

## DEVELOPING AND VALIDATING AN INSTRUMENT TO ASSESS NURSES' WORK RELATED STRESSORS AT SELECTED HOSPITAL

Mohamed Gamal Mostafa<sup>1</sup> & Laila Moahmed Abdo<sup>2</sup>

<sup>1</sup>Assistant Lecturer, Department of Nursing Administration, Faculty of Nursing, Cairo University, Egypt

<sup>2</sup>Professor, Department of Nursing Administration, Faculty of Nursing, Cairo University, Egypt

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Received: 06 Mar 2018

Accepted: 17 Mar 2018

Published: 26 Mar 2018

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### ABSTRACT

Nursing is generally known as a demanding profession. There is a rising interest for healthcare administrators to manage aspects leading to nursing work stress as a means towards maintaining a healthy work environment. The present study aimed to develop and validate an instrument to assess nurses' work-related stressors at selected hospitals. A methodological design was utilized. The study sample was 625 nurses represent 50% of the staff nurses working at New El-Kasr Alaini hospital, El-Sheikh Zaied Specialized hospital and Om Elmasryeen hospital. The study revealed a valid and reliable instrument. Such results were indicated by face validity, content validity, and factor analysis using the varimax rotation for the 66 items included in the initial tool. The factor analysis indicated 3 main dimensions with considerable loading for 20 items. The dimensions were given suitable headings as follows; stressors related to leadership behaviors, nature of the nursing role, and psychological burden. Reliability was assessed and revealed an internal consistency (Cronbach alpha=0.87). In conclusion, the study demonstrated a short valid and reliable instrument to assess the nurses work stressors. The instrument is suitable for use by healthcare managers in different medical situations. Further studies are recommended for the use of the tool on representative samples of Egyptian nurses.

**KEYWORDS:** Nursing Stress, Work Stressors, Validity, Reliability

### INTRODUCTION

Stress has been categorized as an antecedent or stimulus, as a consequence or response, and as an interaction. It has been studied from many different frameworks or perspectives {1}. {2} proposed a physiological assessment that supports considering the association between stress and illness. On the other hand, {3} advocated a psychological view in which stress is "a particular relationship between the person and the environment that is appraised by the person as taxing or exceeding his or her resources and endangering his or her well-being."

Professional stress, job stress or occupational stress is synonyms for Work-related stress. {4} and {5} define the work stress as a consequence of the disequilibrium between work demands and workers' skills, resources and needs. It represents patterns of an emotional, cognitive, behavioral and physiological reaction to harmful and adverse components of the work context {4}{5}. Stress occurs when one is faced with events or encounters that they perceive as an endangerment to their physical or psychological well-being.

Moreover, {6} defined the Stress as an individual's perception of the demands being made on them and to their perception of their capability to meet those demands. A mismatch will mean that an individual's stress threshold is exceeded, triggering a stress response. Stress is the physical or mental reaction of an organism to depressing situations causing danger to well-being, health or life of an individual. In addition to the stress is defined as an emotional condition (or mood) the reason for which is a contradiction between job requirements and the ability of a person to perform them {7}.

{8} defined the stressor as an experience in a person-environment relationship that is evaluated by a person as taxing or exceeding resources and threatening the sense of well-being. Moreover, stressors refer to the physical or psychological demands or stimuli to which an individual or worker group must adjust. Additionally {9} illustrate the stressor as stress stimulus or a situation that produces distress that creates physical and psychological demands on a person, requiring coping and adapting.

There are individual differences in response to stress. Each individual's cognitive appraisal, their perceptions, and interpretations, gives meaning to events and determines whether events are viewed as threatening or positive. Personality traits also influence the stress equation because what may be overtaxing to one person may be exhilarating to another {10}. The perception of stress is highly subjective and is related to the complexity of nursing practice. Nurses are different in their identification of sources of stressors and in their responses to these stressors, especially with the frequently changing health care environment {11}.

Many factors in the healthcare setting environment, such as constant noise, frequent exposing to hazards and uncomfortable procedure were found to cause much anxiety and restlessness {12}. Research concluded that the major sources of stress for nurses entail dealing with death and dying, conflict with colleagues, inadequate preparation to deal with the emotional needs of patients and their families, lack of staff support, workload, working conditions, relationships at work, role conflict and ambiguity, organization structure and climate, work-home interface, career development, nature of the job and uncertainty concerning treatment plans {9}{13}{14}.

Workplace stress has received a great deal of attention in social psychological research {15}. Significant research findings have documented that prolonged stress has negative effects on individual health {16} as well as on employees' attitudes towards the organization {12}. Among many professional adverse effects of work stress is job dissatisfaction, poor public relations, reduced productivity, absenteeism, and high staff turnover; adverse personal effects are anxiety, depression, and burnout {5}{17}. Due to modernization and the increasing use of advanced technologies, competition in the workplace has become increasingly fierce, and physical, mental and spiritual problems caused by work-related stress have also increased. Work stress can lead to high rates of undesirable events and unfavorable physical and mental health outcomes {5}.

Studies have shown occupational stress to be one of the most costly occupational health issues in terms of the loss of organizational resources. Common direct costs of occupational stress are reduced productivity, increased absenteeism, and employee turnover {18}.

In recent years, there has been a growing effort to develop and create a valid and reliable assessment tool in health care research. Development of valid and reliable tools involves several steps taking considerable time {19}. Two salient characteristics of all measurement efforts are reliability and validity. First and foremost, tools and methods selected or

developed for measuring a variable of interest must demonstrate evidence for reliability and validity. Reliability, in this case, refers to the consistency with which a tool or method assigns scores to subjects. Validity refers to the determination of whether a tool or method is useful for the purpose for which it is intended, that is, measures what it purports to measure. Second, in addition to the concern with instrument reliability and validity, attention needs to be given to the reliability and validity of the measurement process {20}.

### **Aim of the Study**

The present study aimed to develop and validate an instrument to assess nurses' work-related stressors.

### **RESEARCH OBJECTIVES**

To fulfill the aim of the study, the following research objectives were formulated:

- Developing an instrument to assess nurses' work-related stressors.
- Testing the psychometric properties of the developed instrument.

### **Ethical Consideration**

A primary approval to conduct the study was obtained from the research and ethical committee, Vice Dean of Post Graduate Studies and Research, Vice Dean for Education and Student Affairs and the head of nursing administration department at Faculty of nursing- Cairo University to carry out the study.

Participation in this study was entirely voluntary; each participant had the right to accept or refuse participation in the study. Informed consent will be obtained from the study's subjects. Anonymity and confidentiality were assured through coding the data; every participant had the right to withdraw from the study at any time. Subjects were assured that this data will not be reused in another research without taking the permission of the participants. The ethical issues, considerations include explaining the purpose and nature of the study and protecting the participants from any risk. Collected data was used in the purpose of the research only and the entire needed sample in the study was followed until been analyzed.

### **MATERIALS AND METHODS**

#### **Research Design**

The Methodological design was utilized to develop and validate an instrument to assess nurses' work-related stressors.

#### **Setting**

This study was conducted at three selected hospitals. The first one is New Kaser El-Aini Teaching Hospital, which is a profit hospital affiliated to Cairo University. The second hospital is El-Sheikh Zaid Specialized Hospital (250 beds) affiliated to Ministry of Health. It has different medical specialties. The third one is Om ElMasryeen hospital which is a nonprofit hospital (292 beds) affiliated to Ministry of Health.

#### **Sampling**

Simple random sample technique was used to select the study nurses. The study sample size was 625 nurses

represent 50% of the total number of staff nurses working at selected hospitals (New El-Kasr Alaini hospital, (700 nurses), El-Sheikh Zaied Specialized hospital (300 nurses), Om Elmasryeen hospital (250 nurses).Accept to participate in the study.

The sample of each hospital was distributed among the nursing units by the proportional allocation equation. The participants were randomly selected from a list of nurses' names for each unit using the simple random table.

### Criteria for Sample Selection

- Staff nurses working in the study hospitals not less than one year
- Working in inpatient units

### Tools of Data Collection

Data will be collected using the following tools:-

- Nurses' perception of work stressors (Open- ended question) to identify the nurses' work- related stressor from their point of view.
- Work -related stressors initial tool will be designed by the investigator based on literature review and nurses' perception.
- Rating form to examine the content and face validity of the designed tool.

## PROCEDURES

In this study, a methodological design was utilized to develop nurses' work- related stressors instrument. Critical literature review, as well as experts' opinions, were sought to develop initial items and to determine the concept dimensions. Then, the instrument was administered to the study sample. Finally, the psychometric properties of the instrument were tested according to validity and reliability.

### Development Process of the Research Instrument

**Phase1:** Developing an initial pool of items: first, a comprehensive literature review was done to determine all constructs and dimensions of the nurses work stressors to develop an initial pool of items for the instrument that should be relevant for the nurses work stressors dimensions. Secondly, part of the study sample (10%) was asked to list the different work stressors they experienced in their work setting. The obtained data from the literature review and nurses response to open- ended question were analyzed to develop the initial tool.

Overall, a review of the academic literature and relevant articles identified eight theoretical dimensions of nursing work stressors: job content stressors (stressors related to nature of the job), physical work environment, job role, work relationships, career development issues, organizational factors, work-home interface, death and dying. These dimensions yielded 67 representative items.

Regarding the nurse's response to the open- ended question, they list 15 different stressors they experienced in their work setting. These 15 stressors plus 67 stressors extracted from a comprehensive literature review are used to develop the initial tool (82 items).

**Phase 2: Validity Phase:** Once the selected items were identified, the initial instrument was assessed in terms of

face and content validity. First, to assess content validity, a content validity rating form was prepared by the investigator and given to 5 panels of experts from the faculty members and hospital nursing administrators to evaluate the instrument. The assessment was done based on Waltz and Bausell content validity index (CVI). The experts evaluated each item in the initial tool using four points Likert scale ranging from 1 to 4 where 1= not relevant, 2= somewhat relevant, 3=quite relevant, 4= very relevant. The score for content validity index (CVI) for each item was calculated by dividing the number of agreed experts (who scored 3 and 4 in the Likert scale) by the total number of experts. The item was accepted if the CVI was  $\geq 0.79$  and invalid items were omitted {19}. Based on the content validity index values 16 items were omitted from 82 total items.

For face validity, a panel of experts was asked to assess the tool's items for fluency, item wording, response format, instrument length and overall opinion about the format of the suggested tool. All suggestions and comments given by experts and nurses were considered in developing the initial tool.

To fulfill the aim of the current study an official permission was obtained from the medical director and nursing director of all the study hospitals. Upon receiving the formal approval through formal channels, the investigator obtained a list of all nurses working in different hospitals departments from the nursing director's office. Then the investigator selected the study sample that meets the criteria. Then collect the data, the investigator met the nurses at their working departments and units either individually or in groups, explained what is the main idea and purpose of the study, then the initial tool distributed to main study nurses and all tests are done based on it.

The time spent to fill the initial tool ranged between 20 to 30 minutes. This has been done on a regular basis: two times a week during the three shifts (morning, afternoon, and night) until all the data had been collected. Data were collected in an eight months period from October, 2016 until May 2017. The return rate was 100%

Additionally to identify the construct validity of the proposed instrument the investigator used exploratory factor analysis method to explore the categories of items with the highest relativity. Construct validity refers to the degree to which inferences can legitimately be made from the operationalizations in your study to the theoretical constructs on which those operationalizations were based {21}. The procedure of factor analysis indicated three factors in the final version of the tool, namely: stressors related to leadership behaviors, nature of the nursing role, and psychological burden with considerable 20 items loading from 66 items.

**Phase 3:** Reliability phase: finally the final version of the tool (20 items) distributed to 65 nurses outside the study sample to estimate the final tool reliability. The reliability estimation measure that used in the current study is internal consistency reliability. Internal consistency reflecting the extent to which each item measures the same construct by creating an average of all possible inter-item correlations was investigated using Cronbach's alpha coefficient. An acceptable coefficient for internal consistency should be between 0.70 and 0.80 and more {22}.

## **STATISTICAL DESIGN**

The data collected were coded and entered into the Statistical Package for the Social Sciences (SPSS), version 20.0 for analysis. The data were analyzed using descriptive statistics in the form of a frequency distribution, percentages and mean. Content validity index was also used to test the validity items. The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy and Bartlett's test of sphericity (which examine the suitability and adequacy of items for factor

analysis), total variance explained (which examine the appropriateness of items for factor analysis) and scree plot (which estimate the number of factors that can be generated from the factor analysis) was used for factor analysis. Additionally Rotated factor matrix with Varimax rotation was used to load the accepted items in different categories. Cronbach's Alpha was used to determine internal consistency reliability.

## RESULTS AND DATA ANALYSIS

**Table 1: Nurses' Socio-Demographic Characteristics (n=625)**

Item	NO.	%
<b>A- Age</b>		
1- 20- <25	99	15.8
2- 25- <30	107	17.1
3- 30- <35	99	15.8
4- 35- <40	158	25.3
5- 40- <45	90	14.4
6- 45- <50	50	8.0
7- 50- <55	14	2.2
8- 55- <60	8	1.3
Mean± SD	35.32 ± 8.43	
<b>B- Gender</b>		
1- Male	116	18.6
2- Female	509	81.4
<b>C- Marital Status</b>		
1- Single	106	17.0
2- Married	483	77.3
3- Widow	23	3.7
4- Divorced	13	2.1
<b>D- Academic qualification</b>		
1- Bachelor of nursing science	109	17.4
2- Associate degree	115	18.4
3- Nursing Diploma	389	62.2
4- Nursing specialty degree	12	1.9
<b>E- years of experience</b>		
1- 2-6	30	4.8
2- 7-11	101	16.2
3- 12-16	141	22.6
4- 17-21	176	28.2
5- 22-26	86	13.8
6- 27-31	29	4.6
7- 32-37	62	9.9
Mean± SD	14.98 ± 7.94	

**Table 2: Work Stressors as Perceived by Nurses (Open Ended Question Response) (n=60)**

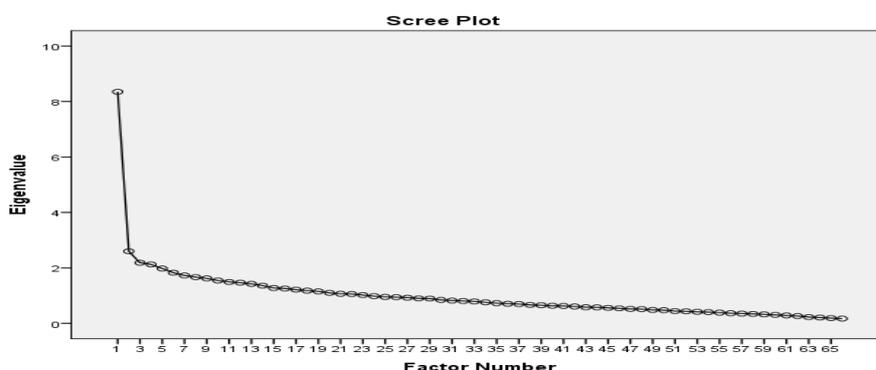
Work Stressors	Nurses No.	%
1. Inferiority looks to the nursing staff from others.	59	98
2. A physician not being present in a medical emergency.	57	95
3. Fear of hospital acquired infection.	56	93
4. Lack of recognition or reward for doing a good job or complete the work efficiently.	55	91.6
5. Patient's relatives ask unacceptable or illogical things (e.g. residence with patient inside intensive care unit).	54	90
6. Physical and verbal abuse from patients.	53	88
7. Exposure to harassment or blame from patient relatives.	53	88

**Table 2: Contd.,**

8.	Improper interpersonal communication.	52	86.6
9.	Conflict with the medical staff.	50	83
10.	Assigned to a lot of non-nursing activities, such as clerical work.	50	83
11.	Absence of policies and procedures in hospital.	50	83
12.	Covering nursing shortage in other departments.	48	80
(T)	raffic jams and Public transport	46	76.6
13.	Experiencing prejudice or discrimination	45	75
14.	Inadequate supplies and resources to accomplish the work tasks.	35	58

**Table 3: The Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy and Bartlett's Test of Sphericity**

Scale Name	KMO Measure of Sampling Adequacy	Bartlett's Test of Sphericity	
		DF	P Value
Nursing work stressors (NWS) tool	0.74	2145	0.00



**Figure 1: Scree Plot for Factor Analysis of the Nursing Work Stressors Tool**

**Table 4: Rotated Factor Matrix (Factor Loadings) of Nurses' Work Stressors Items with Varimax Rotation**

Items	Factor		
	I	II	III
1. Shortage in the number of staff nurses to adequately cover the unit at shift.	0.490		
2. Being assigned to tasks outside the scope of my responsibilities.	0.411		
3. Negative Criticism by a supervisor.	<b>0.496</b>	0.345	
4. Unfair nomination to attend staff development sessions, courses & workshops.	<b>0.456</b>	0.350	
5. Promoted from a position to a higher one with more responsibility without preparation.	0.421		
6. Being passed over the promotion.	<b>0.407</b>	0.311	0.317
7. Not informed with the decisions or changes regarding the work matters.	0.424		
8. Incompatibility of work hours and family responsibilities.	0.399	<b>0.409</b>	
9. No opportunity for promotion.		0.428	
10. Blaming the staff nurses in case of any mistakes for the patient.		0.632	
11. No participation in making decisions related to work.		0.420	
12. Lack of meetings to discuss work problems.		0.461	
13. Lack of support between staff nurse at work.		0.410	<b>0.531</b>
14. The death of a patient with whom you developed a close relationship.		0.323	<b>0.465</b>
15. Inferiority looks to the nursing staff from others.	0.317		<b>0.503</b>
16. Being assigned to complex tasks.			0.412
17. Lack of clarity about the responsibilities of others.			0.472
18. Inadequate training to accomplish the work duties efficiently.			0.466

19.	Watching a patient suffer.			0.624
20.	Patient relatives ask unacceptable or illogical things (e.g. residence with patient inside intensive care unit).			0.582

**Table 5: Total Reliability Analysis of Nurses' Work Stressors Final Tool**

Item	mean	SD	Corrected Item-Total Correlation	Cronbach's Alpha If Item Deleted
1. Shortage in the number of staff nurses to adequately cover the unit at shift.	4.53	0.92	0.383	0.870
2. Being assigned to tasks outside the scope of my responsibilities.	4.19	1.09	0.261	0.872
3. Negative Criticism by a supervisor.	4.10	1.17	0.349	0.870
4. Unfair nomination to attend staff development sessions, courses& workshops.	3.94	1.13	0.523	0.868
5. Promoted from a position to a higher one with more responsibility without preparation.	3.97	1.27	0.361	0.870
6. Being passed over the promotion.	4.14	1.13	0.543	0.868
7. Not informed with the decisions or changes regarding the work matters.	3.98	1.17	0.372	0.870
8. Incompatibility of work hours and family responsibilities.	4.07	1.10	0.549	0.868
9. No opportunity for promotion.	3.90	1.16	0.480	0.869
10. Lack of support between staff nurse at work.	4.08	1.20	0.498	0.868
11. Blaming the staff nurses in case of any mistakes for the patient.	4.27	0.98	0.558	0.868
12. No participation in making decisions related to work.	4.20	1.04	0.461	0.869
13. Lack of meetings to discuss work problems.	3.23	1.30	0.225	0.872
14. The death of a patient with whom you developed a close relationship.	4.07	1.01	0.354	0.871
15. Inferiority looks to the nursing staff from others.	4.32	1.03	0.367	0.870
16. Being assigned to complex tasks.	3.30	1.39	0.274	0.872
17. Lack of clarity about the responsibilities of others.	3.30	1.41	0.302	0.871
18. Inadequate training to accomplish the work duties efficiently.	3.97	1.06	0.364	0.870
19. Watching a patient suffer.	3.96	1.03	0.343	0.871
20. Patient relatives ask unacceptable or illogical things (e.g. residence with patient inside intensive care unit).	4.35	0.88	0.457	0.870
<b>Total Alpha Coefficient's Score for the Final Tool</b>	<b>0.87</b>			

## DISCUSSIONS

Nursing is the largest segment of the healthcare workforce and an integral part of the healthcare system. The nurses are working on the front lines of patient care, which leads them to play many roles in helping the individuals, families and groups to determine and achieve their physical, mental, and societal needs {23}. So during the last decades, the awareness of nursing stress and its consequences has grown. However, there has been little effort to develop a reliable and theoretically valid instrument that can be used to measure frequency and sources of nursing stress {24}.

The present study aimed to develop and validate an instrument to assess nurses' work-related stressors at the New Kasr El-Aini Teaching Hospital, Om Elmasryeen hospital and El-Sheikh Zaiied Specialized Hospital. Thus, the study fulfills the following objectives: (1) Developing an instrument to assess nurses' work-related stressors; (2) Testing the psychometric properties of the developed instrument.

The Findings of the current study are discussed in this chapter under the following parts: part (1) demographic characteristics of the study nurses (main data collection); part (2) Developing an initial pool of items for nurses' work stressors tool; part (3) construct validity of the initial nurses' work stressors tool based on main data collection (factor loadings)

### **Part 1:** Demographic characteristics of the study nurses

As regards the demographic characteristics of the study nurses, the findings indicated that nurses are young generations ( $35.32 \pm 8.43$ ). This may be due to the fact that the expansion of health care services, especially in the private sectors leads to increasing needs for nurses. As a result, nursing education programs at all levels are expanded which resulted in increased number of young graduate nurses compared to those who retired from the service. Also, nurses' young age is reflected in their short years of experience. The nurses' young age means that they will be in service for long years, so staff development activities should be an integral component of the nursing service department. Nursing work stressors and the stress management should be emphasized during the orientation program.

As regards the nurses' gender, the study showed that the largest percentage of the nurses was females. This could be due to the fact that male enrollment in the nursing programs is considerably recent in Egypt. Also, nursing is still widely perceived as a feminine profession; accordingly number of male enrolled in nursing is small compared to female. However, male enrollment in nursing is increasing during the last few years. Male in nursing could empower the nurses' role. This may be interpreted by the observations that to some extent male nurses can tolerate the stress in situations where female nurses cannot. Also, male voices are heard more than female in our culture. This view is consistent with {25} who reported that female nurses had significantly higher stress levels than males as a result of personal characteristics of male as a dependant, courage, ambitious and assertive. However, this view is contradicted with {26} who found that male nurses have experienced more job stress than female nurses and they have more stress from interpersonal conflicts.

The study results indicated that the largest percentage of the study nurses having a nursing diploma degree compared to small percentage having an associate degree and baccalaureate degree. This could be explained by the fact that the college education programs and associate degree programs are much smaller compared to the diploma programs. Additionally, the demands of Arab countries for baccalaureate nurses encourage them to work there, motivated by high salaries offered to them. Also, employing diploma nurses may be perceived by the hospital administrators as mean for decreasing the cost of nursing care as reported by {27}. Also, the hospital administrators resort to diploma nurses to manage nursing manpower shortage {28}. It was noted that hospital administrators make optimum utilization of the available baccalaureate nurses by assigning them to leadership positions. Also, it is noted that the largest percentage of the study nurses were married and occupy a staff nurse position.

### **Part II:** Developing an initial pool of items for nurses' work stressors tool

Regarding the nurses' response to the open-ended question about the work -stressors they experienced in the

work setting, the results of the current study revealed 15 items. The majority of the nurses mentioned that inferiority look to the nursing staff from others is work stressor. Being respected is a basic need for the individual as it influences dignity and self-worth. {29} mentioned that the collaborative nurse-physician relationship leads to better patient and organizational outcomes. Nurses are motivated to higher performance when there is a respectable relationship within the hospital and be respected by others, especially by medical staff as well as cooperative services employee. However, it is important to emphasize that nurses' role behavior is the main factor in gaining respecting of others which will be reflected in a positive attitude toward the nursing profession as well improvement of the professional image.

Also, the majority of nurses mentioned that physician not being present in a medical emergency is work stressor. As physicians in healthcare systems enjoy great authority, makes the key decisions about patient medical diagnosis and treatment and issues orders that nurses are expected to follow, so without the physician, the nurses cannot perform their duties effectively. {30} found that doctors in Egypt have been unhappy with working conditions and the health system in general for quite some time. They often work under a lot of pressure and in challenging conditions characterized by understaffing, a shortage of drugs and equipment, a lack of hospital beds and poor infection-control standards which may be revealed their absence.

Additionally, the majority of nurses mentioned that fear of hospital-acquired infection is a work stressor. This result consistent with {31} who found that a lot of workers who have to come into contact with infected patients share their worries about potential exposure to infection, especially among those working on the front lines like nurses, who worry that they are not being properly equipped to deal with the situation or worry to deliver the infection to their family. Thus, it is necessary to equip the nurses with the knowledge and skills to deal with infectious disease.

**Part III:** Construct validity of the initial nurses' work stressors tool based on main data collection (factor analysis).

Regarding the results of factor analysis for the work stressors items, the analysis yielded three factors (1. stressors related to leadership behavior, 2. nature of nursing role, and 3. Psychological burden) with considerable loadings for 20 items. Regarding the first factor; stressors related to leadership behavior included seven items. Shortage in the number of staff nurses to adequately cover the unit at shift was the first item. This result is consistent with {17} who mentioned that the nursing shortage is one of the most significant stressors for nurses. This may be due to the fact that the expansion of health care services, especially in the private sectors leads to increasing needs for nurses. On the other hand, many nurses are seeking to change their career or early retired because the inadequate pay or they are stressed by limited resources and increasing demands on their services. This view is consistent with {32} who conducted cross-sectional research design to examine the relationship between nurses' occupational stress and their intention to leave the hospital; clarifying the major sources of stress were inadequate to pay, inequality at work, too much work, staff shortage, lack of promotion, job insecurity and lack of management support.

Being assigned to tasks outside the scope of my responsibilities was the second item. This result was consistent with {33} who found that nurses are spending significant amounts of time in non-nursing activities as cleaning patient's rooms and equipment, clerical duties and obtaining supplies and equipment, which consumed nurses' effort, reflected negatively on their role and causing psychological stress. Also, {33} found that nurses spent 32.8 per cent of their time in direct care, 55.7 per cent in indirect care, nine per cent on non-nursing tasks and 2.5 per cent on personal activities. All of

this may indicate the importance of nurse aids and administrative clerk to relieve nurses from non-nursing duties to enable them to fulfill their role.

The third and fourth items were negative criticism by a supervisor and unfair nomination to attend staff development sessions, courses, and workshops. This result is consistent with {34} who mentioned that there are many forms of stressful situations among staff nurses and their supervisors as lack of justice in the distribution of incentives and rewards, permanent disagreement with supervisors because of unfair distribution of the cases and tasks, negative criticism and feedback. All of these situations increase the stress level between the nurses and sometimes reflect negatively on their performance, attitude, job satisfaction, and retention.

Clinical supervision is an effective way to improve the quality of healthcare. A clinical supervisor has an important role in guaranteeing quality nursing care and improvement of patient care and helps in relieving the nurses' work stress {35}. Therefore, it is necessary to enable supervisors to play a worthy role in clinical supervision at work. Also, it is very important that the process of training and preparation be done for supervisors. Additionally, the training should be done for staff nurses when promoted from one position to higher one. As reported in the fifth item the promotion without training is considered as work stressor.

Being passed over the promotion was the sixth stressor in the first factor. Workplace discrimination of any kind is unacceptable and illegal, but promotion discrimination is especially damaging because it affects the nurse's career prospects, income potential, reputation and psychological status {25}. So it is necessary that promotion of nurses should be based on clear criteria and announced professional competencies to assure fair opportunity for all staff. Additionally, this result is congruent with {36} who mentioned that, workplace discrimination is an additional workplace stressor which affects nurse, physical and psychological well being, the quality of patient care, and healthcare organizational costs.

Not informed of the decisions or changes regarding the work matters was the seven and last stressor in the first factor. This result is consistent with {26} who refer to the importance of empowering the nurses to perform their role effectively and pointed to the information support as the most powerful method to empower the nursing staff. Thus, it is important for nurse managers to keep their staff aware and updated with the information and decisions concerned with their work.

Regarding the second factor, stressors related to nature of the nursing role included five items. Incompatibility of work hours and family responsibilities was the first item. This result is consistent with {37} who pointed out that Nurses have many responsibilities in their workplace while needing to manage their families as well. Nurses work-family conflict occurs when workplace responsibilities interfere with family life, such as inflexible working hours, work overload, interpersonal conflict at work and unsupportive supervisors in the organization. Therefore, maintaining a balance between work and family responsibilities has become a challenge for working people especially for women. Like in many other countries, nursing is a female-dominated occupation in Egypt; furthermore, the oriental culture puts the major family responsibilities on women shoulders which causing great work stress for nurses.

The fact that there are few opportunities for promotion and advancement in the nursing profession creates a breeding ground for occupational stress among nurses {38}. This view is consistent with the second item of the second factor in the present study (no opportunity for promotion). Additionally, {39} mentioned that stifled professional growth in terms of lack of opportunities for promotion and continuing education are additional contributing factors to occupational

stress and burnout. So nurses need to be promoted to flourish and develop in their profession. When working in an organization, nurses usually think about career progression and promotion after gaining experience and professional skills. Staff promotion motivates them and helps them to develop a sense of value. Following advancement, they feel greater commitment and responsibility toward their jobs.

Blaming the staff nurses in case of any mistakes for the patient was the third stressor of the second factor in the present study. From the investigator point of view, the power imbalance between physicians and nurses in the healthcare systems in Egypt is well known. In the Egyptian society, physicians commonly experience significant prestige, respect, and financial success. In contrast, nursing does not enjoy as much societal respect or financial compensation. This imbalance exposes the nurses to be blamed for any mistakes even they did not do. So, it is important to delegate enough power and authority to nurses to balance the power between them and physicians.

No participation in making decisions related to work was the fourth item. This result is consistent with {4} who found that limited nurses' participation in decision-making regarding the hospital policy and patient care causing work stress and decline the nurses' job satisfaction and commitment. Therefore, it is recommended that institutions should adopt a policy of planning and be managing human resources to encourage the participation of health professionals in decision-making, with a view to the reduce job stress among nurses. Regarding the fifth and the last item in the second factor was lack of meetings to discuss a work problem. This result is consistent with {5} who found that nurses working in units that held frequent staff meetings reported significant decreases in role conflict and role ambiguity, which in turn were associated with a reduction in self-reported emotional stress and an increase in job satisfaction. The intervention also had other positive effects, including an increase in nurses' perceptions of their ability to have influence over their work. This may be due to that meeting give an opportunity for nurses to ask questions or express themselves, also to receive feedback regarding their work.

Regarding the third factor, psychological burden, included eight items. Lack of support of staff nurses at work was the first stressor in the third factor. Nurses are expected to provide good-quality care by diagnosing and treating human responses to health and illness and empower their clients, but they must become empowered before they can empower others. It is obvious that the performance of nurses can be affected by both their empowerment and the social and psychological conditions of the workplace {40}. This result is consistent with {40} who found that non supportive behaviors of the nursing managers to their staff increase their job stress level and negatively affect their performance. Nurses support can be provided in the form of encouragement to creativity, innovation, and continuous learning opportunities in the workplace, protection of nurses rights, rapid response to their complains and participation in the work matters decisions.

The current study revealed that death of patients with whom you developed a close relationship was the second stressor of the third factor. This result is consistent with {11}, who found that 'death and dying' was the strongest stressor perceived by Jordanian nurses. Nurses, in their clinical work place are frequently exposed to patient deaths. Nurses' personal attitudes towards death and dying may influence their quality of care they provide during the terminal stages of a person's life. Therefore, nurses need skills and experience to manage such burden. Also, they need to learn to accept death as a part of career life rather than experience it as a clinical failure {41}. The third stressor of the third factor was Inferiority looks to the nursing staff from others.

Regarding the fourth work stressor in the third factor was being assigned to complex tasks. This result is congruent with {42} who conducted a real-time repeated measures to assess the effect of complex nursing tasks and demands on psychological stress, physiological stress, and job performance and concluded that there is a relationship between stress level and specific nursing tasks. Additionally, {18} mentioned that nurses often experienced stress through problems with work tasks if they do not have the necessary skills or capacities to perform the required tasks.

Role clarity is a crucial issue for effective inter-professional collaboration. Poorly defined roles can become a source of stress and conflict in clinical teams and reduce the effectiveness of care and services provided to the patient {43}. This is consistent with the fifth stressor in the third factor in the current study which revealed that lack of clarity about the responsibilities of others is a source of stress. So role clarification in a clinical care team requires a detailed understanding of one's own professional role and those of others.

Several authors describe nursing as a stressful profession due to the responsibility for the life of others and the closeness to patients for whom suffering is practically inevitable. This requires that nurses have a great amount of dedication in the performance of their duties, and this demand may increase the probability that they will suffer from physical and psychological stress {1}{44}.

Watching a patient suffer and dealing with Patient's relatives who ask unacceptable or illogical things were the seventh and eighth stressors in the third factor. This result is congruent with {45} who conducted a cross-sectional descriptive study with the title of Nurses' Occupational Stress in Primary Health Care Evaluated in connection to organizational social context and found that nurses working in primary health care experienced stress related to situations when facing death, dying, watching patient suffer and when dealing with patients and their families. Also, this result consistent with {44} who conducted A correlational study about The impact of occupational stress on nurses' caring behaviors and their health-related quality of life and concluded that Contact with death, patients and their families, and uncertainty about the therapeutic effect caused significantly higher stress among nursing staff.

One of the most important factors, when talking about the achievement of employee work responsibilities and providing good quality of care, is making sure that nurses adequately trained for their jobs. If nurses have not been properly trained, then they could eventually feel unsatisfied at work, feeling the stress from their job, and not performing as well {46}. As found in the current study, inadequate training to accomplish the work duties was the sixth stressor in the third factor. Additionally, {46} stated that there is a correlation between poor training programs and feeling the stress from employee job.

## **CONCLUSIONS AND RECOMMENDATION**

This study was undertaken to develop and validate an instrument to assess nurses' work -related stressors at selected hospitals. The present study demonstrated a short valid and reliable instrument to assess the nurses work stressors. The instrument is convenient for use by healthcare managers in different medical situations. Further studies using the developed tool are recommended to be used for representative samples of Egyptian nurses to identify the dimensions of stress in Egyptian nurses and compare them with results included in the literature.

The final version of the tool included 3 main dimensions with considerable loading for 20 items. Dimensions were given suitable headings as follows; (1) stressors related to leadership behaviors, (2) nature of the nursing role, and (3)

psychological burden. There are seven items are grouped into the first dimension (Shortage in the number of staff nurses to adequately cover the unit at shift, Being assigned to tasks outside the scope of my responsibilities, Negative Criticism by a supervisor, Unfair nomination to attend staff development sessions, courses& workshops, Promoted from a position to higher one with more responsibility without preparation, Being passed over the promotion, and Not informed with the decisions or changes regarding the work matters).

Also, five items are grouped into the second factor (Incompatibility of work hours and family responsibilities, No opportunity for promotion, Blaming the staff nurses in case of any mistakes for the patient, No participation in making decisions related to work, and Lack of meetings to discuss work problems). Additionally, eight items are grouped into third factor (Lack of support between staff nurse at work, The death of a patient with whom you developed a close relationship, Inferiority looks to the nursing staff from others, Being assigned to complex tasks, Lack of clarity about the responsibilities of others, Inadequate training to accomplish the work duties efficiently, Watching a patient suffer, and Patients relatives ask unacceptable or illogical things). Reliability was assessed and revealed an internal consistency (Cronbach alpha=0.87), indicating the stability of the tool with a high internal consistency of the tool items as well as the relevance of the items composing the tool.

## RECOMMENDATION

Based on the findings of this study, the following recommendations were deduced:

- **For Education**

- Nursing education organizations should emphasize teaching stress management methods in their academic curricula for the sake of both patients and students.
- Communication skills and diplomatic skills should be emphasized in the nursing educational programs because they could be helpful to manage the work stress.

- **For Clinical Practice**

- Health organization should create a good work environment for the nurses to practice their role through emphasizing the nurses' rights, better communication, mutual respect between nurses and physicians, respect and appreciation by the health team members for the nurses
- Nurses workload should be reasonable and relieving them from non -nursing tasks
- Improvement of the staff nurses' performance through continuous training.
- Stress management should be a basic component of nursing orientation programs.
- Establish clear and specified job description for nurses contain their direct nursing care responsibilities only and made it published.
- Preparation and training should be done for staff nurses when promoted from one position to higher one.
- Nursing administrative positions should be trained on the clinical supervision and the art of giving the feedback.

- Nurses' promotion should be based on clear criteria and announced professional competencies to assure fair opportunity for all.
- **For Scientific Research**
  - Further studies are recommended about the use of the tool on representative samples of Egyptian nurses.

## ACKNOWLEDGEMENTS

First of all, I would like to thank ALLAH for helping me to accomplish this work. I would like to express my deepest thanks and gratitude to Prof. Laila Mohamed Abdo, Professor of Nursing Administration, Faculty of Nursing, Cairo University, for her guidance, supervision, and efforts for the fulfillment of this work.

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