The Relationship between Emotional Intelligence and Workplace Stress among Maternity Nurses

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Abstract

Workplace stress is often reported by nurses working in many fields and particularly in maternity nurses. Nurses working in perinatal units usually faced continuous unpredicted work environment, many crisis and strong emotional tone due to attachment with their clients. Thus, emotional intelligence plays a great role in helping those nurses to regulate their emotions and deal with conflict. ***Objective:*** *Identify emotional intelligence and workplace stress among nurses caring for maternity women.* ***Setting:*** *The study was conducted at El-Shatby Maternity University Hospital and four Family medicine centers.* ***Subjects:*** *A convenient sample of 120 nurses working for at least 2 years in the perinatal units of the previously mentioned settings.* ***Tools:*** *Emotional Intelligence Scale and the Workplace Stress Scale.* ***Results:*** *The results revealed that there is a statistically significant negative correlation between nurses' workplace stress and overall emotional intelligence, age, marital status, working hours per day and the number of cases assigned to each nurse. On further analysis using stepwise multiple regression, the study revealed that self-awareness emerged as the first predictor of workplace stress, and the number of cases assigned to each nurse emerged as the strongest predictor of workplace stress.* ***Conclusion:*** *Emotion intelligence, years of work experience and being married are related to and can predict less perceived workplace stress, while increased workload is related to and can predict more perceived workplace stress.* ***Recommendations:*** *Workplace should offer courses, seminars, conferences, workshops and panels about emotional skills and in-service programs about coping with workplace stress.*

Keywords: Emotional intelligence; Workplace stress; Nurses; Self-awareness; Years of work experience

Introduction

Nurses are subject to workplace stress due to the pressures related to the display and regulation of emotions when dealing with difficult situations in the workplace. They often report job strain ranging from dissatisfaction with the job, role confusion, apathy, burnout and may eventually leave the profession[1]. Job strain may be due to working for long hours, conflicts among colleagues, problems with job shifts and contradictions in life rhythms[2-6]. Lin et al (2013) defined the workplace stress as "the harmful physical and emotional responses that occur when the requirements of the job do not match the capabilities, resources, or needs of the worker"[7]. Nurses who experience early workplace stress are usually physically, emotionally and mentally exhausted. Work related stress for psychiatric nurses were tackled in a previous study in Egypt and was found to cause a moderate level of stress related illnesses among psychiatric nurses[8]. So, it seems useful to explore work related stress and its effect among other groups of nurses.

Nurses caring for perinatal women are subject to high perceived workplace related demands due to the often unscheduled timing, physical performance, professional standards, expectations from childbearing women and their families, and increasingly stressful work environments[9]. The

prevalence of work-related stress among nurses caring for perinatal women in different countries is estimated to be between 10% and 64.9%[10]. In Egypt, antenatal care and post-natal care are provided by MCH centers, while labor and birth are managed in hospitals. Obstetricians are the primary decision makers and nurses caring for maternity women assist during labor, undertake procedures such as, vaginal examinations, measuring blood pressure and fetal heart rate. The medical dominance of maternity care reduces nurses' autonomy in decision making adding to their burden[10].

To overcome stress and perform their caring functions, nurses require cognitive intelligence to provide physical, psychological and emotional care. This care is 80% composed of emotional intelligence[11]. Salovey and Mayer (1990) defined emotional intelligence as the ability to monitor one's own and others' feelings and emotions, to discriminate among them, and to use that information to guide one's thinking and actions [12].

Emotional intelligence includes skills as being able to control one's own impulse and impatience, to fairly regulate mood, to prevent frustration, to have empathy and hope[13]. It also includes competencies and capacities that influence a person's capacity to succeed in the face of every day demands and pressures[14]. According to Law et al. (2004) emotional intelligence is divided into four dimensions namely; self-emotion appraisal, or the ability to understand and express one's own emotion; others' emotion appraisal, or the ability to recognize and understand the emotions of others. Another dimension of EI is the use of emotion, or the ability to use one's emotions effectively by directing them towards useful activities and personal accomplishment. Lastly, the regulation of emotion, or the ability to manage one's own emotions[15]. Thus, emotional intelligence is a set of emotions, impulses, social knowledge and abilities that manage and enhance the individual's general ability to give appropriate responses to environmental stressors. It also help the individual to obtain the best performance within specific aspects are self-awareness which means understanding the individual's abilities and expressing them and social awareness reflecting an awareness toward others, understanding their abilities and cooperation. Other aspects include self-management which is considered an ability of compatibility with change and solving personal and social problems and finally, relationship management[16].

Emotional intelligence has influences on well-being, workplace stress among nurses and on considering factors relevant to organizational efficiency[17]. In view of this, nurses who have high level of emotional intelligence may cope better with stressful situations at work while those who have low level of emotional intelligence may cope poorly with stressful situations[18].

Hence, assessing workplace stress and its relation to emotional intelligence among maternity nurses is crucial to improve women in labor and childbirth satisfaction and maintain organizational efficiency.

Aim of the Study

The aim of this study was to identify emotional intelligence and workplace stress among nurses caring for maternity women.

Research Questions

- What are the levels of emotional intelligence and workplace stress among Egyptian nurses caring for maternity women?
- Is there a relation between nurses' emotional intelligence and their workplace stress?
- Could emotional intelligence, demographic and clinical characteristics of the nurses predict perceived workplace stress?

Materials and Method

Materials

Design: A descriptive correlational design was utilized in this study.

Setting: The study was conducted at El-Shatby Maternity Hospital in Alexandria. The hospital is affiliated to Alexandria University. It is composed of sixteen units. The study was also conducted in 4 Family medicine centers randomly selected from the available centers in Alexandria.

Subjects: A convenient sample of 120 nurses working for at least 2 years in the perinatal units of the previously mentioned settings and providing direct care for pregnant women were the subjects for this study. The number of nurses in each setting were as follows: El-Shatby Maternity University Hospital (90 nurses), Family medicine center Abies 1(10 nurses), Family medicine center Abies 2 (10 nurses), Family medicine center Abies 7(5 nurses), Family medicine center Abies 8 (5 nurses). The sample size of nurses was estimated by using the Epi-Info program, where the following parameters were applied: Prevalence = 50%, Confidence level = 95%, Error level =5%, sample size = 95.

Tools: Data of the present study were collected using the following tools:

Tool I: A socio-demographic and work characteristics interview schedule

It was developed by the researcher to collect basic data about the study subjects such as age, academic preparation, nursing position and years of working experience.

Tool II: Emotional Intelligence Scale (EIS)

The Emotional Intelligence Scale (EIS) was originally developed by Hunsaker (2001) to assess emotional intelligence in workplace[19]. Then, it was adapted by Vanderpol in 2011 to assess the degree of emotional intelligence of different populations[20]. The scale consists of 25 items rated on five-point Likert scale that ranges from 1 to 5, with the following rating criteria; 1= (very slight ability) to 5= (extreme ability).

The EIS includes five components: self-awareness, managing emotions, motivation, empathy, and social skills. Each component comprises five items, with scores of each component ranging between 5 to 25. Scores of 21-25 indicate high workplace emotional intelligence, and between 10 to 20 (moderate), while scores below 10 were considered low workplace emotional intelligence.

The total score of EIS ranges from 25 to 125, with a score ranging from 101 to 125 indicating high workplace emotional intelligence, from 50 to 100 indicating moderate, and below 50 indicating low emotional intelligence.

Tool III: Workplace Stress Scale

The Workplace Stress Scale was developed by The Marlin Company (2007) to measure the perceived workplace stress[21]. The scale consists of 8 items, which are rated on five-points Likert scale that range from 1= (never) to 5= (very often). Items 6, 7 & 8 are reversed score.

The total score of Workplace Stress Scale is ranging from 8 to 40, with a score of 15 or lower indicating relatively calm workplace, from 16 to 20 indicating fairly low workplace stress, from 21 to 25 indicating moderate workplace stress, from 26 to 30 indicating high level of workplace stress and from 31to 40 indicating potentially dangerous workplace stress level.

Method

- Approval of the Ethical Research Committee of Alexandria Faculty of Nursing was obtained before conducting the research.
- An official approval to conduct the study and collect the necessary data was obtained from the medical director of El-Shatby Maternity

University Hospital after explaining the purpose of the study.

- The development of the socio-demographic and work characteristics interview schedule was done by the researchers.
- A jury composed of nine experts in the field of Psychiatric Nursing and Mental health and Obstetric and Gynecological nursing was consulted to examine the content validity of the study tools. Modifications were done accordingly
- A pilot study was done on 10 nurses (Pilot study participants were excluded from the study), to ascertain the clarity and applicability of the study tools and to identify the obstacles that may be faced during data collection. The interview time ranged between 30-45 minute for each subject.
- The reliability of the study tools was ascertained by measuring the internal consistency of their items using the Cronbach alpha coefficient test where Alpha Chronbach for tool II was 0.799 and for tool III was 0.833.

Actual Study:

- Each nurse was first interviewed individually to explain the aim of the study and the study tools. An informed written consent was then obtained from them.
- A second interview was done with each nurse to apply the study tools. This interview lasted between 30-45 minutes according to nurse's ability and cooperation.
- The data were collected over a period of two months starting at the 3rd March 2019 and ending the 28th April 2019

Ethical considerations:

For each recruited subject the following issues were considered:

1. Subject's written informed consent after explanation of research purpose was obtained.
2. Assuring confidentiality of the subject's data was done.
3. Right to voluntary participation of the study subjects and right to withdraw at any time were emphasized.

Statistical Analysis

Data were fed to the computer and analyzed using IBM SPSS software package version 20.0. (Armonk, NY: IBM Corp). Data were analyzed descriptively to obtain number and percentage, means, and standard deviation. Significance of the obtained results was judged at the 5% level. Then bivariate analysis was done using t-test. The correlations between two quantitative variables were assessed using Pearson coefficient test.

Results

Table (1) shows the distribution of the studied nurses according to their socio-demographic and work characteristics. The age of the studied nurses ranged from 21.0 to 59.0 years with a mean age of 35.75±9.**19** years. It was found that more than half (5**2.5**%) of them were in the age group ranging from 21 to less than 35 years. About three quarters of the studied nurses had diploma degree (74.17%); only 20.83% of them had bachelor or post-graduate degree. It was also noticed from this table that 55.83% of the studied nurses lived in rural areas, 82.5% of them were married and 55.83% of them reported that their monthly income was not enough.

Regarding years of work experience, 55.83% of the nurses had from 10 to less than 25 years of work experience with a mean of 16.32±8.61. Most of the nurses (83.33%) were working for 8 hours/day. Regarding working shift, 91.67% of the nurses were working in the morning shifts. Finally, regarding the number of perinatal

women assigned to each nurse, 82.5% of the nurses were assigned from 5 to 8 cases.

Table (2) shows the distribution of the studied nurses according to their levels of emotional intelligence and workplace stress. It can be noted that 71.67% of the studied nurses had high overall emotional intelligence with a total mean score of 55.88±21.97, while only 20.0% of them had moderate emotional intelligence. The mean scores of the five subscales of emotional intelligence; Self-awareness, managing emotions, motivation, empathy and social skills were 10.75±3.24, 9.77±5.10, 11.60±4.81, 12.13±5.03 and 11.63±4.5 respectively. The table also illustrates that 49.17% and 40.83% of the studied nurses had high and moderate levels of workplace stress respectively with a total mean score of 28.32 ±7.25.

Table (3) illustrates correlation between nurses' workplace stress and their emotional intelligence. The table reveals that a statistically significant negative correlation was found between nurses' workplace stress and overall emotional intelligence (r=-0.317, p=0.001). It can also be noted that there is a statistically significant negative correlation between nurses' workplace stress and Self-awareness , Managing emotions, Motivation, Empathy & Social skills (r=-0.374, p=0.001, r=-0.263, p=0.004, r=-0.273, p = 0.003, r=-0.316, p=0.001 & r=-0.327, p=0.001) respectively.

Table (4) shows the relation between demographic characteristics, emotional intelligence and workplace stress. The table illustrates that there is a statistically significant difference between age and workplace stress (F=3.393, p=0.037). on further analysis using post hoc test, it can be noticed that nurses in the age group ranging between 21 to less than 35 had higher workplace stress (29.90±7.50) than those in the age group ranging from 35 to less than 45 (26.24±5.72) with a statistically significant difference (p=0.014). The table also shows that there is a statistically significant difference between marital status and workplace stress F=10.864. p=<0.001. On further analysis using post hoc test, nurses who were single showed higher workplace stress (36.31±3.33) than those who were married (27.54±6.99) or those who were divorced or widowed (25.00±7.05) with a statistically significant difference (p=<0.001 and 0.001 respectively).

Regarding emotional intelligence (EI), the table shows that there was a statistically significant correlation between EI and nurses' level of education regarding self-awareness (F=7.074, p=0.001), managing emotions (F=5.364, p=0.006), motivation (F=4.590, p=0.012*), social skills (F=3.187, p=0.045) and overall EI (F=4.499, p=0.013*). On further analysis using the post hoc test, it can be noticed that technical nurses has higher self-awareness, managing emotion, motivation, social skills, and overall EI than diploma nurses (p=0.004, 0.008, 0.017, 0.052 and 0.018 respectively) and technical nurses has higher self-awareness, managing emotion, motivation, social skills, and overall EI than bachelor nurses (p=0.001, 0.004, 0.009, 0.037 and 0.010 respectively).

Table (5) shows the relation between work characteristics, Emotional intelligence and Nurses' Workplace stress. It can be noticed from the table that workplace stress is correlated with family income (F=10.831, p=<0.001). After further analysis using the post hoc test, nurses who reported that their family income was more than enough had higher workplace stress 37.60±0.84 than those who reported a family income just enough 28.19±6.52 and not enough 27.01±7.26 with a statistical significance (p=<0.001). Additionally, workplace stress was correlated with years of work experience, (F=14.452, p<0.001). On further analysis using post hoc test, nurses who had less than 10 years of work experience (32.30±6.78), had higher workplace stress than those who had 10 to less than 25 (25.88±6.21), and those who had from 25 to 37 years of work experience (24.33±8.31)

with a statistical significance (p=<0.001 and 0.016 respectively). There was also a statistically significant correlation between nurses' workplace stress and working shifts (F=3.259, p=0.042). On further analysis using post hoc test, it can be noticed that nurses who worked night shifts had higher work place stress 34.0±4.65 than those who worked in the Evening shifts 30.60±7.70 with a statistical significance (p=0.049). Finally, there was a statistically significant correlation between workplace stress and the number of cases assigned to each nurse (t=3.621, p=0.001) where nurses who were assigned from 5 to 8 cases had higher work place stress 29.15±7.39 than those who were assigned from 2 to 4 cases 24.38±4.98.

Regarding emotional intelligence, the table shows that self-awareness, managing emotions, motivation, empathy, social skills, and overall EI were significantly correlated with family income (F= 6.508, p=0.002); 8.158, p=<0.001); 8.295, p=<0.001); 8.681,p=<0.001), 7.739, p=0.001) and 8.582, p=<0.001 respectively). After further analysis using the post hoc test, nurses who reported that their family income was not enough had higher self-awareness (11.66±4.00), managing emotions (11.30±5.90), motivation (13.06±5.59), empathy (13.72±5.64), social skills (13.00±5.30), and overall EI (62.73±25.55) than those who reported a family income just enough (9.56±1.01, 7.51±2.34, 9.47±2.13, 9.93±2.94, 9.74±2.35, and 46.21±9.85) with a statistical significance (p=0.002, or <0.001). Additionally, self-awareness, managing emotions, motivation , empathy, social skills, and overall EI were significantly correlated with the number of working hours per day (t=6.090, p=<0.001; t=6.120, p=<0.001; t=6.095, p=<0.001; t=7.098, p=<0.001, t=6.543, p=<0.001), and t=6.652, p=<0.001 respectively) where those who worked 8 hours per shift had higher means that those who worked 12 hours per shift. Finally, there was a statistically significant correlation between nurses' self-awareness, managing emotions, motivation, empathy, social skills, and overall EI, and working shifts (F=12.094, p=<0.001; F=34.625, p=<0.001; F=28.433, p=<0.001); F=24.164, p=<0.001); F=20.066, p=<0.001); and F=26.129, p=<0.001 respectively). On further analysis using post hoc test, it can be noticed that nurses who worked evening shifts had higher self-awareness, managing emotions, motivation , empathy, social skills, and overall EI than those who worked in the morning or at night with a statistical significance (p=0.014 or <0.001).

Table (6) illustrates the prediction of workplace stress using emotional intelligence subscale, sociodemographic and clinical characteristics using a hierarchical multiple regression analysis. Preliminary analyses were performed to ensure there were no violation of the assumption of normality, linearity, multicollinearity and homoscedasticity. Self-awareness subscale of EI was entered into step 1 and the model showed that R^2 = .299 where (F=50.353, p<.001). This indicates that in this model, 29.9% of the variance of workplace stress was explained by the regression on self-awareness. In predicting workplace stress, it is found that workplace stress was significantly negatively associated with self-awareness, where (β=-.112, t=7.096, P=0.000). Thus, the final equation will be "Y: = constant + $\beta_1 X_1$ "

Workplace stress = 3.597 - .112 (**self-awareness)**

In step 2, years of work experience were entered into the equation. Model 2 had two variables where R2 = .405 where (F=39.789, p=<.001). This indicates that in this model, 40.5% of the variance of workplace stress was explained by the regression on self-awareness and years of work experience. In predicting workplace stress, it is found that workplace stress was significantly negatively associated with self-awareness (β=-.100, t= 6.722, p=<.001) and years of work experience where, (β=-.384, t=4.559, P=<.001). This indicates that higher scores on workplace stress is associated with less self-awareness and less years of work

experience. The value of beta for years of work experience was higher than self-awareness. This indicates that when the two variables were entered into the model, years of work experience is a more effective predictor than self-awareness. Thus, the final equation will be "Y: = constant + β1 X1 + β2 X2"

Workplace stress = 4.103 - .100 (self-awareness)-.384(years of work experience)

In step 3, the number of cases assigned to each nurse was entered into the equation. Model 3 had three variables where R2= .449 where (F=31.549, p=<.001). This indicates that in this model, 44.9% of the variance of workplace stress was explained by the regression on self-awareness, years of work experience and the number of cases assigned to each nurse. In predicting workplace stress, it is found that workplace stress was significantly negatively associated with self-awareness (β=-.105, t=7.256, p=<.001) and years of work experience where, (β =-.349, t=4.242, P=<.001) and positively correlated with the number of cases assigned to each nurse (β=.373, t=3.062, P=.003). This indicates that higher scores on workplace stress is associated with less self-awareness, less years of work experience and increased number of cases assigned to each nurse. The value of beta for number of cases assigned to each nurse was higher than self-awareness and years of work experience. This indicates that when the three variables were entered into the model, the number of cases assigned to each nurse is a more effective predictor than self awareness, and years of work experience. Thus, the final equation will be

Y: = constant + β1 X1 + β2 X2+ β3 X3

Workplace stress = 3.417 - .105 (self-awareness)-.349 (years of work experience) + .373 (number of cases assigned to each nurse)

In step 4, marital status was entered into the equation. Model 4 had four variables where R2= .476 where (F=26.080, p=<.001). This indicates that in this model, 47.6% of the variance of workplace stress was explained by the regression on self-awareness, years of work experience, the number of cases assigned to each nurse and marital status. In predicting workplace stress, it is found that workplace stress was significantly negatively associated with self-awareness (β=-.105, t= 7.421, p=<.001), years of work experience where (β=-.248, t=2.741, P=.007) and Marital status (β= -.292, t=2.404, p= .018), and positively correlated with the number of cases assigned to each nurse (β=.376, t=3.155, P=.002). This indicates that higher scores on workplace stress is associated with less self-awareness, less years of work experience and being single. Also, higher scores on workplace stress is associated with increased number of cases assigned to each nurse. The value of beta for number of cases assigned to each nurse was higher than self-awareness, years of work experience and marital status. This indicates that when the four variables were entered into the model, the number of cases assigned to each nurse is a more effective predictor than self-awareness, years of work experience and marital status. Thus, the final equation will be

Y: = constant + β1 X1 + β2 X2+ β3 X3+ β4 X4

Workplace stress = 3.417 - .105 (self-awareness) - .349 (years of work experience) - .292 (marital status) + .373 (number of cases assigned to each nurse).

Discussion

The concept of emotional intelligence is normally associated with clinical practice particularly in the scope of nursing. It is one of the main elements responsible for shaping performance[22]. Yet, nurses performance in workplace especially in perinatal units involves continuous workplace stress because of their strong relations with clients and their crisis. Apparently, complications or losses that occur during childbirth negatively affect the maternity nurses. Moreover, the literature reveals that a significant proportion of maternity nurses

experience clinical post-traumatic stress [23]. Accordingly, the aim of the present study was to investigate the relationship between EI and workplace stress among maternity nurses.

The results of the present study revealed that most of the studied nurses had low emotional intelligence. This may reflect that the studied nurses are not aware of their own emotion and those of others. Accordingly, they are unable to manage different clinical situations calmly and effectively[24]. These results are congruent with Saeed et al., 2013, Bakr and Safaan 2012, and Codier et al., 2008 who reported that the emotional intelligence of their studied nurses was of low or average level and that nurses need assistance and instructions regarding their emotional intelligence[25-27]. Possible explanations for these findings are the nurses' tension because of lack of workplace courses, seminars, conferences, workshops and panels about emotional abilities. Another reason may be that more than half of the studied subjects are below the age of 35 which may relatively reflect on staff EI and performance[28,29]. Furthermore, nursing educational background is focusing more on hard skills (technical and professional skills) than soft skills (characteristics of the personality) training as EI[30]. Another explanation for the obtained results may be the multiple stressors encountered by the studied nurses as most of them are married and have a lot of responsibilities. In addition, most of the nurses are assigned 5 to 8 patients per shift. On the other hand, several other studies showed that nurses' emotional intelligence is either moderate or high[27, 31,32].

Results of the present study also show that most of the studied nurses had high and moderate levels of workplace stress. In fact, labor and postpartum units are considered highly paced environment characterized by tiredness and a lot of emergency situations. Moreover, the increased turnover of perinatal women per day may be another source of stress[31]. Another explanation may be that most of the studied nurses have low level of emotional intelligence which may have a modulating effect on stress. In fact, perception and understanding of one's own emotion and those of others, may allow a person to develop emotional regulation processes that would help alleviate the negative effect of stress[33].

These findings agreed with the study of Rakhshani et al (2018) who stated that most nurses in their study experienced moderate levels of stress[34]. Along the same line, Sharma et al (2014) also found that most of their studied nurses reported that they had no time for rest and were suffering from moderate-to-severe stress. They also found their job tiring[35]. Another study by Ghabaee et al (2016) found that nurses suffered a high level of stress[36]. The obtained results in the above studies were explained by the fact that nursing profession is stressful and nurses confront several stressors in their work environment which include overwork, individual conflicts, shift work, dealing with deaths and lack of mental support[37-39].

The present study also showed a statistically significant negative correlation between nurses' workplace stress and emotional intelligence. This result may reflect that nurses with higher EI have the ability to effectively deal with their emotions in the workplace which help them cope with workplace stress[40]. Landa et al., 2008; Fariselli., 2008; Hong & Lee., 2016 similarly reported an inverse relationship between emotional intelligence and perceived stress. EI seems to be a protective factor against stress and a facilitative factor for health promotion[41-43]. It was also reported that higher EI act as a buffer to the potential negative effects of stressors and promote employee adjustment[44]. EI additionally helps in understanding how to manage conflicts[45]. High level of emotional intelligence requires the presence of certain skills in the nurse such as problem solving, interpersonal relations, and stress management and consequently, the level of

EI play a role in conflict management in the workplace[46]. In addition, Akinwolere (2016) reported that more experienced nurses could perceive stressors and stress more than younger nurses. The explanation given was that the older the age of the nurse, the more likely the nurse perceived an increase in workload. It is argued that as the nurse became more experienced, she or he was given more responsibilities that increased work demands[47]. It is worth mentioning that in the present study, age was not correlated with emotional intelligence contrary to other studies in the literature where age influence emotional maturity and EI increases with age[46].

Regarding the prediction of workplace stress, this study findings revealed that self-awareness (as a subscale of EI) emerged as the first predictor of workplace stress. It is argued that self-awareness involves competency in understanding one's own and others' emotions. This in turn consists of knowing the causes and consequences of different emotions as well as being able to differentiate between varying emotions. Good EI levels allow to harness emotions to guide cognitive activities and solve problems, for example, by drawing on positive moods to enhance creative thoughts[46]. EI is strongly linked to the individual's characteristics and their personality (soft skills) which differ from technical and professional skills (hard skills). EI is a reliable predictor of success, high work efficacy, quality of life, self-awareness, relationship management and decision making[46]. It was also reported that EI was a better predictor of how one perceives work related stress[11]. In the same line, Decker (1997) reported that personal disposition predicted psychological distress in nurses[48].

The regression model in this study revealed that the next predictor of less perceived workplace stress was the years of work experience. This is supported by finding that younger nurses showed a significantly positive correlation with perceived workplace stress (table). A possible explanation for this is that with increased years of work experience, the nurse is familiar with potential stress loading events as conflicts or work-related crisis, so she/he is trained to accommodate with these situations. Also, it may be possible that as the years of experience increase in nursing, nurses develop a sense of increased control as there is perceived self-efficacy and control[49]. Accordingly, it was reported that nursing experience could contribute to external mediating factors in stress[47]. On the other hand, Lambert et al 2007 reported that more experienced nurses could perceive stress more than younger nurses because more experienced nurses are given more responsibilities that increased their work demands[50].

The number of cases assigned to each nurse represents the strongest predictor in the final model and the third model. This may be because it reflects increased workload which adds to workplace stress. Similarly, it was reported that the most significant predictor of psychological stress in workplace is workload[47].

Conclusion

Based on the obtained results, it can be concluded that EI perception is correlated to perceived workplace stress in maternity nurses. Further, perceived workplace can be predicted by self-awareness subscale of EI, years of work experience, the number of cases assigned to each nurse and marital status.

Recommendations

- Workplace should offer courses, seminars, conferences, workshops and panels about emotional skills and in-service programs about coping with workplace stress.
- Mood management courses should be included in the curriculum of nursing students.
- There is a need for training programs designed to improve emotional intelligence among nurses to manage conflicts among staff, which are an inevitable in any workplace.
- Research efforts in nursing and hospital administrations may focus on reducing and eliminating the frequency of stressors.
- Additional research might explore the intrinsic stressors and other extrinsic stressors that Ns could take to the workplace, personal life stressors outside work.

Table (1): Distribution of studied the studied nurses according to their socio demographic and work characteristics

Socio-demographic and work characteristics	No (120)	%
Age (year):		
▪ 21-	63	52.50
▪ 35-	33	27.50
▪ 45- 59	24	20.00
Min. – Max.	21.0 – 59.0	
Mean & SD:	35.75 ± 9.19	
level of education:		
▪ Diploma	89	74.17
▪ Technical	6	5.00
▪ Bachelor or post-graduate degree	25	20.83
Residence:		
▪ Rural	67	55.83
▪ Urban	53	44.17
Marital status:		
▪ Single	13	10.83
▪ Married	99	82.50
▪ Divorced / Widowed	8	6.67
Family income/month:		
▪ More than enough	10	8.33
▪ Just enough	43	35.83
▪ Not enough	67	55.84
Years of work experience:		
▪ <10	47	39.17
▪ 10-	67	55.83
▪ 25- 37	6	5.00
Min. – Max.	3.0 – 37.0	
Mean & SD:	16.32 ± 8.61	
Working hours/day:		
▪ 8	100	83.33
▪ 12	20	16.67
Working shift *:		
▪ Morning	110	91.67
▪ Evening	30	25.00
▪ Night	16	13.33
Number of cases assigned to each nurse:		
▪ 2-4	21	17.50
▪ 5-8	99	82.50

* *More than one answer*

Table (2): Distribution of studied nurses according to their levels of emotional intelligence and workplace stress

Va4riables (n= 120)		Level	Range	No.	%	Mean score
Emotional intelligence (EI)	Self-awareness	Low	9.0 – 9.0	76	63.33	10.75 ± 3.24
		Moderate	10.0 – 16.0	38	31.67	
		High	21.0 – 23.0	6	5.00	
	Managing emotions	Low	7.0 – 7.0	92	76.67	9.77 ± 5.10
		Moderate	18.0 – 18.0	22	18.33	
		High	21.0 – 23.0	6	5.00	
	Motivation	Low	9.0 – 9.0	92	76.67	11.60 ± 4.81
		Moderate	19.0 – 19.0	20	16.67	
		High	23.0 – 23.0	8	6.66	
	Empathy	Low	9.0 – 9.0	86	71.67	12.13 ± 5.03
		Moderate	19.0 – 19.0	16	13.33	
		High	21.0 – 21.0	18	15.00	
	Social skills	Low	9.0 – 9.0	88	73.33	11.63 ± 4.56
		Moderate	17.0 – 17.0	20	16.67	
		High	22.0 – 22.0	12	10.00	
Overall emotional intelligence		Low	43.0 – 112.0	10	8.33	**55.88 ± 21.97**
		Moderate	43.0 – 43.0	24	20.00	
		High	43.0 – 43.0	86	71.67	
Workplace stress		Low	17.0 – 20.0	12	10.00	28.32 ± 7.25
		Moderate	21.0 – 25.0	49	40.83	
		High	26.0 – 40.0	59	49.17	

Table (3): Correlation between studied nurses' workplace stress and their emotional intelligence

Emotional intelligence	Nurses' Workplace stress	
	R	P
Self-awareness	-0.374*	<0.001*
Managing emotions	-0.263*	0.004*
Motivation	-0.273*	0.003*
Empathy	-0.316*	<0.001*
Social skills	-0.327*	<0.001*
Overall emotional intelligence	**-0.317***	**<0.001***

r: Pearson coefficient *: Statistically significant at $p \leq 0.05$

Table (4): Relation between socio demographic characteristics, Emotional intelligence (EI) and Nurses' Workplace stress

Socio-demographic and work characteristics		Emotional intelligence						Nurses' Workplace stress
		Self-awareness	Managing emotions	Motivation	Empathy	Social skills	Overall	
Age (year):	▪ 21-	10.56± 2.31	10.14 ± 5.01	11.98 ± 4.80	12.49 ± 5.19	11.86 ± 4.37	57.03 ± 21.24	29.90 ± 7.50
	▪ 35-	10.88± 4.45	9.55 ± 5.56	11.30 ± 5.03	11.06 ± 4.46	11.06 ± 4.55	53.85 ± 23.81	26.24 ± 5.72
	▪ 45- 59	11.08± 3.50	9.08 ± 4.80	11.00 ± 4.64	12.67 ± 5.33	11.83 ± 5.16	55.67 ± 21.97	27.00 ± 7.72
F(p)		0.263(0.769)	0.413(0.662)	0.446(0.641)	1.045(0.355)	0.355(0.702)	0.226(0.798)	3.393*(0.037*)
21 vs 35								0.014*
21 vs 45								0.208
35 vs 45								0.917
Level of education:	▪ Diploma	10.75 ± 3.13	9.63 ± 4.96	11.52 ± 4.78	12.06 ± 5.08	11.54 ± 4.63	55.49 ± 21.91	27.89 ± 7.12
	▪ Technical	15.00 ± 6.45	16.00 ± 7.32	17.00 ± 6.45	16.33 ± 5.75	16.00 ± 5.87	80.33 ± 31.17	30.33 ± 9.65
	▪ Bachelor or post-graduate degree	9.72 ± 1.37	8.76 ± 4.12	10.60 ± 3.74	11.40 ± 4.36	10.92 ± 3.49	51.40 ± 16.15	29.36 ± 7.21
F(p)		7.074*(0.001*)	5.364* (0.006*)	4.590* (0.012*)	2.422(0.093)	3.187* (0.045*)	4.499* (0.013*)	0.644(0.527)
Diploma vs Technical		0.004*	0.008*	0.017*		0.052	0.018*	
Diploma vs Bachelor		0.305	0.716	0.662		0.815	0.675	
Technical vs Bachelor		0.001*	0.004*	0.009*		0.037*	0.010*	
Residence:	▪ Rural	11.87±3.90	11.30±5.90	13.06±5.59	14.01±5.65	13.24±5.29	63.48±25.19	27.52±7.65
	▪ Urban	9.34±1.07	7.83±2.93	9.75±2.67	9.75±2.67	9.60±2.13	46.28±11.46	29.32±6.64
t(p)		5.071* (<0.001*)	4.202* (<0.001*)	4.264* (<0.001*)	5.452* (<0.001*)	5.121* (<0.001*)	4.975* (<0.001*)	1.355(0.178)
Marital status:	▪ Single	9.62 ± 1.50	8.69 ± 4.13	10.54 ± 3.76	10.54 ± 3.76	10.23 ± 3.00	49.62 ± 16.15	36.31 ± 3.33
	▪ Married	10.92 ± 3.42	9.91 ± 5.24	11.75 ± 4.97	12.35 ± 5.14	11.77 ± 4.61	56.70 ± 22.52	27.54 ± 6.99
	▪ Divorced / Widowed	10.50 ± 2.78	9.75 ± 5.09	11.50 ± 4.63	12.00 ± 5.55	12.25 ± 6.02	56.00 ± 24.07	25.00 ± 7.05
F(p)		0.954(0.388)	0.323(0.725)	0.360(0.698)	0.747(0.476)	0.727(0.485)	0.593(0.554)	10.864* (<0.001*)
Single **vs** Married								<0.001*
Single **vs** Divorced / Widowed								0.001*
Married **vs** Divorced / Widowed								0.561

t: Student t-test F: F for ANOVA test and pairwise comparison Post Hoc Test (Tukey) *: Statistically significant at $p \leq 0.05$

Table (5): Relation between work characteristics, Emotional intelligence (EI) and Nurses' Workplace stress

Socio-demographic and work characteristics		Emotional intelligence						Nurses' Workplace stress
		Self-awareness	Managing emotions	Motivation	Empathy	Social skills	Overall	
Family income/month:	▪ More than enough	9.80 ± 1.69	9.20 ± 4.64	11.00 ± 4.22	11.00 ± 4.22	10.60 ± 3.37	51.60 ± 18.13	37.60 ± 0.84
	▪ Just enough	9.56 ± 1.01	7.51 ± 2.34	9.47 ± 2.13	9.93 ± 2.94	9.74 ± 2.35	46.21 ± 9.85	28.19 ± 6.52
	▪ Not enough	11.66 ± 4.00	11.30 ± 5.90	13.06 ± 5.59	13.72 ± 5.64	13.00 ± 5.30	62.73 ± 25.55	27.01 ± 7.26
F(p)		6.508* (0.002*)	8.158* (<0.001*)	8.295* (<0.001*)	8.681* (<0.001*)	7.739* (0.001*)	8.582* (<0.001*)	10.831* (<0.001*)
More than enough **vs** Just enough		0.973	0.580	0.602	0.796	0.840	0.739	<0.001*
More than enough **vs** Not enough		0.186	0.407	0.377	0.213	0.234	0.255	<0.001*
Just enough **vs** Not enough		0.002*	<0.001*	<0.001*	<0.001*	0.001*	<0.001*	0.464
Years of work experience:	▪ <10	10.23 ± 1.86	9.81 ± 4.85	11.55 ± 4.41	12.06 ± 4.77	11.38 ± 3.70	55.04 ± 19.07	32.30 ± 6.78
	▪ 10-	10.88 ± 3.61	9.57 ± 5.12	11.45 ± 4.88	12.10 ± 5.18	11.66 ± 4.93	55.66 ± 22.91	25.88 ± 6.21
	▪ 25- 37	13.33 ± 5.96	11.67 ± 7.23	13.67 ± 7.23	13.00 ± 6.20	13.33 ± 6.71	65.00 ± 33.31	24.33 ± 8.31
F(p)		2.625(0.077)	0.465(0.630)	0.585(0.559)	0.093(0.911)	0.484(0.617)	0.550(0.578)	14.452 (<0.001*)
<10 **vs** 10-								<0.001*
<10 **vs** 25- 37								0.016*
10- **vs** 25- 37								0.844
Working hours/day:	▪ 8	11.10±3.45	10.32±5.43	12.12±5.12	12.76±5.30	12.16±4.83	58.46±23.24	27.76±7.39
	▪ 12	9.0±0.0	7.0±0.0	9.0±0.0	9.0±0.0	9.0±0.0	43.0±0.0	7.39±5.90
t(p)		6.090* (<0.001*)	6.120* (<0.001*)	6.095* (<0.001*)	7.098* (<0.001*)	6.543* (<0.001*)	6.652* (<0.001*)	2.209* (0.030*)
Working shift:	▪ Morning	10.69±3.32	9.42±4.93	11.29±4.68	11.84±4.90	11.44±4.56	54.67±21.61	28.05±7.23
	▪ Evening	10.87±3.69	10.27±5.63	11.93±5.03	11.93±4.98	11.47±4.31	56.47±23.15	30.60±7.70
	▪ Night	9.0±0.0	7.0±0.0	9.0±0.0	9.0±0.0	9.0±0.0	43.0±0.0	34.0±4.65
F(p)		12.094* (<0.001*)	34.625* (<0.001*)	28.433* (<0.001*)	24.164* (<0.001*)	20.066* (<0.001*)	26.129* (<0.001*)	3.259* (0.042*)
Morning **vs** Evening		<0.001*	<0.001*	<0.001*	<0.001*	<0.001*	<0.001*	0.930
Morning **vs** Night		0.714	0.652	0.753	0.981	0.971	0.879	0.053
Evening **vs** Night		0.014*	<0.001*	<0.001*	<0.001*	<0.001*	<0.001*	0.049*
Number of cases assigned to each nurse:	▪ 2-4	10.14±2.01	9.10±4.43	10.90±4.02	12.24±5.27	11.29±11.29	53.67±18.54	24.38±4.98
	▪ 5-8	10.88±3.44	9.91±5.24	11.75±4.97	12.11±5.01	11.71±4.74	56.35±22.69	29.15±7.39
t(p)		0.945(0.347)	0.662(0.509)	0.727(0.468)	0.105(0.917)	0.383(0.702)	0.507(0.613)	3.621*(0.001*)

t: Student t-test F: F for ANOVA test and pairwise comparison Post Hoc Test (Tukey) *: Statistically significant at $p \leq 0.05$

Table (6): Prediction of workplace stress using emotional intelligence subscale, sociodemographic and clinical characteristics

	B	SE	Beta	t	p	95% CI	
						Lower	Upper
Model 1							
Self-awareness	-0.112	0.016	-0.547	7.096*	<0.001*	-0.143	-0.081
R^2 =0.299 and adjusted R^2 = 0.293							
Model 2							
Self-awareness	-0.100	0.015	-0.487	6.722*	<0.001*	-0.129	-0.071
Years of work experience	-0.384	0.084	-0.331	4.559*	<0.001*	-0.551	-0.217
R^2 =0.405 and adjusted R^2 = 0.395							
Model 3							
Self-awareness	-0.105	0.014	-0.511	7.256*	<0.001*	-0.134	-0.076
Years of work experience	-0.349	0.082	-0.300	4.242*	<0.001*	-0.511	-0.186
Number of cases assigned to each nurse	0.373	0.122	0.214	3.062*	0.003*	0.132	0.614
R^2 = 0.449 and adjusted R^2 = 0.435							
Model 4							
Self-awareness	-0.105	0.014	-0.513	7.421*	<0.001*	-0.133	-0.077
Years of work experience	-0.248	0.091	-0.214	2.741*	0.007*	-0.428	-0.069
Number of cases assigned to each nurse	0.376	0.119	0.216	3.155*	0.002*	0.140	0.613
Marital status	-0.292	0.121	-0.184	2.404*	0.018*	-0.532	-0.051
R^2 =0.476 and adjusted R^2 = 0.457							

Dependent Variable: Workplace stress

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