Nurses' Emotional Intelligence and Stress at Workplace during the COVID-19 Pandemic:

Evidence from Egypt[1]

Dr. Nasser F. Easa[2]

ABSTRACT

COVID-19 has brought much stress to healthcare workers in globe. Nursing is one of the main occupations with a high level of stress. This paper aims to examine the association between nurses' emotional intelligence (EI) and stress at workplace during COVID-19 pandemic. The four domains of EI (self-awareness, self-management, social awareness, and relation management) were linked to nurses' stress at workplace. Data were collected from 268 nurses at Egyptian healthcare institutions, between August and December 2020. The research findings indicated that Egyptian nurses show a moderate level of EI competencies, and experience a high level of stress at workplace, due to the COVID-19 pandemic. A negative relationship between each of the four components that define EI and nurses' stress and workplace was also existed. Research implications and directions for future research are presented.

Keywords: *Emotional Intelligence – Stress at Workplace – COVID-19 – Nurses – Egypt.*

1- Introduction

Coronavirus (COVID-19) pandemic has introduced unexpected challenges to healthcare sectors globally, e.g. shortage of providing personal protective equipment for both staff and patients, intensive care units, and ventilators. Mental Health America carried out a survey (June-September 2020) to explore the feelings of healthcare staff during the COVID-19 pandemic. The results indicated that 93% of them were encountering stress, 86% anxiety, 77% frustration, 76% burnout, and

75% were overpowered. Moreover, 76 % of nurses were more likely to feel fatigued, compared to other healthcare staff (63%), and 45% of them reported that they were less likely to receive emotional support (Lagasse, 2020).

Nurses, in particular, have imposed considerable amounts of social and mental pressures because of taking care of infected patients, fear of infection, and working for long time with a face mask and other personal protective equipment (Arentz et al., 2020; Talaee et al., 2020). Therefore, front-line nurses caring for COVID-19 patients are subject to experience high level of depression, burnout, anxiety, stress, and fear, putting their well-being at risk (Hu et al. 2020; Salari et al., 2020). Even though, Liao et al. (2020) argue that second-line nurses, without direct contact with infected patients, experience a higher level of stress than first-line nurses do. They claim that during Covid-19 pandemic, healthcare institutions provide a more protective environment to first-line nurses, while second-line nurses usually receive less support and social attention, even they have a high chance to get infected as well. Generally, nursing is one of the main occupations with a high level of stress in the workplace due you dealing with the death of patients (Lambert et al., 2007).

Well-being and health of nurses is highly influenced by the mount of stress they exercise at the workplace (Arentz et al., 2020). One of the main techniques that an individual could adopt to cope with the multitude of stressors is the emotional intelligence (EI) (Lambert et al., 2007). Goleman (2002) defined emotional intelligence as the capacity to identify and regulate our emotions and those we deal with by appropriate methods of association and connecting with four emotional intelligence domains; self-awareness, self-management, social awareness, and relationship management. When facing very challenging situations, our and others' emotions should be handled more carefully (Jonas, 2013). EI is viewed as a unique and practical construct in nature (Tamta & Rao, 2017). Therefore, EI has gained a considerable amount of attention at both the national culture and international business levels (Mattingly & Kraiger, 2019).

Although a negative association between EI and stress at the workplace has been supported in the literature, however limited information is

available on the relationship between the specific components of EI (self-awareness, self-management, social awareness, and relation management) and stress at the workplace, especially there is an evidence that each of these dimensions influences differently "the bio- and psycho-social well-being" of an individual (Enns et al., 2018; Landa et al., 2008; Rahim, 2010; Rezvani & Khosravi, 2019). By the same taken, even though the relationship between EI and nurses' stress was discussed mainly in education, nursing, and medicine research (e.g. Kikanloo et al., 2019; Landa et.al, 2008; Michelangelo, 2015; Por et al., 2011), however this relation is not largely addressed in business & management research. Furthermore by considering the high level of stress nurses have faced during the COVID-19 pandemic, the current study is one of the initial studies to address the effect of EI on stress during this crisis. Therefore, this study aims to examine the linkage between nurses' emotional intelligence and stress at workplace during the COVID-19 pandemic at the Egyptian healthcare insinuations. In particular, the current study investigates the effect of each component that define EI on nurses' stress at workplace. Investigating such relationships might guide the nurses themselves and their supervisors to employ proper strategies to improve nurses' mental health, well-being, and performance in times of crisis (Kikanloo et al., 2019).

Following the introduction, the study discussed the theoretical background conceptualizing the research variables. Next, detailed literature on the relationship between EI and stress at workplace is presented and the research hypotheses were developed accordingly. The methodology section, then, discussed research measures, population, sample, and procedures, and statistical techniques used for data analysis. The finding section included demographic analysis of respondent profile, quality of measures analysis, descriptive analysis, and hypotheses testing. This was followed by a discussion of the findings and research implications were presented. The last section discussed the research limitations and provided directions for future research.

2- Theoretical Background

2-1 Emotional Intelligence (EI)

The "emotional intelligence" term was occasionally used within the general publications during the 1960s and onwards (Payne, 1986), the doctoral thesis of Payne (1986) contained the first clear use of the term. The paper of Salovey and Mayer (1990) is considered the main source thought over the topic (Ashkanasy & Daus, 2005). Salovey and Mayer (1990) refereed to the emotional intelligence as a type of social intelligence and skills of monitoring and differentiating between one's own and other emotions and to employ this knowledge to direct one's thoughts and actions. They explained the label of "emotional intelligence" on the basis that it needs processing of particular emotional information from within the individual, and that it involves some degree of competence for adequate social functioning of these skills. Moreover, EI is an application of emotions that functions logically and intelligently, monitored by both emotion and reason. The definition of EI by Salovey and Mayer (1990) derives in part from Gardner's earlier concept of personal intelligence. In Gardner's (1983) multi-intelligence theory, he suggested that the awareness of one's own and the emotional states of others are consistent constituents of what he called "personal intelligence". This definition consists of two subtypes-intrapersonal intelligence (the capability to handle one's emotions) and interpersonal intelligence (the capacity to interpret other people's emotions).

Yet, Goleman was the master who took the EI concept from the academic world to the commercial industries (Law et al, 2008). Goleman (1995) expanded the term "Emotional intelligence" where the researcher placed emotions, and emotional intellgence in specific, at the center of a persons skills. Goleman (1995) believes that the meaning of emotional intelligence means "being able, for example, to rein in emotional impulse, toread another's innermost feelings, and to handle relationships smoothly". Emotional intelligence has five elementary fields. the first field considered foundation of EI is the ablity to identify one's emotions and monitor them continously. A capability that is extremely essential for self-understanding and psychological insights. The second is emotion management, which means the capability to handle one's emotions, a

skill that enhances one self-awareness. The third is self-motivated emotion organizing utilized to complete a goal, this element is critical to leveraging attention, mastering self-motivation, equates to mastering creativity as well as action. The fourth is the ability to identify the other person's emotions, to be empathic, is another ability that is rooted in self-awareness and the fifth is the ability to handle relationships, which is the capacity to manage the other person's emotions. All are constructed into main four domians namely self-awareness, self-management, social awareness, and relation management.

2-1-1 Self-Awareness

Self- awareness is identifying one's internal state, preference, and intuition (Zakariasen & Victoroff, 2012). In other words, it is the inherent potential for feeling, using, recognizing, communicating, describing, remembering, recognizing, learning, managing, understanding and explaining emotions" (McPheat, 2010). Self-aware employees have the "ability to accurately perceive own emotions and stay aware of them as they happen" (Lam & O'Higgins, 2012).

Ingram (2013) mentioned employees cannot seek clear "permissions" to explore their practice's emotional content or to exercise the degree of autonomy implied in the emotional intelligence system. Heavy workload and poor leadership, combined with a troubling and possibly hazardous context of practice, will force employers to exercise a variety of emotional problems (Ingram, 2013). Also, people are advised to seek help in crisis time so that they can regain awareness of themselves or even uncover emotional issues that they might have ignored (Garner, 2009). It should be noted that self-awareness goes further than just having enough knowledge about one's own self but expands to being able to process this knowledge to learn more about one's own self (Dirette, 2010).

2-1-2 Self-Management

Self-management refers to "self-regulation" in some emotional intelligence models. Self-management is the ability to regulate emotions and actions such that behave correctly in different circumstances. It is "the processes by which individuals influence which emotions they have,

when they have them, and how they experience and express these emotions" (Gross, 1998).

McPheat (2019) reported that self-management is the concept of taking responsibility for our emotions and how they affect our behavior and decisions. Employees who are taking responsibility for their feelings, can regulate their mental and emotional health. This allows employees to experience emotions and helps them to create healthy, lasting, and fulfilling relationships both within and outside the workplace.

2-1-3 Social Awareness

The first two skills are personal because they are self-related emotions means, as we are dealing with our emotions, while social awareness is social because it is related to understanding and dealing with the emotions of others (McPheat, 2019). That means being socially aware is about being aware of your atmosphere, what is around you, and being able to interpret the emotions of people you interact with accurately. Additionally, McPheat (2019) reported that social awareness involves understanding how other people feel and justifying those feelings. Moreover, it involves recognizing relationships and processes within your company or your social networks.

Garner (2009) reported that social-awareness is the capacity to understand and react to other emotions. In particular, it is the ability to perceive or listen to others to fully considered whose thoughts and emotions have not been said or partially expressed, the willingness of the person to be part of a group or team, the ability to make choices, to identify aspects of culture and meaning and how those aspects affect the acts and behavior of a person (Silvera et al., 2001). In conclusion, social awareness is simply about how employees deal with others' feelings, needs and desires (Zakariasen & Victoroff, 2012).

2-1-4 Relationship Management

While social awareness is the ability through which an employee become conscious of other employees' emotions, and how he/she can impact their feelings through service orientation, relationship management is the social skills or those that employees have access to as they are participating in relationships with others. Relationship management

provides ways to connect with others that can boost productivity, strengthen relationships, and increase employees overall quality of life (McPheat 2019). Actions and words about the people with whom we work may either support or damage our relationship with them (Goleman, 2002). Lam and O'Higgins (2012) described relationship management as the willingness for using the awareness of one's own emotions and others' emotions to effectively control interactions. Thus, it requires good communications and efficient handling conflicts.

2-2 Stress at Workplace

Stress at workplace has attained the interest of scholars and practitioners (Yozgat et al., 2013). Work stress is rooted in the increasing complexity of jobs, and the ever-changing work environment within organizations. Despite the conflicting findings of the effects of job stress on employee attitudes and behaviors. It has been found that stress the major factor in creating and promoting the inaugural's inclinations in relation to a job, as such staff performance is affected (Hrefish & Al-Hadrawi, 2020). The nature of the stress is discussed based on three approaches: the engineering, physiological, and psychological approaches (Cox & Griffiths, 1995). In the first approach, the stress is considered as a stimulus, an environmental characteristic. In the second physiological approach, the stress is defined as a biological change that the person feels it when facing a stressful state (Cox & Griffiths, 1995). Whereas the third approach considers stress as an interaction between an individual and his/her environment rather than a stimulus or response (Cox et al., 2000).

Within the same domain, when the situations or conditions surpass the endurance capability of an individual, he/she reaches the state of what is so-called stress. Based on the above approaches, job stress is defined similarly, however, one approach views it as a cluster of external physiological or social factors that affect the work environment (Gharib et al., 2016). While the other is the responses of the individual toward the work environment's characteristics that may be seen as threatening (emotional, physical) influenced by the psychological actions and the differences of the individual. As such, job stress occurs when the balance between the work environment's demand and the abilities of the

individual is not found. Thus, within the work environment, stress may be a result of an awareness warped with ambiguity and conflict topped with an overload from accumulating workload within the organization as well as the individual's personality characteristics (Gharib et al., 2016).

Within the literature, two types of stress are found: eustress and distress (Bienertova-Vasku et al., 2020). *Eustress is* positive stress, is considered favorable encompass the challenge feel, this may occur when there are opportunities at work, and there is a need to grab them. Thus, this kind of stress make the individual feels energized to achieve his/her target. As such with a medium level of this kind of stress the individual can make a high performance (Gharib et al., 2016). *Distress* usually occurs when the individual perceives risks that may affect him/her negatively (Gharib et al., 2016). The current study is concerned with the negative type of stress.

3- Literature Review and Hypotheses Development

3-1 Emotional Intelligence and Stress at Workplace

Many studies have managed to prove that the effect of EI competencies on stress within various industrial contexts such as nursing, soft programing, and banking are profound (Enns et al., 2018; Rahim, 2010; Rezvani & Khosravi, 2019). Kauts and Saroj (2012) described emotional intelligence (EI) as a helpful element in reducing teacher's workplace stress. The worker's willingness to regulate their feelings appropriately, can advance their ability to adjust to stress elements on both psychologically and physically levels at the work place (Yusoff et al., 2013).

Lambert et al. (2007) indicated that, through improving EI, employees can regulate stress. Moreover, it prevents negative feelings from overwhelming the capability to think critically, feel inspired, understand feelings correctly, and to get along well with others. Gohm et al. (2005) claimed that EI may be beneficial for some employees to alleviate stress, but is irrelevant to others, who do not believe in their emotional abilities.

Goleman (1998) pointed out that an emotionally intelligent individual should be able to control their emotions in such a manner that he/she

can successfully manage depression and utilize stress as a motivator. Controlling emotions were more likely to assist nurses to respond effectively when dealing with stress (Por et al., 2011).

Because of emotional intelligence, an employee knows how to respond and how to reduce possible stress (Jung & Yoon (2016). The existence of a relationship between EI and work stress was also confirmed (Goswami & Talukdar, 2013; Molero Jurado et al., 2019; Rashid et al., 2016; Sherafatmandyari et al., 2012). It was noted that the association between EI and nurses' stress was addressed mainly in education, nursing, and medicine research (e.g. Kikanloo et al., 2019; Landa et al, 2008; Michelangelo, 2015; Por et al., 2011). However, covering this association in business and management research is limited. Besides, there is a very few research considers EI and nurses' stress during the COVID-19 pandemic.

Therefore, we suggest the following hypothesis:

H1: *There is a significant negative relationship between nurses' emotional intelligence and stress at workplace.*

As noticed above, the relationship between EI and stress was largely discussed, however, there is a lack of research into the relationship between the specific components of EI (self-awareness, self-management, social awareness, and relation management) and stress, especially there is an evidence that each of these dimensions influences differently an employee well-being (Enns et al., 2018; Landa et al., 2008; Rahim, 2010; Rezvani & Khosravi, 2019). Therefore, more discussion on the relationship between each component that define EI with stress at work place is presented in the following.

3-2 Self-Awareness and Stress at Workplace

Goleman (2001) described self-awareness as the core of the other components of EI and identifies it as a simple understanding of own emotions, feelings, and desires. Having higher rates of self-awareness provides greater abilities and self-confidence to handle any stressful situation. On the other side, those with a low level of self-awareness emotional intelligence, and self-confidence are less exposed and prefer to avoid stressful situations; their weakness to stress can be a major

issue at the organizational level (Hong & lee, 2016). Lazarus (1999) stated that emotions and stress are interconnected; where there is distress, there is emotion. Therefore, an individual with a high degree of awareness of emotional intelligence has the potential to turn negative emotions into positive emotions and is driven to function in stressful situations. Sutton (2016) stated that the ability to set, control and manage emotions and thoughts among these individuals has a reverse relationship with depression and disappointment. Employees/managers can utilize self-awareness leads to effectively dealing with challenges that face the organization and be able to appropriately cope more with difficulties and changes within the organization (Dulewicz et al., 2003; Nikolaou & Tsaousis, 2002; Welch, 2003). Therefore, the following hypothesis is suggested

H1.1: *There is a significant negative relationship between nurses' self-awareness and stress at workplace*

3-3 Self-Management and Stress at Workplace

Emotional self-management is the ability to stay calm in a stressful situation and the willingness to deal with an aggressive human without lashing out in return (Goleman, 2001). Employees/managers should remain emotionally in control and negotiate calmly with unhappy partners to stop tempers from curving (Barry & Du Plessis, 2007). Self-management involves choosing a way to express emotions that can enhance the flow of thinking. Individuals with high self-management abilities can manage their negative emotions under challenging and stressful situations, so they can regulate their negative emotions, such as anger and stress. These individuals experience fewer challenges with their life, so if any difficulties occur, they will easily recover from stressful conditions to a positive situation (Goleman, 2001).

Successful employees with high self-management may help prevent negative emotions such as disappointment, stress. These employees experience fewer challenges in their workplace and, in the event of any difficulties, they can recover to desired conditions from the stressful ones. Employees that are unable to do so easily get nervous and lose control they become frustrated as excessive stress and discomfort make them annoyed. These behaviors suggest self-control in people with high

emotional intelligence caused by exposure to challenging environments and a fast return to ideal and desirable circumstances so that stress will be decreased (Barry & Du Plessis, 2007). The relationship between components of self-awareness and self-management was also of significance to stress (Yamani et al., 2014). Therefore, the following hypothesis is suggested.

H1.2: *There is a significant negative relationship between nurses' self-management and stress at workplace.*

3-4 Social Awareness and Stress at Workplace

Social awareness means that people have a responsibility to others and value their feelings and opinions (Goleman, 1995). Employees with a high level of social awareness skills act actively with stressful situations in their organization (Carmeli, 2003). Employees do not work individually, but alongside others, and perhaps also in teams and that means managing their relationships within the organization and others appropriately by making their organization realizes how others feel to helping them feel better especially in stressful situations (McPheat, 2010). Therefore, the competence of workers to better control their feelings and to handle the stress of other employees would significantly improve their ability to deal with psychophysiological work stress (Güleryüz et al., 2008).

Social awareness helps people to understand and perceive the mostly non-verbal signals that others are actively using to communicate with you. Such signals let you know how people truly feel, how their emotional state varies from moment to moment (Barry & Du Plessis, 2007). This sensitivity to others is important for preferable performance whenever interactions with employees are the focus (Goleman, 2001). Sutton (2016) argued that those employees who are socially aware can adapt to stress and resulting problems and protect themselves from the negative and damaging effects. The employee ability to interpret the emotional responses from others brings him/her in a position in which he takes control in maintaining a positive mood and copes with stress by using emotional tools consistent with the present conditions. Therefore, the following hypothesis is proposed.

H1.3: *There is a significant negative relationship between nurses' social awareness and stress at workplace.*

## 3-5 Relationship Management and Stress at Workplace

Working well with others and having a good relationship management is a process that starts with the emotional awareness and ability to recognize and understand what other people are experiencing like being in a bad mood or suffering from stress or anxiety (Bradberry & Greaves, 2009). There would be a relationship between relationship management and the amount of stress imposed by the working relationship. People with social skills and high relationship management are fully active in a complex environment and have the skill to invent and handle new methods (Klem & Schlechter, 2008). Workplaces that do not have such close relationships and where workers do not spend any non-working time together are likely to be weak in emotional intelligence relationship management (Klem & Schlechter, 2008). Based on this argument, the following hypothesis is suggested:

H1.4: *There is a significant negative relationship between nurses' relationship management and stress at workplace.*

4- Research Methodology

4-1 Research Model

Based on the research hypothesis that was driven from the literature review, Figure 1 represents the research model that focuses on the four dimensions of EI and stress in the workplace will be the dependent variable.
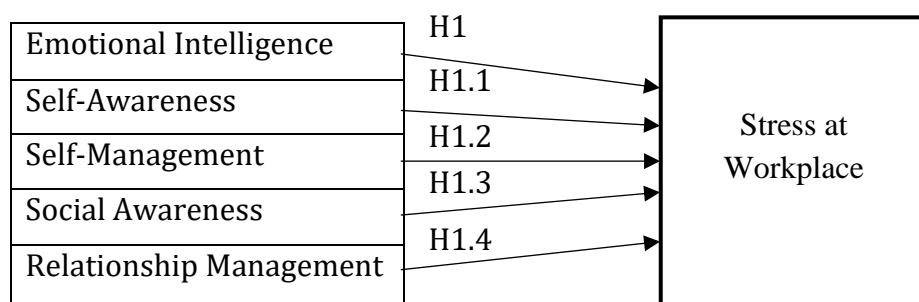
Figure 1: Research Model

4-2 Measures

4-2-1 Emotional Intelligence

EI was measured based on its four sub-components of EI: self-awareness, self-management, social awareness, and relation management. The current study adopted the Assessing Emotions Scale used by Schutte et al. (2009). This scale contains thirty-three items which measure four components of emotional intelligence. Each item was rated on a 5-point Likert scale ranging from 1= strongly disagree to 5 = strongly agree. The scale assessed how well respondents typically comprehend, identify, regulate and harness emotions in themselves and others. Examples of these items were "I expect that I will do well on most things I try", "Some of the major events of my life have led me to re-evaluate what is important and not important", "I am aware of the non-verbal messages other people send", and "I can tell how people are feeling by listening to the tone of their voice".

4-2-2 Stress at Workplace

This study adopted the Nursing Stress Scale (NSS) developed by Gray-Toft and Anderson (1981) to pinpoint comprehensive stressors of nursing during COVID-19 pandemic. NSS has been widely tested and validated by many studies e.g. Lee et al. (2007). The NSS entailed 34 questions on, death and dying, workload, conflict with others. Responses were ranked on 5-points Likert scale, ranging from 1= strongly disagree to 5= strongly agree. Examples of these items are "Listening or talking to a patient about his/her approaching death", "Receiving inadequate information from a physician regarding the medical condition of a patient", "Lack of an opportunity to share experiences and feelings with other personnel on the unit", and "Not enough staff to adequately cover the unit".

4-2-3 Control Variables

Demographics are more likely to influence employees' attitudes at work (Boselie et al., 2005; Nikolaou & Tsaousis, 2002). Therefore, gender, age, marital status, educational level, and years of experience, and hospital type groups were considered as control variables in this study. Gender was grouped into female and male. The age variable was categorized into

four groups: less than 30 years, 31-40, 41-50, and more than 50 years. Marital status was divided into three groups, single, married, and single parent. Educational level was grouped to professional schools and insinuations, bachelor degree, and postgraduate degrees. Years of experience were categorized into four groups: less than 5 years, 5-10, 11-20, and more than 20 years. Finally, hospital type was divided into groups: public and private hospitals

4-3 Research Population, Sample, and Procedures

There is an obvious nursing shortage in Egypt (Brownie, et al. 2018). In 2017, there were 126,200 nurses in Egypt (14.8 nurses for every 10, 000 Egyptians) (Radwan & Adawy, 2019). Due you to the essential role of nurses in the Egyptian healthcare system, Egypt should take serious actions to strengthen the workforce capacity of nursing (Brownie, et al. 2018). Egyptian nurses were considered in this research.

Thirty nurses were randomly chosen for the pilot study to ensure that the pilot testers had similar characteristics as those involved in the main research. Since the original survey was developed in English, it was translated into Arabic and piloted using three bilinguals. A questionnaire is attached to a cover letter explaining the purpose of the study, the importance of participation in the survey, and the assurance of confidentiality. The questionnaire contained three sections. In section one and two we asked the participants to respond to the questions of EI and stress at work, respectively. In section three we asked them to provide their demographic data.

Due to COVID-19 restrictions, the questionnaire was distributed in electronically through social media platforms, especially Facebook, between August and December 2020. Using a convincing sampling technique, data were collected from 268 nurses working in 10 public and 15 private hospitals in Egypt (Alexandria, Tanta, and Kafr-El Sheik governorates, in particular). For sample size consideration, Anderson and Gerbing (1988) and Ding et al. (1995) suggested that the minimum number of respondents should be between 100 and 150 to be able to generalize the research findings. "A sample size of 150 or more typically is needed to obtain parameter estimates that have standard errors small enough to be of practical use" (Anderson & Gerbing, 1988, p. 415).

Therefore, our sample size is adequate to limit the standard error and to generalize the findings. To control the response, we explained to respondents that responses would remain confidential (Donaldson & Grant-Vallone, 2002) and conducting the factor analysis (Becker & Vance, 1993)

4-4 Data Analysis Techniques

Data were analyzed using the Statistical Package for the Social Science (SPSS) software, version 24. Different statistical techniques were conducted to achieve the research aims. First, demographic analysis was conducted to provide a broader overview of respondents profile data. Second, to assess the quality of measures, research variables were tested against the validity and reliability of constructs (Rose & Sullivan, 1993), using the factor analysis and Cronbach alpha coefficient techniques. Third, descriptive analysis was employed to summarize means, standard deviations, and correlation coefficients of the research variables (Sekaran & Bougie, 2016). Finally, Multiple Regression analysis was conducted to examine the research hypotheses (Johns & Lee-Ross, 1998).

5- Findings

5-1 Demographic Analysis

Table 1 provides the frequencies and percentages for each demographic group of respondents. The table shows that just over two-third of respondents were females (70%). The majority of respondents were also married (62%), where almost one-third of them were single (29%). For age groups, just over one-third of respondents (37%) were under 30 years of old, almost another one-third were 31- 40, followed by 41-50 (22%), and a low percentage (11%) of respondents were above 50 years of old. More than half of respondents were graduated from professional schools/insinuations (54%), about one-third of them were bachelor degree holders, and only 12% of them hold a postgraduate degree. Additionally, just over one-third of respondents (35%) had 5-10 years of experiences, one-quarter had 11-20 years (25%), almost another one-quarter had less than 5 years, and the last group had more than 20 years of experience (17%). Finally, almost half of the respondents were working in public hospitals (49%).

Table1: Respondents Background Profiles (N= 268)

Demographic Items	N (%)
Gender	
Female	187 (70)
Male	81 (30)
Marital status	
Single	77 (29)
Married	167 (62)
Other (single parent)	24 (9)
Age	
Less than 30 years	103 (37)
31-40	80 (30)
41-50	58 (22)
More than 50 years	30 (11)
Educational level	
Professional schools/Institutions	145 (54)
Bachelor degree	91 (34)
Postgraduate degree	32 (12)
Years of experience	
Less than 5 years	62 (23)
5-10	95 (35)
11-20	66 (25)
More than 20 years	45 (17)
Hospital type	
Public	132 (49)
Private	136 (51)

5-2 Validity Analysis

The construct validity of research measures was tested by running a factor analysis technique (Anderson & Gerbing, 1988; Comery & Lee 1992; Herve, 2003). We run a factor analysis for EI and stress at workplace separately. Table 2 explains that EI was extracted into four main components and stress at workplace into one component, with eigenvalues greater than 1.0 and accumulative variance of 61.36%, and 61.56% respectively. In Table 3, the KMO value of sampling adequacy also accounted 87% and 89 %, greater than 60%, with significant Chi-Square values ($p < .05$). All the results confirm that the research measures are well-constructed (Anderson & Gerbing, 1988; Hair et al., 2010).

Table 2: Total Variance Results

Factors	Eigenvalues for Emotional Intelligence		
	Total	% of variance	Cumulative %
1	9.135	34.672	34.672
2	4.743	15.537	50.209
3	2.114	6.342	56.551
4	1.163	4.813	61.364
Eigenvalues for Stress at Workplace			
1	8.167	61.562	61.562

Table 3 : KMO and Bartlett's Test

		Emotional Intelligence	Stress at Workplace
KOM value		.874	.894
Bartlett's Test	Approx. Chi-Square	3082.58	2045.043
	Df	531	78
	Sig.	.000	.000

5-3 Reliability Analysis

Table 4 indicated that Cronbach's alpha values for all research variables were sufficient (greater than 0.70), confirming the internal consistency of all variables (Nunnally & Bernstein, 1994). As noted, the internal consistency coefficients ranged from 0.813 to 0.915.

Table 4: Internal Consistency Coefficients

Variables	Cronbach's Alpha	N. of Items
Self-Awareness	.813	10
Self- Management	.750	9
Social Awareness	.856	8
Relation Management	.915	6
Stress at Workplace	.841	34

5-4 Descriptive Analysis

Table 5 showed that the overall means of EI dimensions were ranged from 2.86 to 3.08 (maximum 5). This provides evidence that Egyptian nurses show a moderate level of EI skills. However, they experience a high level of stress at workplace (mean= 4.29). Table 5 also indicated a positive correlation among the four dimensions of EI and displayed that these dimensions are negatively related to stress at workplace.

Table 5: Means, SD, and Correlation's Coefficients (N=268)

	Mean	SD	Self-Awareness	Self-Management	Social-Awareness	Relation Management
Self-Awareness	3.08	.855				
Self-Management	2.95	.974	.267***			
Social Awareness	2.86	.769	.312**	.257***		
Relation Management	3.07	.618	.266***	.313**	.320***	
Stress at Workplace	4.29	.963	-.348**	-.285***	-.392***	-.304***

 * P<0.05, ** P<0.01, *** P<0.001.

5-5 Regression Analysis and Hypotheses Testing

Table 6 displayed that that tolerance and VIF values were less than 1.00 and 10.00 accordingly, indicating the absence of multicollinearity problem between the independent variables and the meaningful of the regression results (Hair et al., 2014; Myers, 1990). The overall results of the regression model were statistically significant (F= 7.564, P= 0.000). The adjusted R^2 was .181 revealing that EI accounted for .181 of the total variance in stress at workplace. These findings confirm the association between EI and stress at workplace. Therefore, the main hypothesis (*H1*) is supported.

Table 6 showed also that the beta (β) value of each independent variable was negative and significant ($P < .05$), concluding that each dimension of EI (self-awareness, self-management, social awareness, and relation management) negatively influenced the stress at workplace (β= -.363, -.282, -.492, and -.250 respectively, P<.05). This means that the existence of a higher level of each EI dimensions, the experience of a lower level of

stress at workplace. Therefore, all sub-hypotheses (*H1.1, H1.2, H1.3*, and *H1.4*) are supported. Finally, the ranking of the β values (ignoring signs) in Table 6 suggests that social -awareness had had the highest influence on stress at workplace, followed by self-awareness, social-management, and lastly relation-management (β=-.492, -.363, -.282, and -.250 respectively) (Kleinbaum et al., 2008).

Table 6: Summary of Regression Analysis

	Unstandardized Coefficients		Standardized Coefficients	*t*- value	Sig. *P*-value	Collinearity Statistics	
	B	**Std. Error**	**Beta**			**Tolerance**	**VIF**
Constant	2.695	.311		8.670	.000		
Self-Awareness	-.318	.090	-.363	3.535	.001	0.692	1.444
Social-Management	-.210	.071	-.282	2.956	.004	0.696	1.436
Social Awareness	-.311	.126	-.492	-2.475	.016	0.865	1.156
Relation Management	-.263	.111	-.250	2.376	.020	0.565	1.770
Prediction accuracy	*R*=.457 *R²*=.209 Adjusted *R²*=.181						
Significance	F =7.564 *P* value =.000						

Note: Dependent variable: stress at workplace, Significant at *p*-valve <0.05

6- Discussion

The study main purpose was to examine the effect of emotional intelligence on nurses' stress at workplace in Egypt. We proposed one main hypothesis related to the EI bundle and stress at work place. Then we proposed four sub-hypotheses to relate each component of EI to stress at workplace. Quantitative analysis was carried out to achieve the research aims. The results of descriptive analysis (Table 5) showed that Egyptian nurses show a moderate level of EI skills. These findings are in agreement with the claim that there is a lack of emotional competency demonstrated by nurses, specially the new ones, due to the lack of EI training provided and the lack of addressing EI as a main topic in nursing curricula (Michelangelo (2015). In hospitals, it would be very positive for nurses to build training programs that deal with emotional control,

support groups, and networks that would strengthen EI skills and improve dealing with work stress (Kozlowski et al., 2018; Landa et al., 2008).

The findings also showed that nurses in Egypt are experiencing a high level of stress due to the COVID-19 pandemic. One of the possible interpretations is that the COVID-19 pandemic brought more challenges to the Egyptian healthcare sector, as the same as healthcare sectors across the globe, such as providing the necessary equipment, isolation and intensive care units, and supported medicines. Besides, nurses are required to deal with infected patients along with death cases, and staying in the workplace for a long time (14 days) without going home. All these challenges put much stress on nurses in Egypt. These findings strengthen the universal proposal suggested recently (see Arentz et al., 2020; Hu et al., 2020; Talaee et al., 2020; Salari et al., 2020). Therefore, healthcare institutions should take actions to limit nurses' mental disorders during this crisis (Salari et al., 2020). Opportunities should also be provided for nurses to discuss the stress they are experiencing, make suggestions for workplace adaptations, and address the potential sources of organizational intervention during this pandemic (Arnetz et al., 2020). Showing respect and confidence of nurses can also support their attitudes and willing to express work-related concerns (Al-Ahmad Chaar & Easa, 2020).

Our findings supported the relationship between the EI bundle and nurses' stress at workplace (*H1*), nurses' emotional intelligence accounted for 18% of the total variance in their stress at workplace. These findings are in agreement with the universal thesis that suggests that EI helps employees to manage and control their stress, and accordingly improve their overall well-being (Enns et al., 2018; Goswami & Talukdar, 2013; Kikanloo et al., 2019; Landa et.al, 2008; Michelangelo, 2015; Por et al., 2011; Rashid et al., 2016; Rezvani & Khosravi, 2019; Sherafatmandyari et al., 2012). The findings also confirmed the suggestions that employees with a high level of emotional intelligence are usually realistic in what they can/can't do and can effectively regulate their emotions at the workplace (Gohm et al., 2005; Kauts & Saroj, 2012).

We also found a negative relationship between each of the four components that define EI and nurses' stress and workplace (*H1.1, H1.2, H1.3, and H1.4*). this means that the higher level of self-awareness, self-management, social awareness, or relation management, the lower level of stress that nurses experience, and vice versa. In particular, we suggest that a nurse with a high level of self-awareness has the potential to react more positively and optimistically to the stress he/she experiences. These findings were in agreement with the previous related studies (Dulewicz et al., 2003; Hong & lee, 2016; Lazarus, 1999; Sutton, 2016). 2000; Nikolaou & Tsaousis, 2002; Verma, 1996; Welch, 2003). Likewise, nurses with high self-management competences have the potential to regulate their negative emotions under stressful situations. These findings are consistent with the views of Barry and Du Plessis (2007). Having proper social awareness skills enable nurses to interpret the emotional responses of others, to cope with stress, and to take control in maintaining a positive mood. These results are also consistent with the previous research of Carmeli (2003), Güleryüz et al. (2008), and McPheat (2019). Finally, nurses with high relationship management abilities have the potential to cope with the huge amount of stress imposed by the working-relationships, confirming the findings of Klem and Schlechter (2008). The effect size of each component of EI on stress was diverse, positioning social awareness as to begin with arrange, taken after by self-awareness, social-management, and relation management, accordingly. This result supports the view that EI components affect differently employees' emotions and well-being Kleinbaum et al. (2008).

7- Theoretical and Practical Implications

The research findings point out important theoretical and practical implications. Theoretically, this study provides a broader understanding of the relationship between EI and stress at workplace by addressing how each component of EI was related to stress. As mentioned before, most of the related studies consider EI as a bundle when relating it to stress at work. As much as the findings suggest that EI components affect differently emotions and well-being, this opens the door for researcher to carry out more research to provide better understanding of this phenomenon. Although the relationship between EI and stress at workplace was researched in the literature, investigating this relation in

a different context (Egypt, which is intensely shaped by Arab culture) ensures the universal relationship. This study also pioneers research in considering EI and nurses' stress during COVID-19 pandemic as one of the most unusual worldwide health crises in recent times. COVID-19 pandemic affected people mobility across globe (Easa & Bazzi, 2021). This study advances the knowledge of EI and nurses' stress in business & management research, which still limited. As indicated before, this topic was largely addressed in education, nursing, and medicine research.

Practically, this study offers some important implications to healthcare institutions and managers. Egyptian nurses showed a moderate level of EI. Therefore, for the short run, healthcare institutions should provide EI training programs to their nurses to cope properly with the high level of stress they experienced due to COVID-19 pandemic. For the long run, related EI courses in nursing curricula should be provided. Similarly, healthcare institutions should provide EI training programs for the newly licensed nurses (Kozlowski et al., 2018; Landa et al., 2008; Michelangelo, 2015). There are two different points of view about the period or the volume of EI training program. The first one suggests that EI skills are developed slowly (Kaya et al. 2017), and not expected to improve with short-term interventions (Faralli, 2009). Therefore, EI skills is expected to improve after 16 hours of training over one month (Sarabia-Cobo et al., 2017). However, Kozlowski et al. (2018) argue that to achieve a substantial increase in emotional intelligence, prolonged or multiple training sessions are not necessary. In general, developing EI of staff and mangers is essential in attaining a healthy work environment in healthcare organizations and other organizations as well (Prezerakos, 2018).

The findings also showed that Egyptian nurses, like other nurses across the globe, experience high level of stress due to COVID-19 pandemic. Therefore, healthcare institutions should take steps to reduce the mental disorders of nurses during this crisis (Salari et al., 2020). Improving the emotional intelligence of nurses helps them to maintain an effective stress coping strategy, which accordingly improve their well-being (Molero Jurado et al., 2019). Furthermore, strengthening nurses' self-efficacy and perceived social support from coworkers, supervisors,

patients, family, and community enhance nurses to regulate their stress (Lagasse, 2020; Liao et al., 2020; Molero Jurado et al., 2019). Nurses should have the chance to discuss their stress concerns, and to provide suggestions for interventions (Arnetz et al., 2020).

In addition, mangers should think about the way work of nurses is designed and what adjustments can be introduced to reduce work-related stress (Böckerman et al., 2020; Smith & Sainfort, 1989). Nurses' stress at workplace my also reduced by improving their working conditions (Russell et al., 2018), enhancing work-life balance practices (Mullen, 2015), and redefining the healthcare system in terms of policies, rules, procedures, methods of performance appraisal, and compensations (Almazan et al., 2019; Teo & Waters, 2002).

8- Limitations and Directions for Future Research

Like other studies, this study is without limitations. First, our research limited only nurse's EI to regulate their stress at workplace. Therefore, other factors are suggested to be addressed with stress in future research, especially HRM practices e.g. leadership support, compensation issues, work-life balance, and performance appraisal. Second, the research design of this study was cross-sectional based to anticipate of the causality relationship between EI and stress at workplace. But we did not directly ask the participants how this relation occurs. A longitudinal study is recommended to shed the light on this causal relationship. Also, doing qualitative studies on this topic might add more interpretations and explanations for the phenomenon. Third, since we controlled the demographic factors in this research, therefore considering the moderating role of these factors on the relationship between EI and stress is suggested for further research is recommended. For example, it was reported that older people score higher on EI and experience more stress than younger ones do (Nikolaou & Tsaousis, 2002). Finally, we limited the relationship between EI and stress at workplace in the healthcare institutions to only nurses. Therefore, more research on the consequences of COVID-19 on other healthcare workers (e.g. doctors, managers, and other staff), and on other workers from different sectors as well.

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الذكاء العاطفى لأطقم التمريض وضغوط العمل أثناء جائحة كورونا (كوفيد–19): دليل من مصر

د. ناصر فتحي عيسى

ملخص البحث باللغة العربية

مع إنتشــارجائحة فيروس كورونا واجه العاملون بالقطاع الصــحى على مســتوى العالم مزيدا من الضــغوط، وكانت أطقم التمريض (ممرضـين وممرضـات) أكثر تلك الفئات تعرضـا لضـغوط العمل. مع ضـرورة الاهتمام بالصـحة العامة لأطقم التمريض والحد من الضـغوط التى يتعرضـون لها، تهدف الدراسـة الحالية التى تحليل العلاقة مابين الذكاء العاطفى لأطقم التمريض العاملين فى القطاع الصحى المصرى ومستوى ضغوط العمل التى يتعرضون لها نتيجه جائحة كورونا (كوفيد–19). الذكاء العـاطفى تم التعبير عنه من خلال أربعـة أبعـاد رئيســة هى: الوعى الـذاتى، إدارة الـذات، الوعى الاجتمـاعى وإدارة العلاقات.

تم تجميع بيانات الدراسـة من 268 ممرض/ممرضـة من العاملين بالقطاع الصـحى المصـرى فى الفترة مابين أغسـطس و ديسمبر 2020. كما استخدام أسلوب الإرتباط المتعدد لاختبار فروض الدراسة، مع التحقق من جودة المقاييس المستخدمة.

أوضحت نتائج الدراسـة أن أطقم التمريض فى القطاع الصـحى المصـرى يتمتعون بمسـتوى متوسـط من الذكاء العاطفى، وفى المقابل يتعرضـون لمسـتوى مرتفع من ضـغوط العمل نتيجة جائحة كورونا. كذلك أوضـحت الدراسـة أن الأبعاد الأربعة للذكاء العاطفى ترتبط سـلبيا بضـغوط العمل. بمعنى أنه كلما زاد مسـتوى الذكاء العاطفى، بأبعاده الاربعة، لأطقم التمريض فى القطاع الصحى كلما ساعد ذلك على الحد من الضغوط التى يتعرضون فى العمل لها نتيجة جائحة كورونا. التطبيقات النظرية والعملية لنتائج الدراسة تم مناقشتها وكذلك تم عرض حدود البحث واقتراح البحوث المستقبلية فى هذا المجال.

الكلمات الدالة: الذكاء العاطفى، ضغوط العمل، جائحة كورونا (كوفيد–19)، أطقم التمريض، مصر

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