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Work Engagement of staff nurses and its Relation to Psychological Work Stress

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Abstract: Background: Working in hospitals is increasingly complex and is inherently stressful. Nurses often work in stressful and problematic practice environments that can adversely decrease their work engagement. **The study aimed** to assess the relationship between work engagement and psychological stress of work among hospital nurses at University and Teaching hospitals. **Design:** A descriptive-correlation research design was utilized. **Setting:** Conducted at different clinical units and departments at University and Teaching Hospitals. **Subjects:** A convenience sample consisted of 412 nursing staff who is working in the previous setting. **Tools:** A questionnaire composed of the Utrecht Work Engagement Scale (17item), and Psychological Work Stress Questionnaire (27item). **Results:** There was a negative correlation between total work engagement and total psychological work stress variable ($r = -0.331 < 0.001$). **Conclusions:** There was highly statistical difference which moderate work engagement was significantly associated with moderate psychosocial stress. There was no statistical difference between nurses working at the university hospital and teaching hospital mean scores in all parameters of work engagement and work stressors, while the only statistically significant difference was found between absorption parameter of work engagement and nurses working at two hospitals. **Recommendations:** It is recommended that hospital administrators must create an attractive work environment in an attempt to reduce the stress levels of work among nursing staff to increase their work engagement.

Keywords: Work engagement, psychosocial work stress, staff nurses

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I. Introduction

Working in Hospitals is increasingly complex and is inherently stressful. Nurses often work in stressful and problematic practice environments [1]. Nurses are subjected to high levels of occupational stress [2]. Stress is the complex psychological conditions derived from cognitive power of the person in accordance with the requirements of the job environment [3].

Work-related stress exacerbates psychological distress among workers [4]. The prevalence of significant psychological distress is particularly high among hospital nurses, due to severe stress caused by busy working schedules, the magnitude of their responsibility, and interpersonal conflicts, which once nurses develop psychological distress, rates of administrative leave and job turnover increase, potentially leading to medical errors and difficulties with patients [5]. Among healthcare professionals, nurses encounter the highest levels of occupational stress and particularly are vulnerable to many stressors and demands of the work environment that can unfavorably reduce their work engagement [6].

Major sources of stress for nurses are heavy workloads, leadership and management issues, inter-professional and intra-professional conflicts, emotional demands of caring, lack of reward, role ambiguity, and shift work [7]. Work stress experienced by nurses may lead to mental health problems as; depression, anxiety, and burnout and, physical health problems as; sleep disorder, cardiovascular disease, and low immunity) [8, 9]. Also, work stress leads to negative organizational impacts as; job dissatisfaction, decreased work performance, rapid turnover, deteriorated quality of service provision and work disengagement among nurses [10]. Furthermore, stress is associated with low efficiency, disability to perform, low initiatives, and lake of interest in working [11].

Work engagement is the engagement of the employee towards his or her work [12]. Work engagement is operationalized as a positive work-related perspective and is portrayed by vigor, dedication, and absorption. Vigor represents a high level of energy and mental strength while working; dedication refers to experiencing a feeling of essentialness, enthusiasm, and challenge; and absorption is portrayed by being totally engaged and absorbed in work [14].

Work engagement represents a “motivational process that is driven by the availability of resources”. Both job resources and personal resources may engage employees, who then “work hard (vigor), are involved (dedicated), and feel happily engrossed (absorbed) in their work” [15].

Work engagement in nursing is becoming strategically important as three important factors converge: a global shortage of nurses who are the largest group of healthcare providers; political resolve to restrain the growth of rising healthcare costs in industrialized nations; and a medical error rate that threatens the health of nations [13].

Mostly, organizations focus on its employees to attract, retain and engage them to achieve the organizational goal as well as boost productivity level. Nowadays, employee engagement is considered one of the most powerful tools to measure the level of outcomes of organizations towards its vision, mission, and core values [14].

The focus of work engagement is on strengths rather than weaknesses in work in the field of positive psychology. Work engagement has attracted the attention from various fields, in nursing services, previous studies have reported that high level of work engagement can enhance nurses’ job performance, satisfaction, and emotional health and reduce their turnover intention [17, 18, and 19].

Significant of the study

Engagement within the employee work role has been investigated within various industries and employee types; however, it has been the subject of minimal nursing research. Recent studies have revealed that many nurses are leaving their jobs, and furthermore are considering leaving the nursing field entirely **Lynn and Redman** [20], and **Oulton** [21]. **Fasoli**, [13] claims that disengagement is the reason for the high turnover among nurses.

The nurses are the key members of the health team are prone to problems as job burnout, physical, and mental stress, conflicts, and so on. Some of the research that has been done in recent years suggests that a stronger focus on creating work engagement can create a work environment that will motivate nurses to remain in their jobs. Despite research conducted internationally about work-related stress in nurses, little has been studied about stress and its relation to work engagement among nurses in Egypt. The researcher observed at different units in Menoufia University Hospital that some nurses intended to leave their workplace and searching for a work opportunity in another hospital due to many causes such as the workloads, shift work, rigid supervisors' relations, and lack of reward. Health Care organizations require stable, qualified and engaged nursing staff to provide effectively level of patient care and attain patient satisfaction. To develop and test interventions that impact nurses’ work engagement, there is a need to first understand its antecedents. Therefore, the aim of the current study was to determine the relationship between work engagement and psychological work stress among nurses.

Aim of the study

The aim of the current study was to assess the relationship between work engagement and psychological work stress among hospital nurses through the following objectives:

- 1- Assess the level of work engagement among nurses working in the study setting.
- 2- Assess the level of psychological work stress among nurses in the study setting.
- 3- Identify sources of work stressors among nurses in the study setting.
- 4- Determine the relationships between work engagement, and psychological work stress among nurses in the study setting.

The research questions

The research questions for this study were as follows:

- 1- What is the level of work engagement among nurses in the study setting?
- 2- What is the level of psychological work stress among nurses in the study setting?
- 3- What is the source of work stressors among nurses in the study settings?
- 4- What is the relation between work engagement, and psychological work stress among nurses in the study settings?

II. Material and Methods

Research design:

A descriptive co-relational design was used in conducting the study.

Setting:

The study was carried out in the University Hospital and Teaching Hospital at Menoufia governorate.

Subject:

The study sample composed of a convenience sample of staff nurses working in the all units at previous setting during the period of data collection. Their total number is 412 nurses (230 staff nurses from Menoufia University Hospital, and 182 from Teaching Hospital). The inclusion criteria for this study sample include: full time staff nurses who having working experience not less than one year and agrees to participate in this study.

Tools for data collection:

In order to fulfill the aim of the study, two tools were used for data collection.

First tool: Work Engagement Scale

This tool consists of two parts.

Part (I): Contain demographic characteristics of study subjects such as (age, sex, marital status, educational qualification, department and years of experience).

Part (II): Work Engagement Scale:

Designed by *Schaufeli and Bakker* [22] was used to assess nursing staff levels of work engagement. Utrecht Work Engagement Scale (UWES) consists of 17 items related to three dimensions: vigor (items 1 to 6), absorption (items 7 to 12), and dedication (items 13 to 17). All items are scored on a five-point frequency rating scale ranging from 1 (never) to 5 (always): (Never, Rarely, Sometimes, Very Often, and Always). Possible scores range from 1 to 85, with higher scores indicating higher work engagement. Therefore the scores of each dimension summed up and converted into percent scores. The work engagement was considered high if the percent score was $\geq 75\%$, moderate if the percent score was ranged from 60 to $<75\%$, while it considered low if the percent score $< 60\%$.

Second tool: Psychological Work Stress Questionnaire

It was developed by *Cohen et al.*, [23] and *Hussein* [24] and modified by the researcher to assess nurses' levels of work stress. This questionnaire included 27 question related to four dimensions of work stress: Nature and work conditions (Questions 1 to 10), Role conflict (Questions 11 to 15), Role ambiguity (Questions 16 to 20) and Workload (Questions 21 to 27). Participants responded on a 5-point scale ranging from "1" (strongly disagree) to "5" (strongly agree). Possible scores were in the range of 1 - 135, with higher scores indicating higher stress. Scores ranging from 1-45 would be considered low work stress, from 46-89 would be considered moderate work stress, and from 90 -135 would be considered high work stress.

Validity and reliability:

Tools of data collection were translated into Arabic and reviewed for their content validity by five experts was selected to test the content and face validity of the instruments. Necessary modifications were done to reach the final valid version of the tool. The tool was considered valid from the experts' perspective. The tools were tested for reliability by measuring their internal consistency using Cranach's alpha coefficient method. This turned to be ($\alpha = 0.92$) for Work Engagement Tool and ($\alpha = 0.86$) for Psychological Work Stress Tool. This indicates a high degree of reliability for the study tools.

Pilot study:

A pilot study was conducted to test the clarity and applicability of the study tools and estimate the time needed to complete the questionnaires. It was done on 10% of the total subjects, (41) nurses: (23 from University Hospital and 18 from Teaching Hospital) who not included in the present study. The time taken for every questionnaire to be completed was about 15-20 minutes for every subject. Modification and rearrangement of some questions was done and the final form was developed.

Fieldwork:

The data collection of the study was carried out in three months starting from March 2018 until the end of May 2018. After gaining the acceptance from nurses to participate in the study, the researcher explained the purpose and content of each tool to nurses and asked to fill them out throughout the different shifts and return it anonymously in the same day or at most the next day. The researchers were available for any clarifications or inquiries.

Administrative and ethical considerations:

All the relevant principles of ethics in research were followed. Before starting the practical work an

official letter clarifying the purpose of the study was obtained from the faculty dean of nursing to Nursing Directors of University Hospital and Teaching Hospital to conduct the study and collect the necessary data. Participants' consent to participate was obtained after informing them about their rights to participate, refuse, or withdraw at any time. Total confidentiality of any obtained information was ensured. The study maneuver could not entail any harmful effects on participants.

Statistical design

Categorical variables were expressed as proportions, and continuous variables were expressed as the mean \pm standard deviation (SD). The chi-square test was used to compare categorical data, and the t-test was used for continuous variables. The correlations of the different instruments were obtained using Pearson's correlation measurement. The results were considered statistically significant when $p < 0.05$. Standard statistical software (SPSS, Statistical Package for the Social Sciences, version 20, Chicago, IL, USA) was used for data processing.

III. Result

Table 1. Socio-demographic characteristics of the studied subjects (n= 412).

Socio-demographic characteristics	University Hospital (n = 230)		Teaching Hospital (n= 182)		X ² Test	P value
	No.	%	No.	%		
Age						
20- 29 yrs	178	77.4	36	19.8	85.327	<0.001*
30-39 yrs	34	14.8	84	46.2		
40-49 yrs	16	7	50	27.5		
\geq 50 yrs	2	0.9	12	6.6		
Sex						
Female	188	81.7	170	93.4	12.144	<0.001*
Male	42	18.3	12	6.6		
Marital status:						
Single	44	19	8	4.4	23.816	0.008*
Married	178	77.5	158	86.8		
Divorced	4	1.7	10	5.5		
Widowed	4	1.7	6	3.3		
Qualification						
Nursing diploma	24	10.4	88	48.4	47.526	<0.001*
Associated degree	160	69.6	52	28.6		
Bachelor degree	38	16.5	36	19.8		
Postgraduate	8	3.5	6	3.3		
Experience years						
< 5 yrs	70	30.4	14	7.7	30.326	<0.001*
5-10 yrs	94	40.7	40	22		
> 10 yrs	66	28.7	128	70.3		

* $p < 0.05$

Table 1 displays the socio-demographic characteristics of the studied subjects. As indicated in the table, the majority (77.4%) of the studied subjects had their age from 20 to 29 years at University Hospital. The most of the studied nurses were female and married at two Hospitals. Concerning nursing qualification, the highest percentage were holding technical nursing institute (69.6%) at the university hospital. However, the highest percentage (70.3%) of nurses had more than ten years of experience at the teaching hospital. Also, there were highly statistically significant difference among the university hospital and teaching hospital related to (age, sex, marital status, qualification, and experiences).

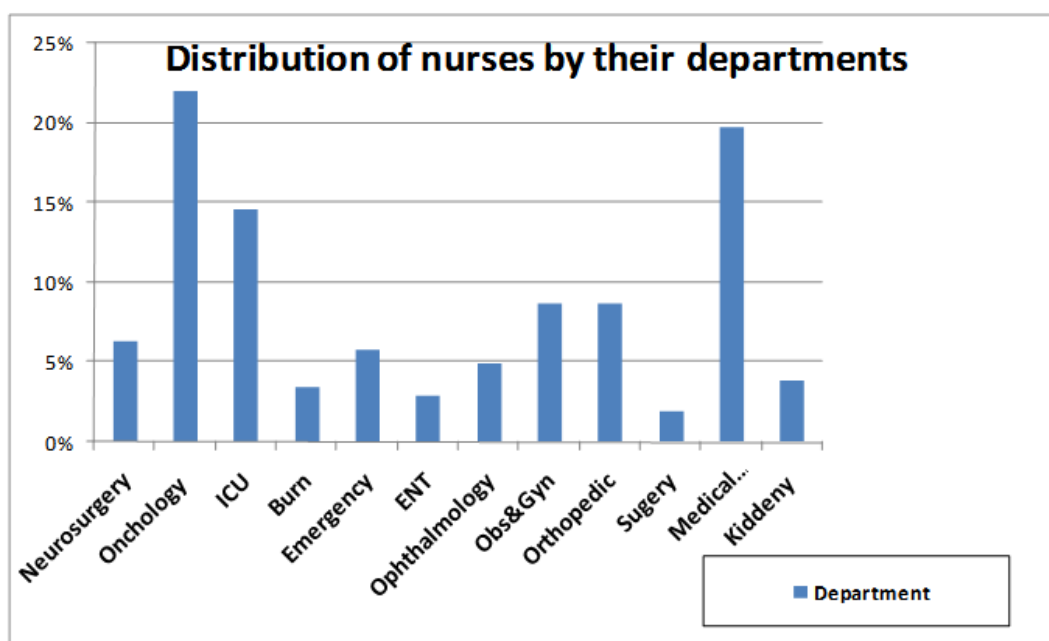


Fig1. Distribution of nurses by their departments.

Figure 1 illustrates the distribution of nurses according to departments. There were (23%) of the study subjects working at the oncology department followed by (20%) were working at the medical departments.

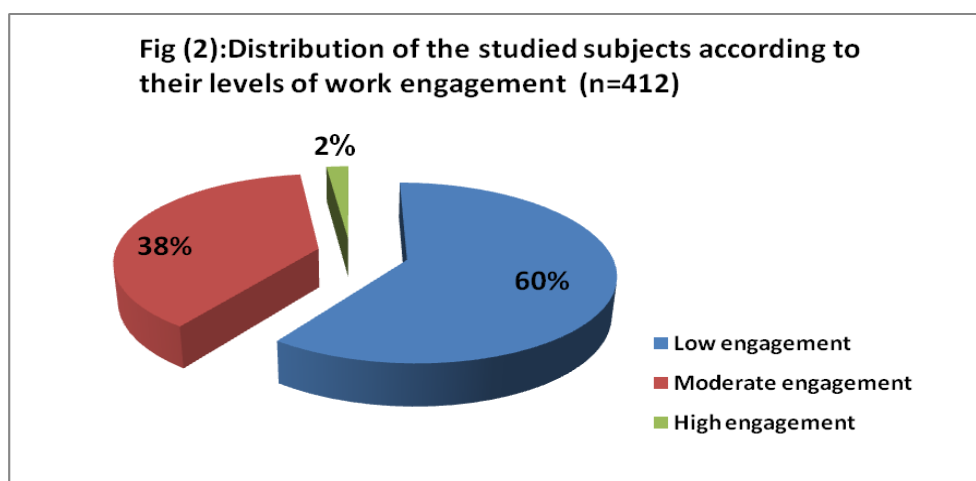


Fig 2. Distribution of the studied subjects according to their levels of work engagement.

Figure 2 illustrates the distribution of the studied subjects according to their levels of work engagement. It showed that approximately two-third (60%) of the studied subjects are considered to have a low level of their work engagement. Moreover, the figure indicates that (2%) of the study subjects had a high engagement to their work.

Fig (3):Distribution of the studied subjects according to their levels of work psychological stress (n=412)

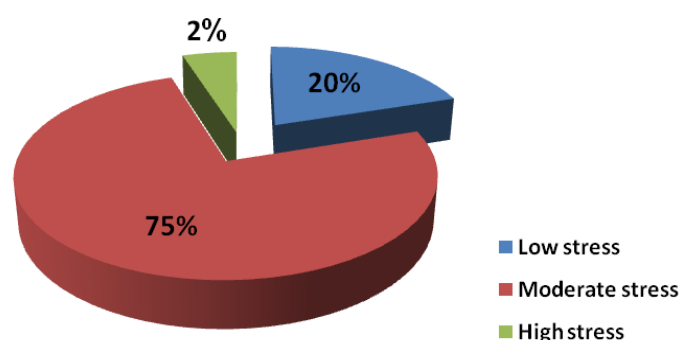


Fig 3. Distribution of the studied subjects according to their levels of psychological work stress.

Figure 3 illustrates distribution of the studied subjects according to their levels of psychological work stress. It showed that the greatest percentage (75 %) of the studied subjects reported moderate levels of psychological stress to their work. Moreover, the figure indicates that (5%) of the study subjects had a high psychological stress to their work.

Table 2. Distribution of the studied subjects according to their levels of work engagement and work psychosocial stress in the study setting (n= 412).

Items	University (n=230)		Hospital (n=182)		X ² test (P-value)
	No.	%	No.	%	
Work engagement levels:					
• Low	124	53.9	124	68.1	11.732 (0.003) *
• Moderate	100	43.5	58	31.9	
• High	6	2.6	0	0.0	
Work psychosocial stress levels:					
• Low	42	18.3	34	18.7	2.206 (0.332)
• Moderate	180	78.3	136	74.7	
• High	8	3.5	12	6.6	

* $p < 0.05$

Table 2 illustrates the distribution of the studied subjects according to their levels of work engagement and work psychosocial stress in the study setting. It showed that regarding the level of the nurses' work engagement and hospitals indicates that the highest percentages of nurses (68.1%) who had work in teaching Hospital had a low level of work engagement. Conversely, the lowest percentages of nurses (2.6%) who had work in the university hospital had a high level of work engagement. They were highly statistically significant, $p = 0.003$. And regarding psychosocial stress level and hospitals indicates that the highest percentage of nurses who had work in university teaching and hospitals (78.3%, 74.7% respectively) had a moderate level of psychosocial stress. There is no statistically significant difference.

Table (3): Comparison between of work engagement and work psychosocial stress levels (n= 412).

Table (3). Comparison between of work engagement and work psychosocial stress levels (n= 412).								
Work psychosocial stress levels		Work engagement levels						X ² test (P-value)
		Low (n= 248)		Moderate (n= 158)		High (n= 6)		
		No.	%	No.	%	No.	%	
•	Low	4	1.6	68	43.1	4	66.7	49.73 (<0.001) [*]
•	Moderate	228	92.0	86	54.4	2	33.3	
•	High	16	6.4	4	2.5	0	0	

* $p < 0.05$

Table (3) indicates that the highest percentages of nurses (66.7%) who had a high level of work engagement had a low level of psychosocial stress. Conversely, the highest percentages of nurses (92.0%) who

had a low level of work engagement had a moderate level of psychosocial stress. They were highly statistically significant, $p < 0.001$.

Table 4. Mean score of total work engagement, total work stressors and each parameter as reported by the studied subjects (n= 412).

Parameters of work engagement and work stressors	University Hospital (n = 230) Mean \pm SD	Teaching Hospital (n= 182) Mean \pm SD	T-test	P value
- Vigor	13.38 \pm 3.84	13.26 \pm 3.29	0.235	0.815
- Dedication	10.31 \pm 3.27	10.26 \pm 2.95	0.092	0.927
- Absorption	14.37 \pm 4.36	12.81 \pm 3.31	2.833	0.005*
Total work engagement score	38.06 \pm 10.07	36.34 \pm 7.65	1.349	0.179
- Nature and work conditions	23.41 \pm 7.79	23.40 \pm 6.69	0.011	0.922
- Role conflict	11.73 \pm 4.17	12.59 \pm 3.76	1.523	0.129
- Role ambiguity	13.05 \pm 4.26	12.53 \pm 3.56	0.923	0.357
- Workload	16.48 \pm 5.05	16.94 \pm 5.08	0.627	0.531
Total psychological work stress score	64.68 \pm 17.55	65.46 \pm 15.69	0.329	0.742

* $p < 0.05$

Table 4 illustrates mean score of total work engagement, total work stressors and each parameter as reported by the studied subjects. It presented that there was no statistically difference between nurses working at the university hospital and teaching hospital mean scores in all parameters of work engagement and work stressors, while an only statistically significant difference was found between absorption parameter of work engagement and nurses working at two hospitals (P- value= 0.005). As it is clear that university hospital nurses had the highest mean scores of total work engagement (38.06 \pm 10.07) than teaching hospital nurses (36.34 \pm 7.65).

Table 5. Pearson correlation between total work stressors score and domains of work engagement among the studied subjects (n = 412).

Variables	Total work stressors	
	r	P value
- Vigor	- 0.253	<0.001*
-Dedication	- 0.258	<0.001*
- Absorption	- 0.326	<0.001*
Total work engagement	- 0.331	<0.001*

* $p < 0.05$

Table 5 demonstrates a correlation between total work stressors score and domains of work engagement among the studied subjects. As evident from the table, there was statistical significance difference and a negative correlation between total work stressors score and total work engagement score and each domain related work engagement where $p < 0.001$.

Table 6. Pearson Correlation between total work engagement score and work stressors domains among the studied subjects (n = 412).

Work stressors domains	Total Work engagement	
	r	P value
- Nature and work conditions	- 0.287	<0.001*
- Role ambiguity	- 0.353	<0.001*
- Role conflict	- 0.268	<0.001*
-Workload	- 0.192	<0.001*
Total work stressors	- 0.331	<0.001*

* $p < 0.05$

Table 6 demonstrates a correlation between total work engagement score and work stressors domains among the studied subjects. As evident from the table, there was statistical significance difference and the negative correlation between total work engagement score and total work stressors score and each domain related work stressors where $p < 0.001$.

Table 7. Relation between levels of psychological work stress and demographic characteristics of the studied subjects (n=412).

Demographic characteristics	Psychological work stress level						X ²	P value
	Low (no =76)		Moderate (no=316)		High (no=20)			
	No	%	No	%	No	%		
Hospital								
University	42	55.3	180	57.0	8	40.0	2.206	0.332
Teaching	34	44.7	136	43.0	12	60.0		
Age							20.298	0.002 [*]
20- 29 yrs	31	40.8	175	55.4	8	40.0		
30-39 yrs	32	42.1	80	25.3	6	30.0		
40-49 yrs	7	9.2	53	16.8	6	30.0		
≥ 50 yrs	6	7.9	8	2.5	0	0.0		
Sex							11.298	0.004 [*]
Female	58	76.3	280	88.6	20	100.0		
Male	18	23.7	36	11.4	0	0.0		
<u>Marital status:</u>							1.688	0.793
Single	10	13.2	40	12.7	2	10.0		
Divorced	60	78.9	260	82.3	16	80.0		
Married	2	2.6	10	3.2	2	10.0		
Widowed	4	5.3	6	1.8	0	0.0		
Qualification							9.971	0.126
Nursing diploma	22	28.9	84	26.6	6	30.0		
Associated degree	40	52.6	166	52.5	6	30.0		
Bachelor degree	10	13.2	56	17.7	8	40.0		
Postgraduate	4	5.3	10	3.2	0	0.0		
Experience years							6.758	0.149
< 5 yrs	8	10.5	70	22.2	6	30.0		
5-10 yrs	30	39.5	98	31.0	6	30.0		
> 10 yrs	38	50.0	148	46.8	8	40.0		

* $p < 0.05$

Table 7 indicates the relation between levels of psychological work stress and demographic characteristics of the studied subjects. It illustrates that all studied subjects were suffered from work stress with different levels. The highest percentage of the high-stress level was noticed among Teaching hospital (60%) and among nurses below 30 years old (40%), while the lowest percentage was noticed among nurses above 50 years old. Also, the highest percentage of a high-stress level was noticed among nurses who had more than 10 years of experience (40%), while the lowest percentage was noticed among nurses less than 5 years of experience. All female nurses have a high-stress level. Also, the highest percentage of a high-stress level was noticed among divorced nurses (80%), and have a Bachelor degree in nursing. Age and sex of studied subjects and its relationship with work stress level were statistically significant ($p = 0.002$ and 0.004 respectively).

Table 8. Relation between levels of work engagement and demographic characteristics of the studied subjects (n=412).

Demographic characteristics	Work engagement level						X ²	P value
	Low (no =248)		Moderate (no=158)		High (no=6)			
	No	%	No	%	%	No		
Hospital								
University	124	50.0	100	63.3	6	100.0	11.732	0.003*
Teaching	124	50.0	58	36.7	0	0.0		
Age :							36.321	<0.001*
20- 29 yrs	102	41.1	106	67.0	6	100.0		
30-39 yrs	92	37.1	26	16.5	0	0.0		
40-49 yrs	42	17.0	24	15.2	0	0.0		
≥ 50 yrs	12	4.8	2	1.3	0	0.0		
Sex							15.809	<0.001*
Female	204	82.3	150	94.9	4	66.7		
Male	44	17.7	8	5.1	2	33.3		
Marital status							2.866	0.581
Single	28	11.3	24	15.2	0	0.0		
Married	206	83.1	124	78.5	6	100.0		
Divorced	8	3.2	6	3.8	0	0.0		
Widowed	6	2.4	4	2.5	0	0.0		
Qualification							29.499	<0.001*
Nursing diploma	76	30.6	36	22.8	0	0.0		
Associated degree	114	46.0	96	60.8	2	33.4		
Bachelor degree	52	21.0	20	12.6	2	33.3		

Postgraduate	6	2.4	6	3.8	2	33.3		
Experience years								
< 5 yrs	38	15.3	44	27.8	2	33.3		
5-10 yrs	64	25.8	66	41.8	4	66.7	37.178	<0.001*
> 10 yrs	146	58.9	48	30.4	0	0.0		

* $p < 0.001$

Table 8 indicates the relation between levels of work engagement and demographic characteristics of the studied subjects. It illustrates that all demographic characteristics of the studied subjects and its relationship with work engagement level were a highly statistically significant except marital statuses p-value equal (0.581) not significant.

IV. Discussion

Nurses are exposed to an extensive variety of periodic regulatory pressures that may lead to dissatisfaction, leading to absence and intent to stop their jobs. Work engagement plays an important role in advancing the goals of the organization and plays a key role in supporting and developing a healthy working environment [25]. This cross-sectional descriptive co-relational study had included 412 nurses with the aimed to assess the level of work engagement on participation and determine the relationship between psychological work stress and work engagement among nurses at hospitals.

Work engagement or employee engagements are terms used to describe a person who is involved and absorbed in their work roles and activities. There is evidence supporting that an organization will benefit significantly by having employees that are engaged in their work [26]. These benefits include staff retention and decreased turnover, increased profitability due to increased worker productivity, decreased absenteeism, and an increase in positive patient outcomes in clinical areas [26, 27].

The findings of the study indicated that there was statistical significance difference and a negative correlation between overall scores of work engagement and overall scores of psychological work stress. However; work stress was negatively related to work engagement this result agrees with **Mol et al.**, [28]. Also, the results showed that work engagement had a negative correlation with the total work stress variable ($r = -0.331 < 0.001$). This finding agrees with many studies suggest that job demands are hindering stressors that may lead to negative outcomes **Fiabane** [29] and **Van den Broeck et al.**, [30]. Also, **Mache, Vitzthum, Klapp, and Danzer** [31] determined there was a strong correlation between the level of work engagement and work pressure, which found with findings demonstrating increased work pressure negatively impacted the level of work engagement, suggesting that mitigating strategies be developed to assure a stronger functioning hospital organization. While the finding incongruity with **Al Khadhuri** [32] indicated that work engagement had a weak positive correlation with the combined job demands variable ($r = 0.299$).

The findings of the study examined the relationship between work engagement dimensions and psychological work stress: There was a significant negative strong correlation between work stress and vigor dimension ($r = -.253$; $p < .001$), and work stress and dedication dimension ($r = -.258$; $p < .001$), and relationship was found with absorption dimension ($r = -0.326$; $p < .001$). **Imamura et al.**, [33] reported that employees with a high level of work engagement have lower scores on stress. Also, **Veromaa, et al.**, [34] found that psychosocial risk factors have a negative relationship with work engagement. The findings of the present study were in line with previous studies reporting that employees with a high level of work engagement have lower scores on stress, anxiety, and depression.

Regarding assesses level of work engagement among nurses at the hospital. The present study findings indicate generally low levels of work engagement in both two hospitals. The findings in this study revealed the lowest level of overall work engagement ($M = 38.06$) for university hospital, whereas, More than half of the nurses have a lower level of work engaged to their work. As for the nurses working in the teaching hospital, the majority of them have a lower level of work engaged in their work. The highest percentage of the studied nurses reported low levels of their work engagement. Moreover, (2%) of the study subjects had a high engagement to their work. This findings agreement with **Swensen, Dilling, Mc Carty, Bolton, and Harper** [35]. Also, **Siller et al.**, [36] find that only 40.3 % of hospital team members are engaged in their work. In addition, the finding of the present study is consistent with **Fountain**, [37], and **Gabel-Shemuely, Dolan, & Suárez**, [38] reported that low work engagement is associated with undesirable effects such as an increased turnover rate, low job satisfaction and inadequate execution of job tasks and duties.

From the researcher point of view, the lower levels of work engagement among nurses may be their inability to adapt to changes in their environment and difficult move from one activity to another in comparison to other occupational groups as increased workload, lack of support from supervisors and co-workers and low salaries, especially in the teaching hospital. Thus, a low level of nurses' engagement poses a significant risk to the quality of patient care, patient outcomes, and organizational productivity.

Another finding in this study revealed that there was no statistically significant difference between university hospital nurses and teaching hospital nurses regarding total mean scores of their work engagement. It is found that nurses had the lowest mean scores of total work engagement in two hospitals. Moreover, nurses in a university hospital had higher mean scores than nurses in teaching hospital in regards to absorption subscale while nurses of two hospitals had lower mean scores regarding both vigor and dedication subscales. These findings are similar with (**Rivera et al.**, [37]; **Adriaenssens et al.**, [40]; **Bamford, Wong & Laschinger**, [41]; **Brunetto et al.**, [40]; and, **Trinchero, Burnetto, & Borgonovi**, [43]. In the same line, a study was done by **Jeanaro et al.**, [44] reported that the greatest percentage of staff nurses experienced high absorption. While **Abed and Elewa** [45] reported that staff nurses had the highest mean percentage of overall work engagement.

From the researcher perspective, result in this study revealed that nurses of the university hospital had the highest mean scores of work engagement than that of teaching hospital nurses in absorption subscale. This may be added to the conveyance of the distribution of the study sample according to their personal characteristics as the greatest percentage of the study nurses were had Bachelor and Associated degree in nursing in the university hospital and are more youthful age as well as a single. All these personal variables may prompt felling of absorption and more work involvement.

Regarding socio-demographic data; the present study indicated that there was statistically significant between work engagement and the demographic characteristics for the study samples. The results demonstrated that there was a high statistical significant ($p < 0.001$) between work engagement and the demographic characteristics for the samples from both hospitals. From the researcher point of view, these findings all indicated that a change in these demographic variables did have a significant influence on the level of work engagement except marital status variable did not have a significant influence. This finding agrees with **Baumgardner** [46] found a relationship between age and work engagement; specifically, older nurses were more engaged than younger ones. Also, **Lovejoy** [47] in a study in India, found that nurses with higher qualifications had significantly higher scores in all areas of engagement.

While, **Al Khadhuri**, 2018[32] indicated that there was a weak correlation ($r \leq 0.150$) between work engagement and the demographic characteristics for the samples from both countries. **Jenaro et al. (2011)** [48] discovered that years of experience in award did not impact the average levels of engagement, although later, in 2013, Bamford and colleagues found that the number of years of experience clarified 4.8% of the variance in engagement. Also, **Taipale et al.**, [49] also found that the demographic characteristics of participants were not statistically significant in explaining their level of work engagement.

As regarding assesses level of work stress among nurses, the present study findings indicate generally moderate levels of work stress in both two hospitals. The findings in this study revealed the moderate level of overall work stress ($M = 64.68$) for university hospital, and ($M = 65.46$) for teaching hospital among nurses participants in the study sample. Only 5% of nurses were high-stress level in their work, 20% were low-stress level in their work, and 75% of nurses reported moderate levels of stress in their work. This finding agreement with **Ghoreishinia et al.**, [50] showed that job stress in nurses is a moderate level and 21 percent of them experience a high level of stress. Also, Findings in a study in Sweden on nurses showed that 80 percent of nurses experience a high level of stress **Dagget et al.**, [51].

Regarding Socio-demographic data; the present study indicated that there were no statistically significant between work stress and the demographic characteristics for the study samples. The results indicated that the younger age groups, 20-29 years and nurses with less than 5 years of experience reported the highest stress scores. These results contradict with **Nabirye**, [52] in which reported that older nurses and those with more experience perceived more occupational stress than younger nurses. On the researcher point of view, the more youthful nurses could be stressed because of absence of experience at work. Furthermore, the nurses who had the highest educational level (Bachelor and Postgraduate) reported the lowest perceived stress levels. On the researcher point of view, these results because the nurses have clear roles even in the hospitals. This is in disagreement with **Nabirye**, [52]. Also, Findings of the present study uncovered that there was no statistically significant difference between nurses at University and Teaching Hospital in relation to the level of work stressors.

The findings of the study examined the relationship between work stress dimensions and work engagement: When work stress was examined individually work engagement had a negative correlation with the nature and work conditions ($r = -0.287$) and workload ($r = -0.192$) and role ambiguity ($r = -0.353$), and role conflict ($r = -0.268$). **Fiabane**, [29] suggested that job demands are hindering stressors that may lead to negative outcomes. While many studies explained that job demands can have a positive aspect because certain demands or stressors can result in elevating motivation and competition among employees, which improves their work engagement as a consequence **Al Khadhuri**, [27] and **Hakanen & Roodt** [53].

As regarding the work stressors findings suggested that the most frequently reported sources of a stressor for nurses were nature and work conditions followed by workload, role ambiguity, and role conflict respectively. Similarly, previous studies referred to that workload was the most common stressor experienced by

nurses in many countries **Yobas et al.**, [54]. From the researcher point of view; This may be because nurses working in general wards in university and teaching hospitals provide direct care to patients with diverse health conditions, prepare patients for various investigation and treatment procedures, deal with patients' and families' emotional problems, complete abundant paperwork, among others.

As regarding total work engagement and work stressors domains among the studied sample: work engagement had a negative correlation with nature and work conditions, and work engagement had a negative correlation with the workload. The finding from this analysis indicated that there was a negative and significant relationship between workload and engagement. **Yamada**, [55] reported that Nurses' abilities to maintain high levels of engagement are too often hampered by an increased workload and other factors that negatively affect workplace culture. Also, **Aiken et al.**, [56] found that an increase in a nurse's workload by one patient was associated with a 7 % increase in patient deaths. As the same line **Duffield, et al.**, [57] reported that Improvement in managing excessive workloads may lead to improvements in-patient, nurse outcomes, and engagement.

Fiabane et al., [29] found the work environment had a direct effect on work engagement. This finding disagreement with **Petrou et al.** [58] and **Inoue et al.** [59] found that workload was identified as contributing positively to work engagement. **Trondheim**, [60] indicated the importance of reducing the nurses' workload. This can be done by ensuring that there are enough nurses at work in relation to the work that has to be done. Workload reduction can also be accomplished by ensuring that the nurses have the necessary skills and knowledge, and consequently not have to use a great amount of time to figure out how to do certain tasks. Having varied and interesting tasks will also help make it easier to deal with a large workload.

From the researcher point of view; nature and work conditions and workload were the most common stressor experienced by nurses This may be because nurses working in general wards provide direct care to patients with different health conditions, prepare patients for different investigation and treatment procedures, deal with patients' and families' emotional problems, complete abundant paperwork, among others.

As regarding total Work engagement and role ambiguity and role conflict domains among studied sample: work engagement had a negative correlation with the role ambiguity, and work engagement had a negative correlation with role conflict. These findings are consistent with other studies in which perceived support from co-workers, collaboration with the care team, and support from supervisors was reported as strong influences on work engagement (**Duffield et al.**, [57]; **Liu et al.**, [61]; and **Morgan & Lynn**, [62]. **Hontake and Ariyoshi**, [63] showed a negative correlation, although weak, between job-demands and work engagement, which the negative correlation between Interpersonal relationship difficulties at work and work engagement.

V. Conclusion

In the light of the present study results, it was concluded that there was a statistically significant negative correlation between total work engagement and total psychological work stress. On the other hand, a significant negative correlation was observed between the dimensions of work engagement and all psychological work stress dimensions.

There was no statistically significant difference between nurses in a university hospital and nurses in teaching hospital mean scores in relation to their level of psychological work stress as well as work engagement. The results revealed that among work engagement dimensions, absorption dimension had the highest mean scores regarding nurses working at the university hospital, while dedication dimension had the lowest mean score regarding nurses working at the teaching hospital. Among different work stressors dimensions, there was no statistical difference between nurses working at the university hospital and teaching hospital mean scores in all dimensions of work stressors.

There is a low level of work engagement among hospitals nurses. The high level of work engagement was significantly associated and strongly correlated with the low level of psychosocial work stress. Nurse experienced moderate levels of stress mainly from nature and work conditions, workload, role ambiguity, and role conflict domains. Work engagement was negatively related to four dimensions of psychological work stress.

VI. Recommendations

The study recommended the following:

- Hospital administrators must create an attractive work environment in an attempt to reduce the stress levels of work among nursing staff to increase their participation and engagement in work.
- Hospital directors have a responsibility to check workloads and working hours to guarantee that nurses are not overloaded, as well as to provide adequate resources for nursing staff to engage them to perform their activities and tasks.
- Hospital administrators must implement strategies for handling work stressors and to promote work engagement among nurses.

- Provide entirely new staff nurses with appropriate training and preparing for the activity about the job.
- Design of educational program that focuses on empowering work participation among nurses.
- Further research is needed to examine the relationship between work engagement of nurses and quality of patient care.

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