

## The Effect of Work Stress Management Program on Staff Nurses' Job Satisfaction.

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**Abstract:** Background: Intensive Care Unit nurses' stress follows a pattern of reactions that occurs when nurses are presents with work demands not matched to their knowledge, skills or abilities and which challenge their ability to cope. Therefore, ICU nurse should not be left to acquire this stress because the consequences will be job dissatisfaction, reductions in the quality of care and patient satisfaction, guilty, deterioration in the nurse's health, abandoning critical care as a nursing specialty and great effects on the clinical practice and the personal lives of nurses who work in critical care environments. **Aim of the study:** The present study aimed to examine the effect of work stress management program on staff nurses' job satisfaction. **Research Design:** A quasi-experimental (pre/post-test) design was used to conduct the current study. **Study Setting:** The study was conducted in critical care units at Benha University Hospital, Egypt. **The study sample:** All the available staff nurses (128) who working in the above-mentioned setting. **Tools of data collection:** Three tools were utilized namely; Self-assessment Knowledge Questionnaire, work stress self-administers questionnaire and job satisfaction questionnaire. **Results:** There were highly statistical significant improvement in staff nurses' level of work stress and job satisfaction after implementation of program. In addition, there was negative statistical significant correlation between work stress and staff nurses' job satisfaction through program phases. **Conclusion:** The study concluded that work stress management program was effective program on enhancing of staff nurses' job satisfaction. **Recommendations:** It is suggests that psychologists and psychiatrists should help the staff in coping with work stress by developing educational methods, courses, as well as different and periodic workshops considering the proof of effectiveness of stress management training and stressful work conditions and organizations should create an environment that encourages workers to use more positive coping strategies when experiencing stress.

**Key words:** work stress, management program, staff nurses, job satisfaction.

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### I. Introduction

Defining the term stress and selecting a proper definition of stress can be challenging even for those who acknowledged as psychology experts in the field of stress, stress management, and stress relief. For many of those who study the stress, the classification of stress has often remained a complicated process. The term stress has various meaning for researchers in different disciplines<sup>1</sup>. Stress is "the non-specific response of the body to any demand for change, stress is a perception. It is the demands that are imposed upon us because there are too many alternatives." Moreover, stress known as the connection between a person and the environment when the end recognized as risks to her/his well-being<sup>2</sup>.

Work stress in nursing is the nurses' sense of under achievement and poor success on the job. It is generally known to be straight linked to reduced productivity as well as to low personal well-being status. On the other hand, job satisfaction in nursing refers to doing a job with joyful, doing it well, and being rewarded for one's efforts. Job satisfaction further implies enthusiasm and happiness with one's work. Job satisfaction is the crucial ingredient that drives to recognition, revenue, raise, and the execution of other goals that lead to a sense of accomplishment<sup>3</sup>.

Working in critical care units is extremely challenging, critically ill patients have a higher acuity of illness than other patients in medical/surgical units<sup>4</sup>. It is necessary for critical care nurses to have comprehensive knowledge of emergency management, diagnoses, monitoring in addition to proficient skills of assessment, problem solving, and decision-making<sup>5</sup>. Work stress may significantly affect nurses' physical and psychological health. It increases the probability of anxiety, depression, cardiovascular, and locomotor diseases. These negatively affect nurses' quality of life. Occupational stress decreases compassion to patients, increases rate of errors, and decreases the nurse's job satisfaction<sup>6</sup>.

Furthermore, nursing is a vital element of the health care system, and nurses' job satisfaction is a high-demand research area. Therefore, several studies confirm that nursing is known as a stressful occupation. Stress has an unfavorable influence on individuals in terms of health, well-being, and job dissatisfaction. Likewise, stress has an adverse impact on organizations in terms of absenteeism and turnover, which in turn may affect the quality of patient care<sup>7</sup>. Studies on stress in nursing have classified a variety of stressors that depend on clinical practice<sup>8</sup>.

Therefore, it is necessary to raise the nurses' job satisfaction because this has the possibility to enhance patients' observations of care nature and secure enough nursing workforce. The complicated relationships and predictors of job satisfaction provide a more extensive understanding of the composite aspect of job satisfaction, which in turn may support the development of practical strategies to approach the nursing shortage and boost the quality of patient care<sup>9</sup>.

Therefore, work stress and job satisfaction among nurses have been a broad interest for researchers globally because of the ongoing nurse shortage and the high turnover rate. Job satisfaction has surveyed as the most active predictor of nurses' retention, and the loss of nurses could decrease through establishing the management of their job satisfaction<sup>10</sup>. Thus, the shortage of nurses is rapidly growing to become a global challenge. The lack of staff nurses is due to nurses leaving the hospital for various reasons such as the reduction of job satisfaction, and scarcity in the number of trained nursing professionals compared to the market demand. Nurses may leave if they are not satisfied<sup>11</sup>.

However, it is possible to take the job dissatisfaction situation under control. Various types of studies for many years attempting to study more about stress and burnout and techniques of improving and preventing. The American Psychological Association recommends a range of ways, such as changing the working environment to help to reduce stress. Also, workloads in the same line as a worker's abilities and resources that determined the worker's roles and duties, communication, and possibilities for social interaction among employees. Each organization could have its own stress-reducing program, according to the organization system and resources<sup>12</sup>.

Although through elimination of stress is impossible, individuals can still learn its management. Relevant literature has regarded some interventions as effective to promote feelings of well-being together with adaptive mechanisms for reducing stress and risk of burnout<sup>13</sup>. A review of the relevant literature has shown that training of skills of coping with stress, as an enabler factor can be effective in mitigating the levels of stress and anxiety. In a review study on the impact of stress management, it found that a combination of self-care programs including instruction of relaxation, social support, cognitive techniques, sports, and music is effective<sup>14</sup>.

In addition,<sup>15</sup> reported that, stress management interventions have been proposed, and their effectiveness in reducing stress and improving physical and mental health among medical workers has been investigated. Communication skills training, especially assertion training, has been investigated and has shown effectiveness in improving medical workers' communication skills and reducing their stress.

Furthermore,<sup>16</sup> explain one of the effective stress management techniques that use not only for helping with a coping, but also for the prevention as a daily routine. The stress management techniques include physical activity such as individual and group training of replacement routines, communication, and active listening. It also covers methods of dissociating from the problem by training the staff based on defense mechanisms and problem-solving techniques<sup>16</sup>. Other examples of stress management programs that meet the possibility of coping and preventing job dissatisfaction among nurses was using progressive muscle relaxation and deep breathing techniques. These techniques influenced the body and the mind to be free or relieved from stress at least during worktime<sup>15</sup>.

Finally, regardless of the method or approach, it is evident that there is a need for nurse leaders to embrace the development and enhancement of comprehensive stress management programming for the staff nurses as a priority item to avoid burnout and reduction<sup>17</sup>.

### ***Significance of the study:***

The two critical issues of the nursing profession worldwide are job satisfaction and nurse retention. Job satisfaction and work stress linked very closely in health working settings. Specific behaviors appear at workers such as distress and dissatisfaction behaviors that are requiring more attention to manage. So, the current study will enhance our understanding of the effect of work stress management on staff nurses' job satisfaction that affect work behaviors of nurses which would ultimately be linked with the achievement of organizational goals. However, developing and implementing work stress management is challenging because certainly play a strategic tool to motivate the staff nurses to promote their potential growth and development. Therefore, having a stress management program could be directly related to a positive relationship with high job satisfaction and more job performance as well.

**Aim of the study:**

This study aimed to examine the effect of work stress management program on staff nurses' job satisfaction.

**Research Hypothesis:**

1. The staff nurses who will be exposed to the stress management program will have better knowledge after program implementation compared to their pre intervention level.
2. The staff nurses who will be exposed to the stress management program will have reduced stress after program implementation compared to their pre intervention level.
3. The staff nurses who will be exposed to the stress management program will have improved job satisfaction after program implementation compared to their pre intervention level.

## **II. Material And Methods**

**Research Design:**

Quasi-experimental design used to achieve the aim of the present study. A quasi-experiment is an empirical interventional study used to estimate the causal effect of an intervention on target population without random assignment<sup>18</sup>.

**Setting:**

The study was conducted in critical care units; (General intensive care unit (ICU), cardiac care unit (CCU), cardiothoracic ICU, hepatic ICU, chest ICU, emergency ICU, pediatric dialysis, pediatric ICU unit and general dialysis unit at Benha University Hospital, Egypt. This setting selected because it is the most stressful environment and heavy workload of critical care units, which increase stress level among critical care nurses.

**Sample:**

Convenience sample of all available staff nurses who met the inclusion criteria (128) and working in the critical care units, the staff nurses distributed as following; (18) of them working at (ICU), (16) at (CCU), (13) at cardiothoracic ICU, (12) at chest ICU, (15) at hepatic ICU, (15) at emergency ICU, (14) at pediatric ICU, (13) at pediatric dialysis unit, and (12) staff nurses working at general dialysis unit.

**Inclusion criteria:**

- Staff nurses with at least 2 years of experience in the current job.
- They did not participate in a previous training course or program about work stress management.
- Agree to participate after clarification purpose of the study.
- Those who are present during period of data collection.

**Exclusion criteria:**

- Absence of more than one session from training classes.
- Whom work at night shift continuously.

**Tools of Data Collection:**

Data of the present study collected by using the following three tools.

**First Tool: Self-assessment Knowledge Questionnaire:**

This questionnaire was developed by the researchers based on the review of the related literature<sup>13, 19, 3</sup> to assess staff nurses' knowledge level regarding work stress thorough program. It consisted of two parts:

**First part:** It included personal characteristics of staff nurses as age, sex, years of experience, and previous training regarding work stress management program.

**Second part:** is concerned with work stress knowledge questionnaire. It consists of 16 close-ended questions (true and false "10" questions and multiple choice "6" questions). That grouped under the main four items namely, Concepts related to stress, meaning of work stress (4 questions), types, signs and causes of stress (4 questions), manifestation of stress (4 questions), and stress management technique (4 questions).

**Scoring system:**

Each question granted, one grade given for a correct answer, and zero if response was incorrect answer. A subtotal score for each section was done. A total score calculated by summing up the grades of the sheets. The maximum possible total score was 16; the total scores converted into percentages. The total level of knowledge considered satisfactory if the percent score was 60% or more and unsatisfactory if less than 60%.

**Second Tool: Work stress Self-Administered Questionnaire:**

It was adopted from<sup>20</sup>. To assess staff nurses work stress level. It consists of 11 items namely: disagreement & indecision, pressure on the job, job description conflict, communication & comfort with supervisor, job related health concerns, work overload stress, work under load stress, boredom induced stress, problem of job security, time pressure, and job barrier stress. Each topic contains five sub-items.

### **Scoring system:**

The questionnaire consists of five- point Likert scale, Never, Rarely, Occasionally, Usually, and Constantly. The scoring system for the answer was "1" never, "2" rarely, "3" Occasionally, "4" Usually, and "5" Constantly. Overall scores will fall within the 55 to 275 range. The score of each dimension summed up and converted into percent score. The total was categorized as follows: <50% Weak level of work stress, 50 ->75% average level of work stress and, < 75% high level of work stress

### **Third Tool: job satisfaction questionnaire.**

It was developed by the researchers through reviewing the related literature, guided by <sup>21, 22, 23</sup> to assess staff nurses' job satisfaction level. It consisted of (32 items) that categorized under eight dimensions namely: nature of work (4 questions), inter- personal relationship (4 questions), pay and allowances (4 questions), work environment (4 questions), training (4 questions), management policies (4 questions), personal growth and career development (4 questions) and empowerment (4 questions).

### **Scoring system:**

The questionnaire consists of five- point Likert scale ranging from (1 very dissatisfied, to 5 very satisfied). The overall scores will fall within the 32 to 160 range. The score of each dimension summed up and converted into percent score. Level of total staff nurse's job satisfaction was categorized as follows: < 50% Weak level of job satisfaction, 50- >75% Average level of job satisfaction, < 75 % High level of job satisfaction

### **Methods**

The study was carried out according to the following steps

#### **Tools validity**

The contents of tools of data collection for the study were tested for its validity by jury of three academic staff in nursing administration department and two academic staff in mental health nursing department from different faculties of nursing in Egypt namely; Benha faculty of nursing, Ain shams faculty of nursing, El Monofia faculty of nursing, Tanta faculty of nursing and Helwan faculty of nursing. The validity of the tools aimed to judge its clarity, simplicity, accuracy, comprehensiveness, and relevance, all of their comments taken into consideration, and some items were re-phrased.

#### **Tools reliability**

The Cronbach's Alpha test done for the tools of data collection of the current study. The calculated reliability was ( $r= 0.864, 0.885$  and  $0.917$ ) for staff nurses self-assessment knowledge questionnaire, work stress self-administrated questionnaire and job satisfaction questionnaire respectively.

### **Approval**

An official permission obtained from the hospital authorities in the identified setting to collect the necessary data and implement the program after explaining its purpose.

### **Pilot study**

A pilot study was carried out on 10% of study subjects that included (13 staff nurses) before starting the actual data collection to ascertain the clarity and applicability of the study tools and the feasibility of the study process. It also needed to estimate the time necessary to fill in tools of data collection. Based on the pilot study, the analysis done accordingly. As well as the pilot study, participants excluded from the study because some items were re-phrased in the study tools.

### **Ethical consideration:**

The agreements for participation of the subjects taken after the aim of the study explained to them. Before data collection, the nurses informed about the aim of the study and what would be done with the results. They given the opportunity to refuse to participate and they could withdraw at any stage of the research. In addition, they assured that the information would remain confidential and used for the research purpose only.

### **Fieldwork:**

The study carried out from the beginning of June 2015 to the end of July 2016 as the following sequence:

**Pre implementation phase:** It was carried out from the beginning of June 2015 to the mid of July 2015. Preparation of tools for data collection and the teaching sessions for work stress program based on a review of national and international related literature using journals, textbooks, internet and theoretical knowledge of the various aspects concerning the topic of the study. The component of the program included:

**Theoretical part:** Introduction, concepts components of stress and its importance for nursing staff, Types of stress, Physiology of stress, causes of stress, work stress, Consequences of work stress, manifestation of work stress, Stress among nursing staff, Nursing stress and patient care.

**Practical part:** Psychological methods and coping techniques, which involve:

#### **❖ Stress management techniques:**

✚ Physical activity.

✚ Replacement – techniques: hobbies, communication with friends, listening music, reading, creative activities.

- ✦ Solving problems – techniques: analyzing the situation, planning the actions for solving a problem.
- ✦ Support – techniques: based on searching help and support from others and contacting specialists.
- ✦ Adjusting tension and emotions – techniques: yoga, meditation.
- ✦ Breathing techniques, muscle relaxation, Schultz's autogenic training, focusing on sensual impressions, autohypnosis, positive thinking.
- ✦ Lack of activity, helplessness: passive waiting
- ✦ Muscle Relaxation techniques
- ✦ Deep breathing techniques.

**Implementation phase (intervention):** This phase carried out through the following sequence:

- **First:** Staff nurses were divided into (10) small groups (12-13 nurse) according to their units. The pre-program test carried out from the mid of July 2015 to mid of August 2015. The preprogram tests were fulfilled by the staff nurses before beginning of the program. Work stress knowledge questionnaire took from 10–15 minutes to be completed; Work stress self-administered questionnaire took from 25–30 minutes to be completed, and 15-20 minute for completing job satisfaction questionnaire This preprogram tests was conducted to allow the researchers to collect a baseline assessment for staff nurses' regarding work stress knowledge, level of work stress and job satisfaction in order to compare it with immediate post and follow-up program. The data collected 3 days/week in the morning and afternoon shift. The number of staff nurses whom completed the questionnaires per day ranged from 12 to 13 nurse.

**Second:** Implementation of the program sessions after the questionnaires were completed, the program implemented by the researchers. The time plan of the program implemented over the period from the mid of August 2015 to end of September 2015. The program has taken 12hours for each group through program 4 hours to cover theoretical sessions and 8 hours for practical sessions, distributed as the following; 6 sessions for each group, 2hour/session, 2 sessions for different two group/day, 5 days/week, 20 hours /week in the morning and afternoon shift, At the beginning of the program sessions, an orientation to the program and its purpose took place, and the staff nurses were informed about the time and place of sessions that were carried out at the newly established training center or available suitable setting according to collaboration between nursing directors, researchers and studied nurses. Each session started by setting objectives and an overview of the new topic. At the end of each session, the staff nurses' questions discussed and answered to ensure understanding. The same teaching strategies, available resources, relevant content, and instructional strategies for each session utilized to implementing the program by the researchers according to their collaboration. Methods of teaching used like the following; lecture, group discussion, role-play, and brainstorming. Teaching and instructional media included the following; hand out and PowerPoint presentation. At the end of each session, the participants were encouraged to repeat the exercises at home.

- **Evaluation phase:**(post & follow up program evaluation) during this phase, the effect of educational program was evaluated; by using the same format of tools which used before the program implementation. This phase was carried out as the follow sequence:-
  - **The post program test** was carried out after 6 months of program implementation and took one month . started from the end of March 2016 to the end of April 2016
  - **Follow up program test** carried out after 9 months of program implementation and took one month started from the end of June 2016 to the end of July 2016.

**Statistical design:**

Data collected, entered and analyzed by using SPSS (version 25 software computer package (special package for social science). Presented in tabular form. Descriptive statistics applied (e.g., frequency, percentages, mean, and standard deviation). Chi-square test, Paired t-test and correlation coefficient (r) used. A significant level value considered when p-value  $p \leq 0.05$ , and a highly significant level value considered when  $p < 0.001$ . No statistically significant difference considered when  $p > 0.5$ .

**III. Result**

**Table 1: Frequency and percentage distribution of studied staff nurses according to their personal characteristics.**

Personnel characteristics	Staff nurses (128)	
	No	%
<b>Age in years</b>		
< 25	17	13%
25<35	81	63%
35 <45	30	23%

Mean ±SD	28.37±5.17	
<b>sex</b>		
Male	21	16%
Female	107	84%
<b>Years of experience of the current job</b>		
2-<5	18	14%
5 -< 15	22	17%
15-<25	75	59%
≥ 25	13	10%
Mean ±SD	22.44±4.39	

**Table 1:** shows the total number of staff nurses was 128 and the majority (63%) of them were aged 25-35 years old, as far as the majority (84%) of them were females. Regarding to their years of experience (59%) of staff nurses had 15-25 years of experience.

**Table 2: Comparison of the studied staff nurses' knowledge regarding work stress through the educational program phases (n=128).**

Staff nurses work stress Knowledge.	Pre-program No=(128)		Post-Program No=(128)		Follow up No=(128)		(X <sup>2</sup> )1	P (value)	(X <sup>2</sup> )2	P (value)2
	No	%	No	%	No	%				
<b>Concepts related to stress , (4 items)</b>										
Incorrect	101	79%	18	14%	29	23%	42.319 <sup>a</sup>	0.000**	40.210a	0.000**
Correct	27	21%	110	86%	99	77%				
<b>Types of work stress (4 items)</b>										
Incorrect	100	78%	14	11%	35	27%	39.917 <sup>a</sup>	0.000**	37.913a	0.000**
Correct	28	22%	114	89%	93	73%				
<b>Manifestation of stress(4 items)</b>										
Incorrect	101	79%	19	15%	26	20%	28.258 <sup>a</sup>	0.000**	26.319a	0.000**
Correct	27	21%	109	85%	102	80%				
<b>Work stress coping technique (4 items)</b>										
Incorrect	97	76%	15	12%	27	21%	31.215 <sup>a</sup>	0.000**	30.915a	0.000**
Correct	31	24%	113	88%	101	79%				
<b>Total knowledge</b>										
Satisfactory	24	19%	116	91%	105	82%	41.449 <sup>a</sup>	0.000**	39.226a	0.000**
unsatisfactory	104	81%	12	9%	23	18%				

Total knowledge is satisfactory when (more than 60%)\* \* Unsatisfactory knowledge (less than 60%).

(X2) 1: pre & post

(X2) 2: pre & follow up

P (value) 1: pre & post

P (value) 2: pre & follow up

Table 2 clarifies that there was a high statistically significant improvement at (P value ≤ 0. 001) of total knowledge of work stress through the educational program. In addition, majority (91%) of studied nurses have satisfactory level of their total knowledge regarding work stress post program compared to 19 % pre implementation and 82% at the follow up with a statistically significant difference between the three phases.

**Table 3. Comparison of staff nurses' level of work stress through the educational program (n= 128).**

Items	Pre program	Post program	Follow up program	t-test 1	P value	t-test 2	P. value
	Mean ± SD	Mean ± SD	Mean ± SD				
Disagreement & Indecision	23.11±3.556	5.6±1.61	11.7±3.2	70.9	0.000**	65.1	0.000**
Pressure on the Job	22.95±3.54	5.7±1.74	12.85±3.68	43.2	0.000**	27.7	0.000**
Job Description Conflict	23.21±3.55	6.2±2.373	11.82±4.06	44.1	0.000**	22.7	0.000**
Communications & Comfort with Supervisor	22.28±2.95	8.04±4.31	10.82±3.62	45.2	0.000**	26.4	0.000**
Job Related Health Concerns	22.1±3.52	8.03±4.213	10±0	26.8	0.000**	26.3	0.000**
Work Overload Stress	22.29±4.095	8.44±4.203	10±0	27.0	0.000**	33.4	0.000**
Work Under load Stress	23.49±3.79	6.21±2.155	10±0	27.4	0.000**	36.6	0.000**
Boredom Induced Stress	25±0	6.07±2.047	10.96±0.194	53.0	0.000**	60.3	0.000**
Problem of Job Security	25±0	12.41±2.609	14.804±0.972	104.6	0.000**	816.6	0.000**
Time Pressure	25±0	7.976±1.86	14.804±0.972	29.4	0.000**	118.6	0.000**
Job Barrier Stress	25.0±0	5.0±0	14.80±0.972	54.6	0.000**	118.6	0.000**
Total	259.46±19.77	79.78±15.94	132.61±12.440	103.4	0.000**	118.6	0.000**

\*\*A highly statistical significant difference ( $P \leq 0.001$ ) \*A highly statistical significant difference ( $P \leq 0.05$ )  
 T-test 1: pre & post T-test 2: pre & follow up

Table 3: Clarifies that there was statistically significant reduction of mean and standard deviation of work stress among staff nurses thorough program which include the dimensions of " Disagreement & Indecision, Pressure on the Job, Job Description Conflict, Communications & Comfort with Supervisor, Job Related Health Concerns, Work Overload Stress, Work Under load Stress, Boredom Induced Stress, Problem of Job Security, Time Pressure, Job Barrier Stress." post program and 9 months follow up the program compared to pre-program scores as reported by staff nurses.

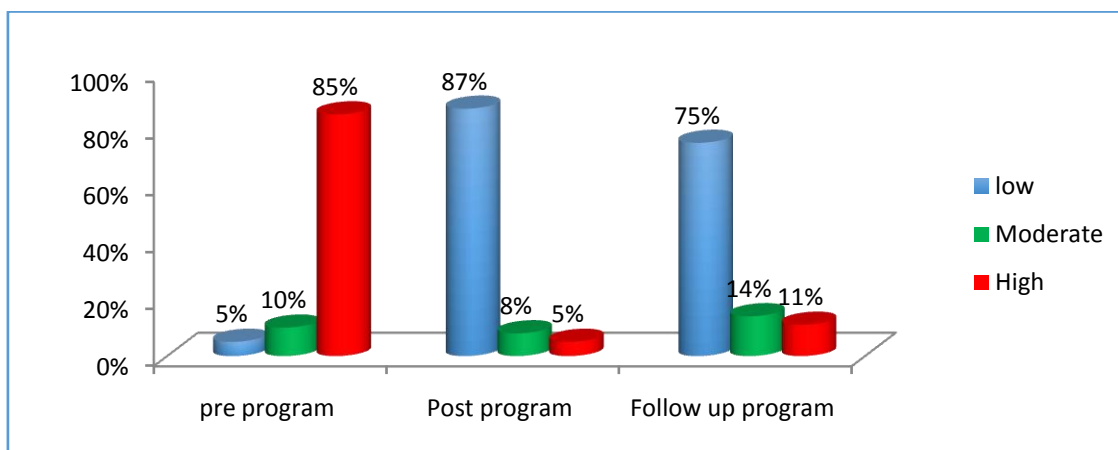


Figure (1): Total level of work stress among studied staff nurses through program.

Figure (1) Illustrates that there was highly statistically significant improvement in level of work stress among staff nurses where 87%, 75% of them had a low level of work stress post and nine months follow up the program respectively compared to preprogram scores (5%).

Table 4: Comparison of studied staff nurses' job satisfaction thorough the educational program (n= 120).

Staff nurses job satisfaction	Pre program	Post program	Follow up program	t-test 1	P value	t-test 2	P. value
	Mean ± SD	Mean ± SD	Mean ± SD				
Nature of work	4.5±1.27	18.63±3.07	10.89±3.88	41.615	0.000	22.489	0.000
Inter-relationship personal	4.57±1.39	18.12±3.40	12.6±4.7	41.780	0.000	20.817	0.000
Pay and allowances	4.5±1.39	18.6±2.55	13.23±4.11	37.988	0.000	20.044	0.000
Work environment	5.53±2.57	18.3±2.65	12.59±4.373	50.015	0.000	23.465	0.000
Training	6.43±3.44	17.85±2.8	13.05±5.05	34.331	0.000	19.691	0.000
Management policies	6.32±3.41	17.68±3.27	10.81±5.1	27.245	0.000	11.240	0.000
Personal growth and career development	6.84±3.37	17.68±3.27	10.81±5.1	27.018	0.000	7.304	0.000
Empowerment	5.8±2.4	18.25±2.71	10.81±5.1	26.332	0.000	6.851	0.000
Total	44.68±15.29	145.195±18.93	94.8±22.5	34.704	0.000	9.818	0.000

\*\*A highly statistical significant difference ( $P \leq 0.001$ ) and \*A highly statistical significant difference ( $P \leq 0.05$ )  
 T-test 1: pre & post and T-test 2: pre & follow up

Table 4: Clarifies that there was statistically significant improvement ( $P \leq 0.05$ ) of mean and standard deviation of total job satisfaction thorough program regarding the dimensions of the job satisfaction, the highest mean was (18.63±3.07 and 18.6±2.55) related to "Nature of work, Pay and allowances, post program and nine months follow up the program than preprogram scores as reported by staff nurses.

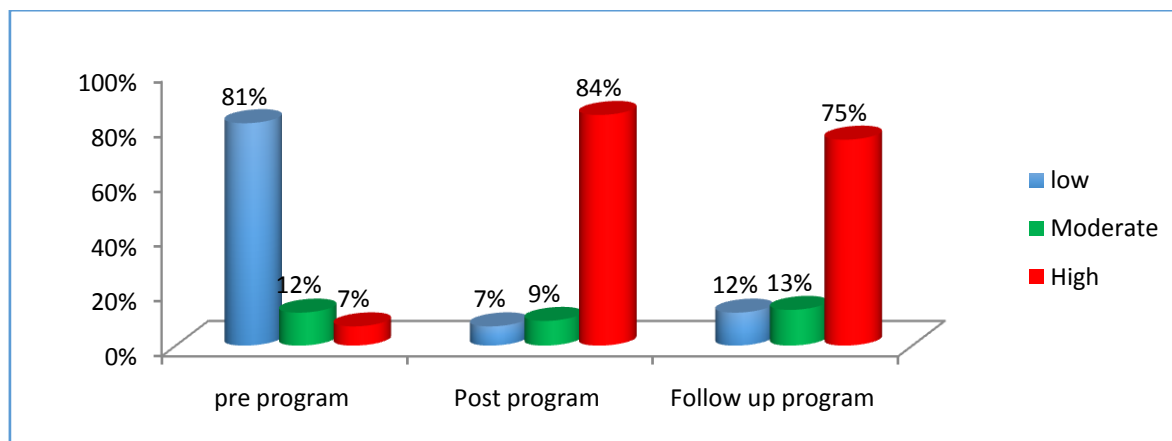


Figure (2): Total level of studied staff nurses' level of job satisfaction through program.

Figure 2: Illustrates that there was highly statistically significant improvement in level of job satisfaction among staff nurses where 84%, 75% of them had a low level of job satisfaction post and nine months follow up the program respectively compared to preprogram scores (7%).

Table 5: Correlation between staff nurses work stress level and job satisfaction level.

work stress (n=128)	staff nurses job satisfaction (n = 128)					
	Total staff nurses job satisfaction Pre program		Total staff nurses job satisfaction post program		Total staff nurses job satisfaction follow up program	
	r	P.Value	r	P.Value	r	P.Value
Total work stress Pre program	-.286	0.001**	-	-	-	-
Total work stress post program	-	-	-.262-**	0.001**	-	-
Total work stress follow up program	-	-	-	-	-.297**	0.001**

\*\*A highly statistical significant difference ( $P \leq 0.001$ ) \* Statistically significant. ( $p \leq 0.05$ )  
(r) \* correlation coefficient

Table (5) shows a highly statistical negative correlation between the total score of work stress and total score staff nurses' job satisfaction throughout the program phases

Table 6: Correlation between ages, experience, previous training with work stress and staff nurses job satisfaction.

Personal characteristics	work stress		job satisfaction	
	r	P.Value	r	P.Value
Age in years	0.524	0.000**	0.498	0.000**
Years of experience	.365	0.000**	.458	0.000**

\*\*A highly statistical significant difference ( $P \leq 0.001$ )  
\* Statistically significant. ( $p \leq 0.05$ )  
(r) \* correlation coefficient.

Table 6: Findings of the table displays that there was positive statistically significant correlation between Age, years of experience and, previous training with work stress and staff nurses' job satisfaction.

#### IV. Discussion

Nursing is a stressful job that could create physical and psychological disorders. Therefore, preventing and minimizing stress at work can benefit the physical and mental health of workers and their quality of work life. In addition, benefits to organizations are expected as the prevention and minimization of stress can decrease absenteeism, favoring a less stressful work environment, affecting productivity and quality of work Goulart et al.<sup>24</sup>, The aim of this study was to examine the effect of work stress management program on staff nurse's job satisfaction.

The result of present study indicated that the total number of staff nurses was 128, there was about two-thirds of staff nurses had age from 25 to less than 35 years old. While more than, four fifths of them were females. According to years of experience, more than half of staff nurses had years of experience from 15 to 25 years.



This result was inconsistent with Kang and Kim.<sup>25</sup>, who conducted a study entitled "Effects of job stress and coping behavior on job satisfaction in Korean male nurses" and found that more than half of staff nurses had age less than 30 years. While two thirds of staff nurses with less than years of work experience.

While Dagget et al.<sup>26</sup>, who conducted a study entitled " Job related stress among nurses working in Jimma Zone public hospitals, South West Ethiopia: A cross sectional study" reported that more than two fifths of them aged between 25-29. In total, while more than half of the nurses were males, and more than three quarters of them had (less than year) year–5 years of work experience.

Concerning staff nurses' knowledge regarding work stress management, the result of present study revealed that there was highly statistically significant improvement in staff nurses` knowledge scores regarding work stress management post program and nine months follow up the program compared to preprogram scores. This might be due to nurse`s environment includes an enclosed atmosphere, time, pressures, excessive noise, sudden swings from intense to mundane tasks, no second chance, unpleasant sights and sounds and long standing working hours. So nurses are interested to train to deal with these factors but stress takes a toll when there are additional stressors.

These findings were similar to Koval.<sup>27</sup>, who found in their study done on health care professionals that there was a highly significant improvement in knowledge level throughout the three phases of the program; pre, immediate post program, and follow up after three months, where their pre knowledge had improved by 86% for post-program and 50% at follow-up.

Regarding staff nurses' level of stress through the study phases, the result of present study revealed there was statistically, significant improvement in staff nurses` levels of stress scores in work thorough the program. This is due to Stress management intervention targets the thoughts of an individual as a cognitive process. The basis of this theory is that alteration of behaviors and emotions determined by the thoughts about the happened events. Individuals are often worried and distressed by their perception of events rather than the events themselves. The self-management skills and psychological preparedness in the form of stress management held the individuals manage the stress in the workplace in an effective way and thus have a better job satisfaction and productivity Seibert et al.<sup>28</sup>.

This result goes in the same line with Milliken et al.<sup>15</sup>, who revealed that there was an improvement in levels of work stress of head nurses in post and follow-up phases of the training program compared with the pre-phase. 95% of head nurses' work stress was lowered as a result of the program intervention and 90% at the follow-up.

This result was in agreement with Shapiro et al.<sup>29</sup>, who conducted a study entitled "Mindfulness based stress reduction for health care professionals" and revealed that the Eighty-eight percent of participants showed improvement in their stress scores post program application.

Also, AlaviArjmand et al.<sup>13</sup>, who conducted a study entitled " Effect of Stress Management on Job Stress and Work-Family Conflict among Nurses." The study demonstrated that stress management results in reduced level of occupational stress and job-life conflict. The important thing is sustainability of the developed changes. Through the cognitive behavioral variable, sustainable change would become possible.

WhileHosseini et al.<sup>30</sup>, who reported in their study about implementation of educational programs of stress management based on PROCEED model led to decreased levels of occupational stress in nurses after the intervention.

Considering the effect of stress management program on reduction of stress, the findings of this study are also congruent with themRezaei et al.<sup>31</sup>.Hamid et al.<sup>32</sup>.Eley et al.<sup>33</sup>.Kim et al.<sup>34</sup>.

Also,Moeini et al.<sup>35</sup>, who reported that after the intervention of stress management training program, the average score of job stress decreased in the experimental group, while in the control group, scores were unchanged ( $P < 0.001$ ).

This result was in agreement withHersch et al.<sup>36</sup>, who conducted a study entitled " Reducing Nurses' Stress: A Randomized Controlled Trial of a Web-Based Stress Management Program for Nurses " and revealed that there were statistically significant differences between total mean scores of Nurses Job Related Stress Scale pre and post stress management program among nurses and significant reduction in nurses' stress levels.

This result supported byLewis et al.<sup>37</sup> who stated that stress management in the work place revealed as an important issue for the nursing profession. In previous research, stress management interventions have seen rapidly reduce stress symptoms. The identification of interventions for stress management is therefore important.

The present study agrees with multi studies. In a study on the effectiveness of cognitive behavioral stress management on female nurses' job satisfaction, showed that stress management was effective on improvement of job satisfaction and that the mean scores were significantly higher immediately after intervention and in the follow up stages, compared to before intervention Hamid et al.<sup>32</sup>.

This result agrees with Moeini et al.<sup>35</sup>, who reported in their study that, before intervention there was no significant difference in the stress management behaviors of the group comparing to after implementing educational programs and these behaviors increased significantly in intervention group. Concerning staff nurses' level of job satisfaction, the result of present study revealed that there was statistically significant improvement in staff nurses' level of job satisfaction post program and nine months follow up the program compared to preprogram scores. From the researcher's opinion, training program for staff nurses was effective as it improved their job satisfaction and the staff nurses has acquired advanced information on how to deal with stress, it can enhance coping strategies. The greater the understanding and control of pressures and situations that influence the individual, the better the adaptation and responses the individual will produce.

This result was supported by Darban and Mazlom<sup>38</sup>, who conducted a study entitled "The effect of stress inoculation program on nurses' job satisfaction in psychiatric ward." the study assessed the effect of stress reduction program on job satisfaction in psychiatric nurses. Their results showed significantly greater mean job satisfaction in the intervention group compared to the controls after two intervention sessions.

This finding is consistent with Currid,<sup>39</sup> who conducted a study entitled "The lived experience and meaning of stress in acute mental health nurses" and stated that there was significance difference level of job satisfaction improvement.

This finding disagrees with Kang and Kim<sup>40</sup>, who conducted a study entitled "Effects of job stress and coping behavior on job satisfaction in Korean male nurses" and found that no difference was observed in job satisfaction score between studied groups.

Regarding correlation between work stress and staff nurses job satisfaction, this study illustrates that, there was a negative correlation between work stress and staff nurses job satisfaction, with a highly statistically significant. From the researcher opinion that when there are no/very low levels of work stress make individuals maintain their current levels of job satisfaction.

This result was consistent with Nabirye<sup>9</sup>, who found that there were significant negative relationships between occupational stress and job satisfaction. Nurses in the public hospitals reported higher levels of occupational stress and lower levels of job satisfaction and performance. This finding has implications for the importance of improving the work environment to increase nurses' job satisfaction Zangaro and Soeken<sup>41</sup>.

On the other hand, studies have shown that psychological-organizational damages as well as occupational stress have a relationship with job satisfaction. Occupational stress could have damaging effects on many of the variables related to performance due to irreversible damages to the mental health of individuals Khayatan et al.<sup>42</sup>. Several studies including Marzabadi, and Tarkhorani<sup>43</sup>, Aliakbari et al.<sup>44</sup> indicated that there is a significant negative relationship between occupational stress and satisfaction.

The findings of current research indicated that there is a significant relationship between occupational stress and satisfaction, congruent with the results of earlier researches Van et al.<sup>45</sup>, Drury et al.<sup>46</sup>, An et al.<sup>47</sup>.

Likewise, in the study conducted by Wang et al.<sup>48</sup>, they concluded that in order to reduce and manage nurses' job stress, first need to recognize the impacts of job-related stress and effective coping methods.

This result goes in the opposite line with study done by Skinner et al.<sup>49</sup>, who found that stress management program did not have a significant effect on job satisfaction.

This finding disagrees with<sup>40</sup> who stated that there was no correlation between work stress and staff nurses job satisfaction.

Regarding correlation between sociodemographic characteristics, work stress management and staff nurses job satisfaction, this result revealed that there was positive statistical significant correlation between age, years of experience and, previous training and job stress self-assessment and staff nurses job satisfaction. From the researcher opinion, with increase in years of experience and age, nurses face many problems and situations and increase level of stress.

This study in the same line with Li and Lambert<sup>50</sup>, who showed that the education level of nurses, years of experience in nursing, and years of experience in the current area of work were the factors influencing workplace stress, coping methods, and job satisfaction. Although, Pino and Rossini<sup>51</sup> stated that socio-demographic factors did not play a considerable role according to the findings of this research. Factors such as age differences, the role of experience did not mention any linked relationship with stress.

This result disagrees with Jafar et al.<sup>52</sup> who found that there was no significant correlation between stress level and some demographic information.

## **V. Conclusion**

The study concluded that work stress management program was effective on enhancing of staff nurses job satisfaction.

## **VI. Recommendations:**

- It is suggested that psychologists and psychiatrists should help the staff in coping with work stress by developing educational methods, courses, as well as different and periodic workshops considering the proof of effectiveness of stress management training and stressful work conditions
- Organizations should create an environment that encourages workers to use more positive coping strategies when experiencing stress.
- The managers should investigate and analyze the causes and types of work stress, help nurses to recognize the stress and their own coping styles, and then make detailed stress-reduction plan for nurses on the organizational level
- Meanwhile, managers should carry out training about positive mood management, provide relevant information, and knowledge on stress management for nurses. Besides, organizations can let nurses think their work is meaningful and beneficial by developing scientific evaluation system based on key performance indicators.
- Managers should take multiple measures to help nurses to reduce their work stress and in turn to improve the job satisfaction such as nature of work, inter- personal relationship, pay and allowances, work environment, training, management policies, personal growth and career development and empowerment.

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## **Conflict of interest: -**

The authors declare that they have no conflict of interests. Financial competing Interest.

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