by *Gray-Toft P and Anderson J (1981)*** [29].It was expanded and updated revision by ***French S et al (1999)*** [30]. It was used to measure nurses job related stressors. It was consisted of 57 items divided into 9 subscales that expressed about types of nursing stressors. The nine subscales were explained as follows: death and dying, conflict with physicians, inadequate emotional preparation, problems relating to peers, problems relating to supervisors, workload, uncertainty concerning treatment, patients and their families, and discrimination. The items of ENSS scale were arranged in five point LikertScale from zero=doesn't apply to 4= extremely stressful.The total score was ranged from 0 to 228. A higher score indicated to a higher frequency of experienced work stress by nurses. The level of occupational nurse stressorsand its typewas determined according to the following scoring systems: less than 50 % from total score means low level of occupational stress. Between 50 to 75% was moderate, andmore than 75 % washigher level of occupational stress.

Method

The study was accomplished according to the following steps

An official letter was addressed from the dean of the Faculty of Nursing to the director of Tanta Universal Teaching Hospital to request their permission and cooperation for data collection.

Ethical considerations

- The approval was obtained from ethical committee in the Nursing Faculty for implementing this study.
- Informed consent was taken from the participants after explanation of the purpose of the study.
- The participants were reassured about the confidentiality and the privacyof their obtained information. A code of number was used instead of their nurses' name on questionnaire sheet.
- Respecting the right of the participants to withdrawal at any time during the period of data collection.
- The study didn't cause harmful for participants, the researcher applied all safety precaution to avoid transition coronavirus during data collection.

Development of study tools

The socio-demographic question-aire(part one of tool one) was developed by researcher.Part two of thetool I, tools II, and III were translated into Arabic language. The study tools were tested for content and face validity by five of academic professors of psychiatric mental health nursing, in Faculty of Nursing Tanta University. The modifications were done accordingly such as change few words for other more clarified.

The studied tools were test for reliability by using Cronbach'sAlpha Test. Cognitive emotion regulation questionnaire was 0.950, Spiritual intelligence scale was 0.952, and Critical care nurses stress scalewas0.965.which means a higher reliable.

A pilot study

It was carried out on 10% (13 nurses) of studied nurses, who were selected randomly. Pilot study was conducted to ensure the clarity and the applicability of the study tools, and to identify the obstacles that may be encountered during data collection. Thesesubjects were excluded from the actual study. The results of pilot study revealed that the nurses did not have any difficulties when responding to the study tools, and all tools were found to be applicable and clear.

The actual study

The researcher greeted studied nurses, explained goal of the study,and received consent. The participants were given study tools and the researcher asked them for to fill all sheets, this was done individual based and in the presence of the researcher to clarify anything in tools if needed.Each

interview lasted from 20-25 minutes according to nurses' concentration and understanding.The researcher visited studied setting 7day per week.The duration of data collectionwassix months, starting from June 2020 to end of December 2020.

Statistical analysis

The study data were computerize and verified using the SPSS (Statistical Package for Social Science) version 25 to perform tabulation and statistical analysis. Quantitative data were summarizing by the arithmetic mean and standard deviation. Frequency tables with percentages were used to illustrate the result of categorical data. Pearson correlation (r) was used to test nature and strength of correlation between studied variables. Significant correlation at P value=≤ 0.05, highly significant correlation at P value = ≤ 0.01 levels.

Results

Table (1)appears socio-demographic characteristics of critical care nurses. The majority of the studied nurses (62.3 %) were female. Mean score of nurses age was (25.65±3.61). Concerning on marital status, more than half of nurses (62.3%) were married and only 26.2% were single. Regarding to their level of educational, 47.7% of nurses had nursing technician education, 42.3% had bachelor's education and only 10% had diploma of nursing education. In addition to, mean score of years experiencing in nursing care was 4.53±3.605.and mean score of experiences in critical nursing care was 2.91 ± 1.58 years.

Figure (1)explores levels of cognitive emotion regulation, spiritual intelligence, and occupational stress that perceived by critical care nurses, it show that 44.6% of studied nurse have lower level of cognitive emotion regulation, and 40.8% had moderate level, while only 14.6% had higher level. Concerning on spiritual intelligence , the around half of the studied nurse (46.9%) have moderate level of spiritual intelligence, and 30.8% had low level, while only 22.3% had high level of spiritual intelligence. In addition to, occupational stress it appears that around half of the studied nurse (45.4%) have moderate level of occupational stress, and 39.2% had higher level, while only 15.4% had low level of occupational stress.

Table (2)presented cognitive emotion regulation strategies that used by critical care nurses. It noticed the maladaptive strategies have the high level of using such as :self-blame, blaming others, catastrophizing and focus on thought/rumination is 55.4% - (3.20 ± 1.00), 54.6% - (3.22 ± 0.829, 53) .8% -

(3.12 ± 0.945) & 51.5%,(3.22 ± 0.931) respectively).On the other hand, the adaptive strategies such as: positive reappraisal, positive refocusing, acceptance, refocus on planning, putting into perspective ha moderate level of using (48.5% - (3.20±561), 45.4% - (3.13 ± 0.734), 44.6% - (3.08 ± 0.511), 40.8% - (3.19 ± 0.693) & 40% - (3.10 ± 0.666) respectively.

Table (3)reveals ways of spiritual intelligence that used by critical care nurses. It is observed that the average differences in levels between subscales, the high level of discovery of personal meaning, the conscious development& existence of critical thinking is (28.5% (2.63 ± 0.725), 26.9% (2.56 ± 0.762) & 25.4% (2.73 ± 0.650) respectively).On the other hand, the moderate level of existence of critical thinking, spiritual awareness& discovery of personal meaning is (25.4% (2.73 ± 0.650), 46.9% (2.56 ± 0.728) & 28.5% (2.63 ± 0.725) respectively).

Table (4)explores type of occupational stress among critical care nurses. There are the higher level of death and dying, problems relating to supervisors, workload, patients and their families is (54.6% - (3.05 ± 0.595), 48.5% -(2.90± 0.683), 42.3% - (2.73 ± 0.733) , 42.3% - (2.82 ± 0.661) respectively).On the other hand, the moderate levelof stress related to uncertainty concerning treatment, patients and their families, death and dying, conflict with physicians is (46.9% - (2.80 ±0.697), 43.8% -(2.82 ± 0.661), 39.2% - (3.05 ± 0.595), 38.5% - (2.70 ± 0.789) respectively. In addition to the low level of stress related to discrimination, problems relating to peers, inadequate emotional preparation (45.4% -(2.23 ± 0.925), 40.0% - (2.43 ± 0.718), 35.4% - (2.59 ± 0.861) respectively.

Table (5)presents the correlation between cognitive emotion regulation subscales and occupational stress among critical care nurses, the table showed that a statistical significant negative correlation between acceptance, positive refocusing, refocus on planning, positive reappraisal, putting into perspective and occupational stress. (r = -.181-, p = 0.039)(r = -.380-, p = 0.000)(r = -.260-**, p = 0.003)(r = -.264-, p = 0.002)(r = -.345-, p = 0.000) respectively. While a statistical significant positive correlation between self-blame, focus on thought rumination, catastrophizing, blaming others and occupational stress (r = .401, p = 0.000) (r = .345, p = 0.000) (r = .412, p = 0.000) (r = .424, p = 0.000) respectively.

Table (6)show the correlation between ways of spiritual intelligence and occupational stress, the table showed that a statistical significant negative correlation

between all spiritual intelligence subscales and occupational stress.

Table (7)demonstrates the correlation between cognitive emotion regulation, spiritual intelligence, and level of occupational stress among critical care nurses, the table showed that a statistical significant negative correlation between cognitive emotion regulation, and occupational stress (r =-.429, p = 0.000). Regarding the correlation between spiritual intelligence and occupational stress, there was a statistical significant negative correlation (r=-.460-, p= 0.000).

Table (1): Distribution of the critical care nurses according their socio demographic data (n = 130).

Socio demographic data		Nurses in critical care unit (n=130)	
		No	%
Sex	Male	49	37.7
	Female	81	62.3
Age in years	20 - < 24 years	45	34.6
	24 - < 28 years	45	34.6
	28 - < 31 years	34	26.2
	>31 years	6	4.6
Mean ± SD		25.65 ± 3.611	
Marital status	Married	81	62.3
	Single	34	26.2
	Divorced	12	9.2
	Widowed	3	2.3
Educational status	Diploma of nursing	13	10
	Nursing technician	62	47.7
	Bachelor's degree	55	42.3
Number of children	No present	50	38.5
	One	29	22.3
	Tow	38	29.2
	Three	11	8.5
	Four	2	1.5
Years of experience in nursing care	1-3 years	72	55.4
	4-7 years	27	20.8
	8-11 years	27	20.8
	>11 years	4	3
Mean± SD		4.53 ± 3.605	
Years of experience in critical nursing care	1-2 years	62	47.7
	3-4 years	38	29.2
	5-6 years	30	23.1
Mean ± SD		2.91 ± 1.582	

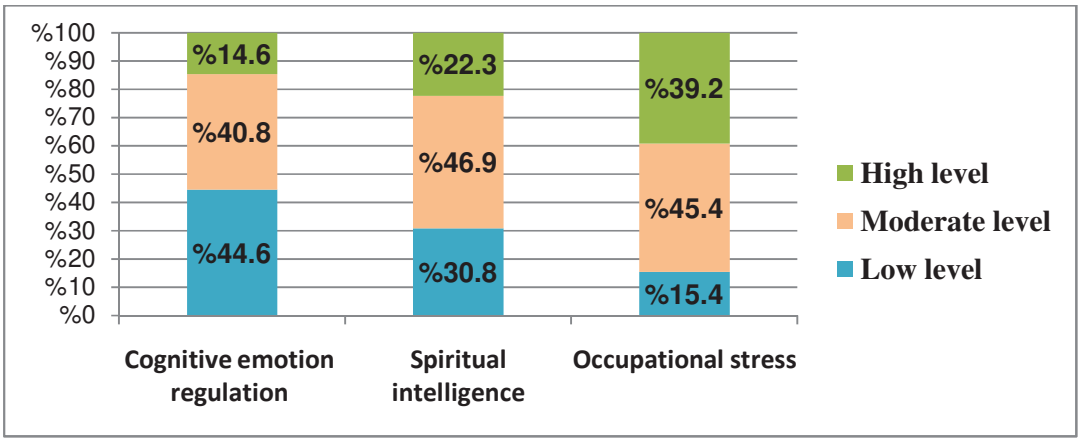

Figure (1): levels of cognitive emotion regulation, spiritual intelligence, and occupational stress among critical care nurses(n = 130).

Table (2) : levels and mean score ofcognitive emotion regulationstrategies that used by critical care nurses (n = 130).

Ways of Cognitive Emotion Regulation	Levels of cognitive emotion regulation subscales among critical care nurses (No = 130)						Mean	SD
	Low		Moderate		High			
	No	%	No	%	No	%		
Adaptive coping strategies								
Acceptance	70	53.8	58	44.6	2	1.5	3.08	0.511
Putting Into Perspective	67	51.5	52	40.0	11	8.5	3.10	0.666
Positive Refocusing	63	48.5	59	45.4	8	6.2	3.13	0.734
Positive Reappraisal	61	46.9	63	48.5	6	4.6	3.20	0.561
Refocus on Planning	66	50.8	53	40.8	11	8.5	3.19	0.693
Maladaptive coping strategies								
Self-Blame	33	25.4	25	19.2	72	55.4	3.20	1.00
Rumination	29	22.3	34	26.2	67	51.5	3.228	0.931
Catastrophizing	26	20.0	34	26.2	70	53.8	3.12	0.945
Blaming Others	31	23.8	28	21.5	71	54.6	3.221	0.829

Table (3): Distribution spiritual intelligence ways that used by critical care nurses (n= 130)

Ways of Spiritual Intelligence	Levels of spiritual intelligence subscales among critical care nurses (n = 130)						Mean	SD
	Low		Moderate		High			
	No	%	No	%	No	%		
Existence of Critical Thinking	21	16.2	76	58.5	33	25.4	2.73	0.650
Discovery of Personal Meaning	34	26.2	59	45.4	37	28.5	2.63	0.725
Spiritual Awareness	40	30.8	61	46.9	29	22.3	2.56	0.728
The Conscious Development	40	30.8	55	42.3	35	26.9	2.56	0.762

Table(4): Type of occupational stress that perceived by critical care nurses (n= 130).

Type of occupational stress that perceived by critical care nurses	Levels of occupational stress (n = 130)						Mean	SD
	Low		Moderate		High			
	No	%	No	%	No	%		
Death and dying	8	6.2	51	39.2	71	54.6	3.05	0.595
Conflict with physicians	28	21.5	50	38.5	52	40.0	2.70	0.789
Inadequate emotional preparation	46	35.4	45	34.6	39	30.0	2.59	0.861
Problems relating to peers	52	40.0	50	38.5	28	21.5	2.43	0.718
Problems relating to supervisors	18	13.8	49	37.7	63	48.5	2.90	0.683
Workload	31	23.8	44	33.8	55	42.3	2.73	0.733
Uncertainty concerning treatment	17	13.1	61	46.9	52	40.0	2.80	0.697
Patients and their families	18	13.8	57	43.8	55	42.3	2.82	0.661
Discrimination	59	45.4	47	36.2	24	18.5	2.23	0.925

Table (5): Correlation between cognitive emotion regulation strategies and occupational stress among critical care nurses (n= 130).

Cognitive emotion regulation strategies	Occupational stress	
	r	P value
Adaptive coping strategies		
Acceptance	-0.181-	0.039*
Putting Into Perspective	-0.345-	0.000**
Positive refocusing	-0.380-	0.000**
Positive Reappraisal	-0.264-	0.002**
Refocus on Planning	-0.260-	0.003**
Maladaptive coping strategies		
Self-blame	0.401	0.000**
Focus on thought/rumination	0.345	0.000**
Catastrophizing	0.412	0.000**
Blaming others	0.424	0.000**

(r) Pearson correlation coefficient.
*Statically significant at ≤ 0.05 level or less.**Highly Statically significant ≤ 0.01 levels.

Table(6): Correlation between ways of spiritual intelligence that occupational stressamong critical care nurses (n= 130).

Spiritual intelligence ways	Occupational stress	
	r	P
Existence of Critical Thinking	-0.350-	0.000**
Discovery of Personal Meaning	-0.438-	0.000**
Spiritual awareness	-0.500-	0.000**
The conscious development	-0.425	0.000**

Table (7): Correlations between total score of cognitive emotion regulation, spiritual intelligence with total score of occupational stress among critical care nurses (n = 130).

Item	Correlations Coefficient	Occupational stress
Cognitive emotion regulation	r P	-0.429- 0.000**
Spiritual intelligence	r P	-0.460- 0.000**

Discussion

Nurses are at the forefront of providing services to patients, and this is given the critical nature of their occupation. Nurses are considered one of groups that consistently exposed to stress[31]. The studies show that regulation of emotion by cognitive helps people to control of their emotion during and after of experiences of stress. In addition to, spiritual intelligence is effective kind of adaption and help in solving problems[32].Therefore the present study focus on assesscognitive emotional regulation, spiritual intelligence, and occupational stress among critical care nurses**,** andexploredthe relation of first two variables with occupational stress.

Regarding to occupational stress among critical nurses, the present study revealed that nearly half of studied nurses 45.4% have moderate level of occupational stress, and 39.2% have higher level, and only 15.4% of them have lower level. The most frequency of occupational stress that experienced by studied nurses were death or dying patients, problems relating to supervisors, dealing with patients and their families, uncertainty concerning patients treatment, conflicts with physician, work overload, inadequate emotional preparation to deal with patient in serious condition, problems with peers, and finally feeling of discrimination.

From the researcher point of view this finding may be related to shortage in staffing, lack of training on emergency situation, lack of emotional support from colleague and supervisors, inappropriate job description, given the direct care to suffering and death patient, and demands from patients, receives little recognition or appreciated. Moreover, fear from infected with corona virus during caring patients with COVID-19,

In this context the study by ***Azimi V et al., (2019),*** under title "Effects of stress on critical care nurses". They found 71% of nurses in intensive care units experienced moderate to severe level of stress[33]. It is important to mention that death or dying

patients is considered major stressors faced the participants in the present study. This may be explained by nurses perceive death as a poor outcome due to failureof management or nursing care for control patients deterioration. This consisted with the study by ***Sarafis P et al.,(2016)*** they assessed the occupational stress and its effect on health and quality of life among nurses in intensive care units, they found dying patients was most prominent stress for nurses [(23)].

The second most frequent stress experienced by participants in the present study was problems with supervisors among 48% of them. These problems may be related to shortage of staff members, disorganized monthly schedule, lack of support from direct supervisors. This agreement of the study by ***Mehta R, (2014)*** who studied stress among nurses working in critical care areas at a tertiary care teaching hospital in Nepal, they found a lack of a psychological readiness and poor of communication between nurses and their supervisors, and this is a main source of stress among critical care nurses[(34)].

The third most frequently of stress experienced by nurses in the present study was stress during dealing with patients and their families. 42% of participants were experienced higher level of stress. This may be explained by patients and their family members sometimes asked unreasonable demands, blamed nurses for wrong something, complained about inadequate nursing care, or profound abusive behavior. This goes in line with the study by ***Saedpanah D et al., (2016),*** who assessed effect of emotion regulation training on occupational stress of critical care nurses, in two teaching hospitals affiliated to the Kurdistan university of medical sciences, and found that dealing with patients was the third stressful event after workload and uncertainty concerning treatment[(10)].

The fourth most frequent stress that experienced by critical nurses in the current study was uncertainty concerning about patient treatment. 40% of nurses have high level of stress. They afraid from making a mistake in treating a patient, being in charge with inadequate experience, and worried about the absence of physician in a medical emergency, especially the most of studied sample (72%) has less three years in nursing care filed. In the same time, their lack of knowledge and experience may be cause frustration. The new staff in the current study reported during interview they felt inadequately trained for what they have to do when exposed to hazards in the nursing working environment. Such result is consisted with the study by ***Faremia F et al., (2019),***whoassessed of occupational related stress among nurses in two selected

hospitals in a city southwestern Nigeria,they showed that uncertainty concerning about patient treatment, it was the most stressor faced critical care nurses[35].

The work overload was considered a fifth most frequent stress experienced by 42% of nurses in the present study. This may be explained by shortage in staff, unpredictable staffing schedule. Those nurses were burdened with extra responsibilities such as having too many nursing tasks, working in official holidays, and in some case having to make decisions under pressure. Such result consisted with the study conducted by ***Al Rasasi A et al., (2015)*** who assessed work related stress among nurses working in Dubai, and they revealed that nurses showed the workload is the most stressors within the daily work stressors[36].

Regardingto,the cognitive emotional regulation by nurses in the present study,thefindings revealed that 44.6% of them have lower level of emotional regulation cognitively, 40.8% have moderate level, and only 14.6% have higher level. In addition to, the participants have lower level of adaptive or healthy ways of emotion regulation such as: acceptance their emotions, positive refocusing, focus on planning, put stressful events in perspective, and positive appraisal of these situation. In same line they have higher levels of maladaptive or unhealthy ways of regulate emotions such as: blame themselves for stressful events, focus on negative thoughts and rumination, catastrophizing stressful situations, or blame others.

This findings may be explained by, lack of training among participants about awareness and regulation their emotions effectively especially at time of occupational stress. In addition to, overload of work and a lot of daily stressful events, and absence of emotional support from peers or supervisors. In this context ***Pacaric S et al., (2018)*** mentioned nurses in their study reported that they should to provide care in an unemotional manner, without emotional response to the pain, and they have to focus on medical care, and this made them suffer from emotional exhaustion, and development of psychosomatic disorders and physical illnesses[37].

In addition, ***Royani Z et al., (2016)*** who assessed the relationship between job stressors and coping strategies from critical nurses, they showed the most nurses and physician in critical care units used maladaptive strategies more than adaptive[38]. Moreover ***Naushad V et al., (2019)*** in a study entitled "A systematic review of the impact of disaster on the

mental health of medical responders" they revealed that nurses had higher levels of unhealthy emotions than physicians incrisis situations[39].

On another hand, the results of present study contradicted with the study by, ***Hosseinigolafshani S et al.,(2018)*** under title "Cognitive emotion regulation strategies used by critical care nurses". They explored the participants have the higher level of healthy emotional regulation such as acceptance, and positive reappraisal.Moreover, they have the lower level of unhealthy ways such as self-blame, catastrophizing, other-blame[40]. Moreover the study by ***Zeabadi et al., (2021)*** who assessed cognitive emotion regulation strategies among nurses, they revealed maladaptive strategies is in lower level among critical care nurses[41].

The findings of the present study explored that a negative correlation between cognitive emotional regulation among participants and their occupational stress. This means that nurses who effectively regulate their emotions cognitively, were less experienced occupational stress and vice versa. In addition to, the results show that unhealthy ways of regulate emotions such as self-blame, rumination of negative thoughts, catastrophizing of stressful situation, and blaming others have positive correlation with occupational stress. That means the nurses failed to cope effectively with stress, thus lead to more compliance and problems. Moreover the healthy or adaptive ways of cognitive emotion regulation such as acceptance stressful situation, put it into perspective, positive refocus on it, positive reappraisal, and planning their action, all of these have negative correlation with occupational stress.

This results supported by the previous studies, ***Jamshidian Y et al., (2018)*** studied relationship between cognitive emotion regulation and meaning of life with health anxiety among emergency nurses, they found negative relationship between acceptance, positive focus on stress, putting it into nurses' perspective,and positive reappraisal with effect of stress [42].

Furthermore, ***Wang Q et al., (2021)***in theirstudy entitled "Anxiety, depression and cognitive emotion regulation strategies" in Chinese nurses during the COVID-19 outbreak" they concluded that more engagement of maladaptive strategies such as: self-blame, rumination and catastrophizing lead to anxiety and stress. [43]. In addition,***Gonnelli C et al., (2016)*** in their study about "Review the emotional regulation in nursing work" they found positive correlation between high cognitive emotion regulation and coping with the stressful events[44].

Regarding to spiritual intelligence among critical nurses who participated in the present study, the finding shows the around half of participants have moderate level of spiritual intelligence, 30.8% of them have lower level, and only 22.3% have higher level. In addition to, few percentage of them have higher level of spiritual intelligence such as:critical thinking, discovering personal meaning of this stressful situation, spiritual awareness, and consciously develop of self , and most of nurses have moderate level of using these ways. This means that those nurses need support and training to develop their abilities cognitively, emotionally, and spirituality to cope effectively with their occupational stress.

This finding is consisted with the result of, ***Moradnezhad M et al., (2017)*** who assessed spiritual intelligence of nurses working at the intensive care units of hospitals in Tehran University. They results revealed that only 21% of the participants had high levels of spiritual intelligence, and most of the studied nurses 76.25% had a moderate level of spiritual intelligence, also (2.75%) of the nurses had low levels of [(21)]. Similarly, **Naji S*, (2017)*** who examined the relationship between spiritual intelligence and quality of work life in nurses, they foundmoderate level of spiritual intelligence among their participants[(45)]. Furthermore, ***Riahi S et al., (2018)***, who studied the effect of spiritual intelligence training on spiritual care competency in critical care nurses, they detected the most nurses have moderate level of spiritual intelligence[(46)].

It is important to mention that, the finding of the present study shows the negative correlation between spiritual intelligence and occupational stress, and negative correlation between ways of spiritual intelligence " existence of critical thinking, discovery of personal meaning, spiritual awareness the conscious development " and stress that perceived by critical care nurses. This result may be explained by the spiritual intelligence help nurses to be flexibility, increase motivation, and helps nurses to solve their problems, it also makes nurses more stable by reducing their worries and anxieties, that help them for communicate with others more deeply, and cope effectively with stress.

The finding in the present study supported by study of ***Khandan M et al., (2017)*** under title " Relationship between spiritual intelligence and job performance among nurses and nursing aids " they detected the nurses who have high level of spiritual intelligence handled stressful situation than others [(47)]. Moreover ***Ali, et al., (2018)*** in their study about " Effect of spiritual intelligence training on perceived stress in a

psychiatric nurse " they foundnegative correlation between spiritual intelligence and occupational stress among nurses, and the occupational stress decreased after spiritual intelligence training [48]. Besides, ***Sunaryo H et al., (2017)*** in their study about the effect of emotional and spiritual intelligence on nurses, burnout and caring behavior, they found negative correlation between burnout, nurses' stress and their ways of spiritual intelligence [49]. Additionally, ***Beni K et al., (2019)***, who assessed roles of spiritual intelligence on enhance the quality of nursing care, they established negative relation between spiritual intelligence and nurses'stress[50].

Finally, spiritual intelligence is very important to nurses because help nurses to mutual understanding, improve wisdom, unconditional acceptance of the patient, promote hope and relaxation, agreement among colleagues and job satisfaction, this all benefits which decrease nurses stress during wok[51].

Conclusion

Based on the findings of the present study,it concluded that a majority of critical care nurses have moderate to lower level of cognitive emotional regulation, and spiritual intelligence, and more than half of them have moderate to higher level of stress during their work. In addition to cognitive emotional regulation and spiritual intelligenceare effective ways for coping withoccupational stress,increased cognitive emotional regulation and spiritual intelligence among critical care nurses lead to decrease their occupational stress.

Recommendation

Based on the results of the present study the following recommendations are suggested:

- Establishing training program for new staff nurses about stress-management program which increase their abilities to coping with job stressors.
- Design training program to improve cognitive emotion regulation for nurses.
- Conducting educational workshops for strengthening nurses' spiritual intelligence and using the experienced nurses with higher levels of spiritual intelligence for help and support nurses with stress and burnout.
- Clearly define job description for new nurses in intensive care units.
- Future studies about develop spiritual intelligence of critical nurses for improve their quality of life and their nursing care that provide for critical patients.

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