

*Research Article***Work engagement among health care providers in hospitals of Minia city****Eman M. Mahfouz***, **Ashraf A. Ewis***, **Amany E. Seedhom*** and **Omnia K. EL Latief****

* Department of Public Health and Preventive Medicine, faculty of medicine, Minia University

**Department of Public Health and Occupational Medicine, faculty of medicine, Minia University.

Abstract

Background: The level of work engagement can predict outcomes of quality of service, performance, and patient safety. Burnout and engagement are the opposite poles of a single continuum that can be covered fully with one instrument. There are three related components to work engagement according to Maslach burnout inventory (MBI) antethesis: Energy “vigor”, involvement “dedication” and Efficacy “absorption”. Since nurses are at the center of patient activity and optimal patient outcomes, it is important to assess the drivers and levels of work engagement among them. **Aim:** Assess the level of engagement among nurses participated in the study, Identify the factors that contribute to engagement or detract from it, Determine which nurses or departments are most/least engaged in Minia city. **Design:** A hospital based cross –sectional study. **Methods:** A total of 280 health providers were recruited from three different hospitals in Minia city to participate in the study. They completed a self-administered questionnaire to measure engagement namely MBI antethesis.

Results: Appeared that medical groups had the highest of percentage of engagement at the three sub scales, that the difference was statistically significant. 52.6% ≤ 25 years old recorded work engagement at energy sub scale, and 67.2% (25 to 40 years old) recorded work engagement at involvement scale, at efficacy scale 42.2% those (25- 40) also recoded work engagement and the difference was statistically significant. In energy sub scale (62%) were engaged among those worked <5 years, In involvement sub scale (75.5%) were engaged among those worked for period (5-10 years). In efficacy sub scale (46%) were engaged among those worked for period < 5 years), and the difference was statistically significant. In Energy, Involvement, and Efficacy sub scale (52.4%, 58.1%, and 34.3%) respectively of those satisfied with work environment was engaged versus (23.4%, 41.2%, 21.1%) respectively of those not satisfied with work environment and the difference was statistically significant. (42.7%, 57.3%, 14.6%) respectively of those worked ≤ 12 hours was engaged versus (29.5%, 28.4%, 5.3%) respectively of those worked > 12 hours and the difference was statistically significant. Engagement in its three construct, vigor (energy), dedication (involvement) and absorption (efficacy) respectively using the MBI antethesis were determined. There were significant relation between engagement of healthcare providers in its three constructs and working duration and shift hours, where a noticeable trend was obvious. **Conclusion:** Work engagement of health providers in Minia city is unsatisfactory especially among those working in emergency departments and found to be significantly negatively related to shift hours, work duration. It is recommended to create a workplace environment that promotes nurses engagement by decreasing workload by limiting the hours of working, ensuring that all nurses receive adequate training, and sufficient resources.

Key words: engagement, physicians, nurses, MBI, burnout, dedication, vigor, efficacy, involvement, energy.

Introduction

Work/job engagement, which is concerned with occupational well-being, has become a

critical priority for health care organizations seeking to reduce the cost and improve the quality of health care. Engagement refers

to involvement, commitment, passion, enthusiasm, absorption, focused effort, dedication, and energy. Although typically “employee engagement” and “work engagement” are used interchangeably, it is preferred to use work engagement because it is more specific. It is hoped that through a better understanding of factors related to job engagement, occupational well-being of health care professionals and their ability to care for patients can be improved. The level of work engagement can predict outcomes of quality of service, performance, and patient safety. Bargagliotti, A. L, 2012.

Engaged employees are more productive, less stressed, more satisfied with their personal life, and more loyal to the organization than those employees who are less engaged (Pitt-Catsouphes & Matz Costa, 2008). Work engagement is a commitment to both the job and the organization that measure one’s feelings such as happiness or excitement related to profession. There are three related components to engagement: vigor, dedication and absorption (Schaufeli et al. 2002).

Work engagement represents a positive state of fulfilment that is characterized by vigor, dedication, and absorption. Vigor is characterized by high levels of energy and willingness to invest effort in work. Dedication refers to involvement in work, sense of enthusiasm, and challenge. Absorption is characterized by being fully engrossed in work, whereby time passes quickly (Schaufeli, Bakker, & Salanova, 2006a).

Vigor and dedication are considered direct opposites of exhaustion and cynicism, respectively, the two core symptoms of burnout. The continuum that is spanned by exhaustion and vigor has been labelled “energy”, whereas the continuum that is spanned by cynicism and dedication has been labelled “identification” (Gonzalez-Romá, Schaufeli, Bakker, & Llorens, 2006). Maslach and Leiter (1997) argued that burnout can be seen as an erosion of engagement, with energy turning into exhaustion, involvement turning into

cynicism, and efficacy turning into ineffectiveness. Thus, engagement is characterized by energy, involvement and efficacy, the direct opposites of the three burnout dimensions.

Despite the recent interest in work engagement, to date there is no obvious consensus on what work engagement means and how to best define and measure it (Schaufeli & Bakker, 2010). However, common to the many definitions of engagement is the notion that it is a positive work-related psychological and motivational state of mind that includes a genuine willingness to invest effort in one’s work and toward organizational success (Albrecht, 2010a; Schaufeli & Bakker, 2010; Simpson, 2009). Moreover, there is agreement that engagement is a multi-dimensional construct, comprising an energy dimension and an involvement dimension.

Engagement has gained significant attention recently and refers to a positive, fulfilling, work-related state of mind, characterized by vigor, dedication and absorption (Schaufeli and Bakker 2004a). Engagement differs from motivation in that it is not task-specific, as it in motivation, but also refers to cognition (absorption) as well as affect (vigour), and thus provides us with a superior predictor of job performance (Bakker 2011).

Vigor denotes to high levels of mental resilience and energy along with the willingness to invest effort and persistence while working (Bakker et al. 2008). Dedication is a strong involvement in work while experiencing feelings of enthusiasm, significance, inspiration, pride and challenge (Bakker et al. 2008). Absorption refers to the undivided concentration, immersion and happy engrossment in one’s work where time goes by quickly (Bakker et al. 2008). A work environment where nurses have structural empowerment as well as the tools to do their work leads to a higher feeling of engagement (Laschinger et al., 2009). Nurse leaders who create organisational structures that empower nurses to deliver optimal care promote a

great sense of fit between nurses' expectations of work life and the organizational goals therefore creating greater work engagement and lower burnout. Organizations with high employee engagement enjoyed a higher employee retention and improved customer satisfaction. Studies find that engaged workers are in the minority. Among healthcare workers, nurses are found to be the least engaged.

Maslach and Leiter (1997) described 'engagement' as energy, involvement, and efficacy which are considered the direct opposites of the three burnout dimensions: exhaustion, cynicism, and lack of professional efficacy, respectively. Engaged employees have a sense of energetic and effective connection with their work activities and they see themselves as able to deal completely with the demands of their job. By implication, engagement in the view of Maslach and Leiter (1997) is assessed by the opposite pattern of scores on the three MBI dimensions. That is, according to these authors, low scores on exhaustion and cynicism, and high scores on efficacy are indicative for engagement.

Engagement is assumed to be the positive antipode of burnout, meaning that Energy, Involvement, and Efficacy—which are the direct opposites of the three dimensions of burnout, whereby 'Energy turns into exhaustion, involvement turns into cynicism, and efficacy turns into ineffectiveness'. Job engagement is assessed by the opposite pattern of scores on the three MBI dimensions: that is, low scores on exhaustion and cynicism, and high scores on efficacy, are indicative of job engagement (Maslach and Leiter, 1997). The goal of providing safe, high quality and efficient patient care and an exceptional patient experience are benchmark measures for patient care delivery.

The level of work engagement can predict outcomes of quality of service, performance, and customer loyalty (Sarti, 2014). Actually, hospitals with high employee engagement report satisfaction with job

security, respectful treatment by employers, confidence in management of senior leadership, and the belief that their organization provides high-quality care and service (Press Ganey, 2013). Laschinger, Wilk, Cho and Greco (2009) stated that high-quality patient care is dependent on an empowered nursing workforce. Aiken, Smith, and Lake (1994) concluded that environments that are supportive of professional nursing practice result in positive outcomes for both nurses and patients.

The main reasons for shortage of healthcare providers in USA are reduced supply, and increasing demands placed on healthcare providers, especially nurses. Workforce among nurses is decreasing, for reasons including adverse working environments, as an increasing workload, lacking of support from supervisors and coworkers, stress, burnout and low income (Oulton 2006).

A cross-sectional study called the Registered Nurse Forecast (RN4CAST) was conducted in twelve European countries in 2009, the main findings was that a large amount of nurses said that they would like to leave their work. 3750 participants were Norwegian nurses, and 942 of them (25,4%) answered that they would like to find another job. The results from the Norwegian nurses showed large variations, from 65% who said they were satisfied in their jobs in some hospitals, down to as few as 12% in other hospitals (Setti & Argentero., 2011). In near future there will be a huge demand for health care workers, so it is of great interest to discover the cause of these differences, and to learn what could be done to improve nurses' work environment, thereby contributing to improved work engagement among nurses. (Oulton 2006).

Engaged employees are consistently more productive, profitable, safer, and healthier (Fleming & Asplund, 2007; Wagner & Harter, 2006). They are more likely to be motivated and to stay focused on achieving business goals (Frank et al. 2004; Leigh & Roper, 2008; Anitha, 2014). Above all,

numerous studies suggest that the presence of higher levels of employee engagement significantly reduces turnover intention (Maslach & Leiter, 1997; Saks, 2006; Lockwood, 2006; Macey & Schneider, 2008; Anitha, 2014).

The most obvious means of reducing the workload of practitioners is to ensure that staffing levels are adequate, including administrative staff who could reduce the paperwork burden on nurses (Finlayson et al., 2002).

An engaged workforce is imperative to ensuring that outcomes are met, and that patient safety is maintained. Unfortunately, many studies have found that engaged nurses are in the minority (Rivera, Fitzpatrick, & Boyle, 2011).

Engaged employees work hard. But not all employees who work hard are engaged. Workaholism is considered a negative type of working hard (Schaufeli, Taris & Bakker, 2008a). Workaholics spend a great deal of time in work activities when given the discretion to choose whether to do so; they are excessively hard workers. In addition, workaholics are reluctant to disengage from work and they persistently and frequently think about work when they are not at work. This suggests that workaholics are obsessed with their work; they are compulsive workers (Schaufeli, Taris, & Bakker, 2006b). Engaged employees work hard (vigour), are involved (dedicated), and feel happily engrossed (absorbed) in their work. In this sense, they are similar to workaholics. However, in contrast to workaholics, engaged workers lack the typical compulsive drive. For them work is fun, not an addiction (Schaufeli et al., 2006b).

The focus of this paper detects the level work engagement among health providers, and its emphasis is work-related factors that can influence work engagement either positively or negatively as mentioned in Prins's study (Prins et al., 2010). But In 2009, Statistics Netherlands (CBS) has reported that 8–11% of the Dutch labour force has low engagement which agreed with Ball's study who concluded to that

shift work schedules seem to be becoming more prominent as major sources of distress for nurses, to the extent that they are displacing other sources in importance. Lack of reward is an increasing source of frustration (Ball et al. 2002) and contributes to role disengagement, a component of burnout (Demerouti et al. 2000). There remains a disparity of pay for newly qualified nurses when compared with that for police officers and teachers, two professional groups traditionally compared with nurses (Duffin 2001, Holyoake et al. 2002), and nurses are especially aggrieved by governmental failure to address the issue of salaries (RCN 2002). Prolonged shiftwork, especially night shiftwork, also has a health risk as it produces symptoms that correspond closely to those of mild or moderate distress and low engagement (Efinger et al. 1995).

The results (Heather and Michael., 2006) suggest that when nurses perceive that their work environment supports professional practice, they are more likely to be engaged in their work, thereby ensuring safe patient care. The results also support the key role of strong nursing leadership in creating conditions for work engagement and, ultimately, safe, highquality patient care. The results extend those of our previous research that found support for a structural model linking work environment characteristics to nurse burnout. That model defined a fundamental role for nursing leadership in relation to the quality of worklife through links with staff nurse policy involvement, staffing levels, support for a nursing model of care, and nurse/physician relationships. Our study results are in line with previous studies about the relation between engagement and achievement of an excellent nursing practice environment (Choi and Boyle., 2014)

Moreover, in additional analysis of the qualitative study findings confirmed associations described in both quantitative studied models. In an empowered work environment nurses have access to relevant information, opportunities for achievement their goals. (Wang and Liu., 2015)

Prins's study revealed an effect of type of specialty on engagement as the surgery residents were more highly engaged than internal medicine, then supportive specialties (Prins et al., 2010). The of Rachel's findings suggest that nurses' attitudes can be affected by the type of job, and the participants' own professional role (Rachel et al., 2002).

As the same there was no significant relationships were found between engagement and years in training or length of work (Prins et al., 2010). Instead, workload showed to be a relevant risk factor have highly negative impact on engagement (Van Bogaert et al., 2014). High and prolonged workloads were related to nurses' decreased adequacy and efficacy, complains of fatigue, headache and as well as affects nurses' feelings of frustration and low engagement. These feelings could affect not only the individual nurse but also the whole team (Roelant et al., 2010).

More research on staff nurses' cognitive and physical workloads and work demands (Hoonakker et al., 2011) within an supportive and empowered psychosocial work environment will offer better insights in achieving a healthy nurse workforce and excellent quality and safety of care. However, personality characteristics in nurses vulnerable to develop burnout are identified and require sufficient and appropriate attention (Geuens et al., 2015).

The focus of this paper detects the level work engagement among health providers, and its emphasis is work-related factors that can influence work engagement either positively or negatively, as mentioned in Prins's study (Prins et al., 2010). But In 2009, Statistics Netherlands (CBS) has reported that 8–11% of the Dutch labour force has low engagement, which agreed with Ball's study who concluded to that shift work schedules seem to be becoming more prominent as major sources of distress for nurses, to the extent that they are displacing other sources in importance. Lack of reward is an increasing

source of frustration (Ball et al. 2002) and contributes to role disengagement, a component of burnout (Demerouti et al. 2000). There remains a disparity of pay for newly qualified nurses when compared with that for police officers and teachers, two professional groups traditionally compared with nurses (Duffin 2001, Holyoake et al. 2002), and nurses are especially aggrieved by governmental failure to address the issue of salaries (RCN 2002). Prolonged shiftwork, especially night shiftwork, also has a health risk as it produces symptoms that correspond closely to those of mild or moderate distress and low engagement (Efinger et al. 1995).

The results (Heather and Michael, 2006) suggest that when nurses perceive that their work environment supports professional practice, they are more likely to be engaged in their work, thereby ensuring safe patient care. The results also support the key role of strong nursing leadership in creating conditions for work engagement and, ultimately, safe, high-quality patient care. The results extend those of our previous research that found support for a structural model linking work environment characteristics to nurse burnout. That model defined a fundamental role for nursing leadership in relation to the quality of worklife through links with staff nurse policy involvement, staffing levels, support for a nursing model of care, and nurse/physician relationships. Our study results are in line with previous studies about the relation between engagement and achievement of an excellent nursing practice environment (Choi and Boyle, 2014).

Moreover, in additional analysis of the qualitative study findings confirmed associations described in both quantitative studied models. In an empowered work environment nurses have access to relevant information, opportunities for achievement their goals. (Wang and Liu, 2015)

Prins's study revealed an effect of type of specialty on engagement as the surgery residents were more highly engaged than internal medicine, then supportive specialties (Prins et al., 2010). The of

Rachel's findings suggest that nurses' attitudes can be affected by the type of job, and the participants' own professional role (Rachel et al., 2002).

As the same there was no significant relationships were found between engagement and years in training or length of work (Prins et al., 2010). Instead, workload showed to be a relevant risk factor have highly negative impact on engagement (Van Bogaert et al., 2014). High and prolonged workloads were related to nurses' decreased adequacy and efficacy, complains of fatigue, headache and as well as affects nurses' feelings of frustration and low engagement. These feelings could affect not only the individual nurse but also the whole team (Roelant et al., 2010).

More research on staff nurses' cognitive and physical workloads and work demands (Hoonakker et al., 2011) within an supportive and empowered psychosocial work environment will offer better insights in achieving a healthy nurse workforce and excellent quality and safety of care. However, personality characteristics in nurses vulnerable to develop burnout are identified and require sufficient and appropriate attention (Geuens et al., 2015).

Relatively little research on engagement has been conducted within health services specifically. Hardly any research has been undertaken in Egypt to assess the level of engagement and to explore the effects of different factors on work engagement of nurses. Since work engagement of nurses affect health care delivery and patient satisfaction, this research has been undertaken to help devise proper strategy for increasing nurses' work engagement. Since nurses are at the center of patient activity and drive performance measures and are essential to optimal patient outcomes, so it is important to understand what motivates them, to assess the drivers and levels of work engagement of nurses.

Measures of work engagement

There are several ways to measure work engagement, but there are two main

“schools of thought” on the construct. First are Maslach and Leiter, who see work engagement as the opposite of burnout. In fact, according to their view, the work engagement characteristics of energy, involvement and efficacy, are perfectly inversely related to the three dimensions of burnout. They say that burnout can be seen as an “erosion of engagement,” where energy becomes exhaustion, engagement turns to cynicism, and effectiveness withers into ineffectiveness. Maslach and Leiter use the Maslach Burnout Inventory (MBI) to measure work engagement/burnout (Bakker 2008).

The second “school of thought” of the concept of work engagement and burnout, also assesses the engagement pole as the “positive antithesis of burnout” like Maslach and Leiter, but describes and operationalizes engagement as a separate construct. Researchers in this school use the Utrecht Work Engagement Scale (UWES) to measure work engagement, which comprises three subscales; vigor, dedication and absorption. In some studies, however, it was not possible to find a three-factor structure of work engagement, but rather the empirical findings were that vigor (exhaustion) and dedication (cynicism) are the core dimensions of the concept, in contrast to the third dimension of efficacy. The UWES has also been criticized because the items in all three subscales are framed positively. One-sided scales like the UWES are seen by some as inferior to scales that have items with both positively and negatively framed items (**Bakker 2008**).

In addition to these two “schools” of measurement, there is a third instrument for measuring work engagement, the Oldenburg Burnout Inventory (OLBI), which originally was an instrument developed to measure burnout. The OLBI consists of both positively and negatively framed items, and can therefore be used to measure both work engagement and burnout as a bipolar construct. To measure burnout the positively framed items are recoded, and to measure work engagement the negatively framed items are recoded.

The OLBI consist of two dimensions; vigor/exhaustion and dedication/cynicism. The OLBI covers physical, cognitive and affective facets of vigor and dedication, including an individual's intrinsic resources, such as emotional strength, cognitive energy, and physical robustness (Demerouti et al., 2010).

Aim of the study:

To determine the levels of work engagement among nurses and its relation to occupational environment in Minia city.

Subjects and methods

A cross-sectional study was conducted over the period from October to December 2016 among healthcare providers working in a variety of health care settings in the 3 hospitals in Minia city. They were the general Minia hospital, the health insurance hospital and Minia university hospital. A stratified random sample was taken from each hospital to include different specialties according to their distribution in the study population and were employed at the hospital for more than 6 months and not on vacation during the study period. The

sample size was calculated using EP Info 2000. For the assessment of the determinants of engagement, data were collected about socio-demographic variables (age, residence, marital status); job characteristics and experiences (job type, department , years of experience, shifts hours, attitudes to work (satisfaction of work environment).

Data management

Statistical analysis of data was performed using SPSS, version 20. Chi-square test was used to compare between more than two proportions. ANOVA test was used to compare between more than two means. Also, multiple regression analysis was used to see the combined effect of different independent variables on the target (dependent) variable. A statistically significant level was considered when P-value was less than 0.05.

Consent: All participants in the study gave verbal consent to participate.

Ethical approval:

The study had been approved by the ethical committee for human studies in our institution.

Results

Table (1): Sociodemographic and work characteristics of the studied sample of Minia health care providers

Sociodemographic characteristics		Frequency (%)
Age	Range Mean \pm SD	38.00 from 58 to 20. 39.45\pm 10.30
Sex	Males Females	125 (44.6 %) 155 (55.4 %)
Marital status	Single married widow, divorced	59 (21.1%) 207 (73.9%) 14 (5%)
Residence	Urban Rural	144 (51.2%) 136 (48.4%)
Work characteristics		Frequency %
Shifts (hours)	Mean \pm SD Range	10.2857\pm 4.31433 16.00 from 24 to 8
years of work	Mean \pm SD Range	15.63\pm9.5 36.00 from 38 to 2
Income satisfaction	Yes No	98 (35%) 182 (65%)
Work environmental satisfaction	Yes No	105 (37.5%) 175 (62.5%)

This table showed that 51.2% of the studied sample were urban inhabitants, the mean age for the studied groups was 39.45 ± 10.30 , 44.6% were males, and 73.9% of the sample were married. This table showed that the studied sample was taken from Minia university, general, and insurance hospitals (34.5%, 34.9%, 30.2%) respectively, it was from different

departments including Tropical, surgery, ICU, nursery, dermatology, and obstetric (21.1%, 21.6%, 21.4%, 10%, 13.2%, 12.5%) respectively, the mean of the hours on the shift was 10.2857 ± 4.31433 and mean of years of work were 15.63 ± 9.5 . 35% were satisfied with their income while 65% were not satisfied with their Environmental work.

Table (2): Characteristics of the studied sample of Minia health care providers

Subgroup	N	Age (yrs) Mean \pm SD	Years of work Mean \pm SD	shifts (hours) mean \pm SD
Medical	96	33.50 \pm 7.855	10.0729 \pm 6.7	9.91 \pm 3.9
Surgical	96	41.1 \pm 10.39	17.229 \pm 9.9	11.58 \pm 5.04
Emergency	88	44.1 \pm 9.52	19.977 \pm 8.78	12.00 \pm 4.71

The table showed that the highest mean of age and number of working years, and hours of the shift among were among emergency group (44.1 \pm 9.52), (19.977 \pm 8.78), (12.00 \pm 4.71) respectively

Table (3): Engagement among health care providers with regarded their Work Environmental satisfaction and shift hours.

Engagement	Work Environmental satisfaction*		Total	Shift hours *		Total
	Yes	No		≤ 12	> 12	
Energy yes	55 (52.4%)	52 (23.4%)	107 (38.2%)	79 (42.7%)	2 (29.5%)	107 (38.2%)
no	50 (47.5%)	123 (70.3%)	173 (61.8%)	106 (57.3%)	67 (70.5%)	173 (61.8%)
Involvement yes	61 (58.1%)	72 (41.2%)	133 (47.5%)	106 (57.3%)	27 (28.4%)	133 (47.5%)
No	44 (41.9%)	103 (58.9%)	147 (52.5%)	79 (42.7%)	68 (71.6%)	147 (52.5%)
Efficacy yes	36 (34.3%)	37 (21.1%)	73 (26.1%)	27 (14.6%)	5 (5.3%)	32 (11.4%)
no	69 (65.7%)	138 (78.9%)	207 (73.9%)	158 (85.4%)	90 (94.7%)	248 (88.6%)
Total	105 (37.5%)	175 (62.5%)	280 (100%)	185 (66.1%)	95 (33.9%)	280 (100.0%)

*statistically significant

The table showed that in energy sub scale (52.4%) of those satisfied with work environment was engaged versus 23.4% of those not satisfied with work environment. In involvement sub scale (58.1%) of those satisfied with work environment was engaged versus 41.2% of those not satisfied with work environment. In efficacy sub scale (34.3%) of those satisfied with work environment was engaged versus 21.1% of those not satisfied with work environment and the difference was statistically

significant. The table showed that in energy sub scale (42.7%) of those worked ≤ 12 hours was engaged versus 29.5% of those worked > 12 hours. In involvement sub scale (57.3%) of those worked ≤ 12 hours was engaged versus 28.4% of those worked > 12 hours. In efficacy sub scale (14.6%) of those worked ≤ 12 hours was engaged versus 5.3% of those worked > 12 hours and the difference was statistically significant $P < 0.05$

Table (4) Levels of engagement among healthcare providers according to department

Engagement	Medicine N(%)	surgery (N=)	emergency (N=)	X2	P
Energy				51.506	
yes	56(58.3%)	96(25%)	27(30.6%)		0.0001*
no	40(41.7%)	72(75%)	61(69.3%)		
Total	96(34.3%)	96(34.3%)	88(31.4%)		
Involvement				36.437	
Yes	66(68.7%)	40(41.7%)	27(30.7%)		0.0001*
No	30(31.2%)	56(58.3%)	61(69.3%)		
Total	96(34.3%)	96(34.3%)	88(31.4%)		
Efficacy				34.549	
yes	28(44.8%)	44(19.8%)	56(12.5%)		0.0001*
no	68(55.2%)	52(80.2%)	32(55.3%)		
Total	96(34.3%)	96(34.3%)	88(31.4%)		

*significant

In table (4), it was shown that medical groups had the highest of percentage of engagement at the three sub scales, that the difference was statistically significant (P=0.0001).

Table (5): The relation between engagement & years of work and age groups among health care providers in Minia city

Engagement	Age groups*			Total *	Work duration*			Total*
	No (%)	No (%)	No (%)		No(%)	No(%)	No(%)	
	≤25	25-40	≥40		<5	5-10	≥10	
Energy								
Yes	10(52.6%)	62(48.4%)	35(26.7%)	107(38.2%)	31(62%)	26(53.1%)	0(27.7%)	107(38.2%)
No	9(47.4%)	66(51.6%)	98(73.7%)	173(61.8%)	19(38%)	23(46.9%)	31(72.4%)	173(61.8%)
Involvement								
Yes	12(63.2%)	86(67.2%)	35(26.3%)	132(47.5%)	36(72%)	37(75.5%)	60(33.1%)	133(47.5%)
No	7(36.8%)	42(32.8%)	98(73.7%)	147(52.5%)	14(28%)	12(24.5%)	21(66.9%)	147(52.5%)
Efficacy								
Yes	6(31.6%)	54(42.2%)	13(9.8%)	73(26.1%)	23(46%)	22(44.9%)	8(15.5%)	73(26.1%)
No	13(68.4%)	74(57.8%)	120(90.2%)	207(73.9%)	27(54%)	27(55.1%)	53(84.6%)	207(73.9%)

*statistically significant

The table showed that 52.6% ≤ 25 years old recorded work engagement at energy sub scale, and 67.2% (25 to 40 years old) recorded work engagement at involvement scale, at efficacy scale 42.2% those (25- 40) also recorded work engagement and the difference was statistically significant

The table showed that In energy sub scale (62%) were engaged among those worked <5 years, In involvement sub scale (75.5%) were engaged among those worked for period (5-10 years). In efficacy sub scale (46%) were engaged among those worked for period < 5 years, and the difference was statistically significant P=(0.000).

Table (6) Engagement level among Minia health care providers regarding social life

Engagement	Enough Sleeping time*		Enough holidays*		Satisfied Income*		Good with Colleagues*	
	yes	No	Yes	No	Yes	No	yes	No
Energy								
yes	46(48.9%)	61(32.8%)	57(49.5%)	50(30.3%)	56(62.2%)	40(25.3%)	56(53.8%)	51(29%)
no	48(51.1%)	125(67.2%)	58(50.4%)	115(69.7%)	37(37.8%)	136(42.3%)	48(46.2%)	125(71%)
Involvement								
yes	54(57.4%)	79(42.5%)	67(58.3%)	66(40%)	56(56.3%)	135(42.3%)	67(64.5%)	66(37.5%)
no	40(42.6%)	107(57.5%)	48(41.7%)	99(60%)	42(42.9%)	105(57.7%)	37(35.6%)	110(62.5%)
Efficacy								
yes	32(43.8%)	41(57.5%)	35(30.4%)	38(23%)	35(35.7%)	41(22.5%)	35(33.7%)	38(21.6%)
no	62(57.4%)	145(42.5%)	80(68.7%)	127(77%)	63(64.3%)	141(77.5%)	69(66.4%)	138(78.4%)
Total	94(33.6%)	186(66.3%)	115(41.1%)	165(58.9%)	98(35%)	182(65%)	Total??	??

*statistically significant

This table showed that 48.9% of those satisfied with sleeping time hours were engaged as compared to 32.8% not satisfied with sleeping time hours at energy level. At involvement sub scale 57.4% of those satisfied with sleeping time hours were engaged as compared to 42.5% not satisfied with sleeping time hours. At efficacy scale 43.8% of those satisfied with sleeping time hours were engaged as compared to 57.5% not satisfied with sleeping time hours, and the difference was statistically significance ($P < 0.05$). This table ALSO showed that 49.5% of those satisfied **holidays satisfaction** were engaged as compared to 30.3% not satisfied with holidays at energy level. At involvement sub scale 58.3% of those satisfied with **holidays** were engaged as compared to 40% not satisfied with **holidays**. At efficacy scale 30.4% of those satisfied with holidays were engaged as compared to 23% not satisfied holidays, and the difference was statistically significance ($P < 0.05$) for both energy and involvement only. This table ALSO showed that 62.2% of those satisfied with income were engaged as compared to 25.3% not satisfied income at energy level. At involvement sub scale 56.3% of those satisfied with income were engaged as compared to 42.3% not satisfied with income. At efficacy scale 35.7% of those satisfied with income were engaged as compared to 22.5% not satisfied with income, and the difference was statistically

significance ($P < 0.05$). This table showed that 53.8% of those Feeling comfortable about his colleagues were engaged as compared to 29% not Feeling comfortable about his colleagues at energy level. At involvement sub scale 64.5% of those Feeling comfortable about his colleagues were engaged as compared to 37.5% not Feeling comfortable about his colleagues. At efficacy scale 33.7% of those Feeling comfortable about his colleagues were engaged as compared to 21.6% not Feeling comfortable about his colleagues and the difference was statistically significance.

Discussion

In health professionals the combination of high job demands and low job resources produced the highest level of burnout, and low level of work engagement. As health care professionals are usually very dedicated to their work and highly intrinsically motivated, a combination of high demands and lacking resources is obviously more psychologically detrimental than in blue collar workers, who usually are less dedicated and more externally motivated.

The table 3 showed that in energy sub scale (42.7%) of those worked ≤ 12 hours was engaged versus 29.5% of those worked > 12 hours. In involvement sub scale (57.3%) of those worked ≤ 12 hours was engaged versus 28.4% of those worked > 12 hours. In

efficacy sub scale (14.6%) of those worked ≤ 12 hours was engaged versus 5.3% of those worked > 12 hours and the difference was statistically significant $P < 0.05$. The results were agreed with Ball's study who concluded that shift work schedules seem to be becoming more prominent as major sources of distress for nurses, to the extent that they are displacing other sources in importance. Lack of reward is an increasing source of frustration (Ball et al. 2002) and contributes to role disengagement, a component of burnout (Demerouti et al. 2000). There remains a disparity of pay for newly qualified nurses when compared with that for police officers and teachers, two professional groups traditionally compared with nurses (Duffin 2001), and nurses are especially aggrieved by governmental failure to address the issue of salaries (Rachel et al., 2002). Prolonged shiftwork, especially night shiftwork, also has a health risk as it produces symptoms that correspond closely to those of mild or moderate distress and low engagement (Efinger et al. 1995).

The same table 3 showed that in energy sub scale (52.4%) of those satisfied with work environment was engaged versus 23.4% of those not satisfied with work environment. In involvement sub scale (58.1%) of those satisfied with work environment was engaged versus 41.2% of those not satisfied with work environment. In efficacy sub scale (34.3%) of those satisfied with work environment was engaged versus 21.1% of those not satisfied with work environment and the difference was statistically significant. The results recorded in Heather's study (Heather and Michael., 2006) suggested that when nurses perceive that their work environment supports professional practice, they are more likely to be engaged in their work, thereby ensuring safe patient care. The results also support the key role of strong nursing leadership in creating conditions for work engagement and, ultimately, safe, high-quality patient care. The results extend those of our previous research that found support for a structural model linking Lake's⁵ professional practice work environ-

ment characteristics⁵ to nurse burnout.⁴ That model defined a fundamental role for nursing leadership in relation to the quality of work life through links with staff nurse policy involvement, staffing levels, support for a nursing model of care, and nurse/physician relationships. Our study results are in line with previous studies about the relation between engagement and achievement of an excellent nursing practice environment (Choi and Boyle., 2014). Moreover, in additional analysis of the qualitative study findings confirmed associations described in both quantitative studied models. In an empowered work environment nurses have access to relevant information, opportunities for achievement their goals. (Wang and Liu .,2015).

In table (4), it was shown that medical groups had the highest of percentage of engagement at the three sub scales, that the difference was statistically significant ($P=0.0001$). On other hand an ANOVA test on Prins's study revealed an effect of type of specialty on engagement as the surgery residents were more highly engaged than internal medicine, then supportive specialties (Prins et al., 2010). The of Rachel's findings suggest that nurses' attitudes can be affected by the type of job, and the participants' own professional role (Rachel et al., 2002).

Table 5 showed that 52.6% ≤ 25 years old recorded work engagement at energy sub scale, and 67.2% (25 to 40 years old) recorded work engagement at involvement scale, at efficacy scale 42.2% those (25-40) also recoded work engagement and the difference was statistically significant. Another study of the measurement of experienced burnout and work engagement found that the patterns of burnout and work engagement did vary by age. Older people scored higher efficacy than younger ones. On the other hand, younger people scored lower energy scale (Christina and Susane, 1981). (Maslach, 1976) also proved that burnout and low engagement were likely to occur within the first few years of one's career. If people have difficulty in coping effectively with burnout at this point, they may leave their profession entirely. Ozyurt

and his colleagues recorded that the burnout and low engagement were significantly higher in the ≤ 29 years age group than in the older age groups, while low personal accomplishment and satisfaction score were significantly lower in this age group, indicating that younger physicians in this study group experience high levels of burnout and low engagement (Ozyurt et al., 2006)

Table 5 also showed that In energy sub scale (62%) were engaged among those worked <5 years, In involvement sub scale (75.5%) were engaged among those worked for period (5-10 years). In efficacy sub scale (46%) were engaged among those worked for period < 5 years), and the difference was statistically significant $P=(0.000)$. Van and his colleague explained that workload showed to be a relevant risk factor have highly negative impact on engagement (Van Bogaert et al., 2014). High and prolonged workloads were related to nurses' decreased adequacy and efficacy, complains of fatigue, headache and as well as affects nurses' feelings of frustration and low engagement. These feelings could affect not only the individual nurse but also the whole team (Roelant et al., 2010). More research on staff nurses' cognitive and physical workloads and work demands (Hoonakker et al., 2011) within an supportive and empowered psychosocial work environment will offer better insights in achieving a healthy nurse workforce and excellent quality and safety of care. However, personality characteristics in nurses vulnerable to develop burnout are identified and require sufficient and appropriate attention (Geuens et al., 2015). While no statistical significant differences were found between work engagement and years of experiences (Awuku 2013).

Table 6 showed that 48.9% of those satisfied with sleeping time hours were engaged as compared to 32.8% not satisfied with sleeping time hours at energy level. At involvement sub scale 57.4% of those satisfied with sleeping time hours were engaged as compared to 42.5% not satisfied with sleeping time hours. At efficacy scale 43.8% of those satisfied with sleeping time

hours were engaged as compared to 57.5% not satisfied with sleeping time hours, and the difference was statistically significance ($P < 0.05$).) that agreed with Yasuharu's study who proved that both burnout, work engagement, and poor mental health were directly related to short sleeping time in Japanese physicians (Yasuharu et al., 2009). However, Rosen and his colleagues assumed that regarding short sleeping time, there may be a possibility that some physicians have insomnia rather than sleep deprivation that affects their work engagement. Heavy on call duty and/or poor work control could lead to depression with insomnia or poor-quality sleep among physicians and lead to low work engagement (Rosen et al., 2006).

This table (6) also showed that 49.5% of those satisfied holidays satisfaction were engaged as compared to 30.3% not satisfied with holidays at energy level. At involvement sub scale 58.3% of those satisfied with holidays were engaged as compared to 40% not satisfied with holidays. At efficacy scale 30.4% of those satisfied with holidays were engaged as compared to 23% not satisfied holidays, and the difference was statistically significance ($P < 0.05$) for both energy and involvement only. These findings were consistent with those of Goehring's study, which indicated insufficient personal time and/or vacation as one of the most important predictors of burnout which affects work engagement (Goehring et al., 2005). A study revealed that the number of vacations per year was found to be a significant variable for every subscale of burnout, job satisfaction, and work engagement. Physicians, who reported having more than two vacations per year, had significantly high scores for energy and involvement, efficacy, and satisfaction (Ozyurt et al., 2006).

This table 6 also showed that 62.2% of those satisfied with income were engaged as compared to 25.3% not satisfied income at energy level. At involvement sub scale 56.3% of those satisfied with income were engaged as compared to 42.3% not

satisfied with income. At efficacy scale 35.7% of those satisfied with income were engaged as compared to 22.5% not satisfied with income, and the difference was statistically significance ($P < 0.05$). In a study on Physician Burnout by Rosenstein 2012, the three top external factors given as contributing to their stress that affects work engagement included the overall economy (52%).

Also table 6 showed that 53.8% of those Feeling comfortable about his colleagues were engaged as compared to 29% not Feeling comfortable about his colleagues at energy level. At involvement sub scale 64.5% of those Feeling comfortable about his colleagues were engaged as compared to 37.5% not Feeling comfortable about his colleagues. At efficacy scale 33.7% of those Feeling comfortable about his colleagues were engaged as compared to 21.6% not Feeling comfortable about his colleagues and the difference was statistically significance ($P < 0.05$). The same results were found by Severinsson who stated that healthcare work posed a unique emotional strain, low work engagement, had many ethical problems and dilemmas, interview studies have shown that moral distress is related to burnout and low work engagement (Severinsson, 2003).

Conclusion and recommendations

The present study conclude high prevalence of low engagement among nurses . There were relationship between level of engagement and different occupational settings. It is recommended to create a workplace environment that promotes nurses engagement by decreasing workload by limiting the hours of working, ensuring that all nurses receive adequate training about self- protection procedures, proper availability of all resources that were used in different departments.

Conflicts of interest: The authors declared no conflicts of interest. No sources of fund.

Acknowledgment: We are grateful for all nurses for their participation in the study. We would like to thank the hospital administrators for their help.

References

1. Abeer Mohamed Seada, 2017 Organizational Role Stress and Work Engagement Among Nurses in a Selected Hospital in Cairo American Journal of Nursing Science 2017; 6(1): 53-62.
<http://www.sciencepublishinggroup.com/j/ajns>. doi: 10.11648/j.ajns. 20170601.17. ISSN: 2328-5745 (Print); ISSN: 2328-5753 (Online)
2. Albrecht, Simon L. 2013, Work engagement and the positive power of meaningful work, in Advances in positive organizational psychology, Emerald Group Publishing Limited, Bingley, England, pp.237-260.
3. Awuku, E. N. (2013): Stress, work engagement, and psychological well being of nurses at state hospitals. Windhoek, Rehoboth, Okahandja.. Published master thesis in clinical psychology. University of Namibia. P: 93-96.
4. Arnold Bakker, 2011, An Evidence-Based Model of Work Engagement, Current Directions in Psychological Science. Volume: 20 issue: 4, page(s): 265-269.
DOI: <https://doi.org/10.1177/0963721411414534>
5. Ball J., Pike G., Cuff C., Mellor-Clark J. & Connell J. (2002) RCN Working Well Survey. RCN Online, http://www.rcn.org.uk/publications/pdf/working_well_survey_inside1/pdf (last accessed May 2003).
6. Bargagliotti, A.L. (2012) Work engagement in nursing: a concept analysis. *Journal of Advanced*
7. Choi J, and Boyle D (2014). Differences in nursing practice environment among US acute care unit types: descriptive study. *Int J Nurs Stud*. 51:1441–9.
8. Christina M, Berkeley and Susane J (1981). The measurement of experienced burnout. *Journal of occupational behavior*.2: 99-113.
9. Demerouti E., Bakker A., Nachreiner F. & Schaufeli W.B. (2000) A model of burnout and life satisfaction amongst nurses. *Journal of Advanced Nursing* 32, 454–464.

10. Demerouti E., Mostert, K. & Bakker, A.B. (2010) Burnout and work engagement: A thorough investigation of the independency of both constructs. *Journal of Occupational Health Psychology*, 15(3), 209-222.
11. Duffin C. (2002) On the pay treadmill. *Nursing Standard* 16, 12–13.
12. Efinger J., Nelson L.C. & Starr J.M.W. (1995) Understanding circadian rhythms: a holistic approach to nurse and shift work. *Journal of Holistic Nursing* 13, 306–322.
13. Finlayson B., Dixon J., Meadows S. & Blair G. (2002) Mind the gap: policy response to the NHS nursing shortage. *British Medical Journal* 325, 541–544.
14. Geuens .N, Braspenning .M, Van Bogaert .P, and Franck .E(2015). Individual vulnerability to burnout in nurses: The role of Type D personality within different nursing specialty areas. *Burnout Res.* 2:80–6.
15. Goehring C, Bouvier G.M, Kunzi B, Bovier P (2005). Psychosocial and Professional characteristics of burnout in Swiss primary care practitioners: a cross-sectional survey. *Swiss Med Wkly.*135 101-8.
16. Heather K. S. L., and Michael P. L.(2006). The Mediating Role of Burnout/Engagement. *JONA.* 36(5): 259-267.
17. Hoonakker .P, Carayon .P, and Walker. J (2011). Measuring Workload of ICU Nurses with a Questionnaire Survey: the Nasa Task Load Index (TLX). *IIE Trans Healthcare Syst Eng.*1(2):131–43.
18. Maslach, C., & Leiter, M. P. (1997). *The truth about burnout: How organizations cause personal stress and what to do about it.* San Francisco, CA: Jossey-Bass. P34.
 - a. *Nursing Practice*,7(3 suppl), 34S-39S.
 - i. *Nursing*, 68(6), 1414-1428.
19. Oulton, J.A. (2006). The global nursing shortage: an overview of issues and actions. *Policy, Politics, & Piia Seppälä*, 2013. *Work Engagement Psychometrical, Psychosocial, and Psychophysiological Approach.* Editors Timo Suutama Department of Psychology, University of Jyväskylä Pekka Olsbo, Sini Tuikka Publishing Unit, University Library of Jyväskylä
20. Ozyurt A, Hayran O, and Sur H (2006). Predictors of burnout and job satisfaction among Turkish physicians. *QJM.* 99 (3): 161-169
21. Pitt-Catsoupes, M. & Matz-Costa, C. (2008). The multi-generational workforce: Workplace flexibility and engagement. *Community, Work & Family*, 11(2), 215-229.
22. Prins, J.T.; Hoekstra-Weebers, J. E. H. M.; Gazendam-Donofrio, S.M.; Dillingh, G.S.; Bakker, A.B.; Huisman, Jakobus; Jacobs, Bram; van der Heijden, F.M.M.A.(2010). Burnout and engagement among resident doctors in the Netherlands. *Medical Education*, 44(3): 236-247.
23. Rachel E. D., Nick S., and Charles A. V (2002). Royal College of Nursing Congress 2002 report summarized. *Nursing Standard* 16, 4–9.
24. Roelant .E, Clarke S, Meuleman .H, Van Bogaert .P, and Van de Heyning. P (2010). Impacts of Unit-Level Nurse Practice Environment and Burnout on Nurse-Reported Outcomes: A Multi level Modeling Approach. *J Clin Nurs.* 19:1664–74.
25. Rosen I.M, Gimotty P.A, Shea J.A, Bellini L.M (2006) Evolution of sleep quantity, sleep deprivation, mood disturbances, empathy, and burnout among interns. *Acad Med.* 81: 82–5.
26. Ruotsalainen J.H, Verbeek J.H, Mariné A, Serra C (2016). Preventing occupational stress in healthcare workers. *Sao Paulo Med J.* 134(1):92.
27. Severinsson E (2003). Moral stress and burnout: qualitative content analysis. *Nursing and Health Sciences.* 5: 59–66.
28. Schaufeli, W.B. and Bakker, A.B. (2004) Job demands, job resources and their relationship with burnout and engagement: a multi-sample study. *Journal of Organizational Behavior*, 25, 293–315.
29. Schaufeli, W.B. and Bakker, A.B. (2010) Defining and measuring work engagement: bringing clarity to the

- concept, in *Work Engagement: A Handbook of Essential Theory and Research* (eds A.B. Bakker and M.P. Leiter), Psychology Press, New York, pp. 10–24
30. Setti, I. & Argentero, P. (2011) Organizational features of workplace and job engagement among Swiss healthcare workers. *Nursing & Health Sciences*, 13(4), 425-432.
 31. Simpson MR, 2009 Engagement at work: a review of the literature Jul; 46(7):1012-24. doi: 10.1016/j.ijnrstu.2008.05.003. Epub 2008 Aug 12.
 32. Spence Laschinger HK1, Leiter. M, Day A, Gilin D, 2009. Workplace empowerment, incivility, and burnout: impact on staff nurse recruitment and retention outcomes. *J Nurs Manag.* 2009 Apr;17(3):302-11. doi:10.1111/j.1365-2834.2009.00999
 33. Statistics Netherlands . Arbeidsomstandigheden: werk en gezondheidsaspecten. [http://statline.cbs.nl/StatWeb/publication/?VW=T&DM=SLNL&PA=37633&D1=5&D2=0&D3=\(1-11\)-1&HD=080705-1124&HDR=T&STB=G1,G2](http://statline.cbs.nl/StatWeb/publication/?VW=T&DM=SLNL&PA=37633&D1=5&D2=0&D3=(1-11)-1&HD=080705-1124&HDR=T&STB=G1,G2). [Accessed 8 January 2009.]
 34. Van Bogaert. P, Timmermans .O, Weeks S.M, Van Heusden .D, Wouters K, Franck .E (2014). Nursing unit teams matter: impact of unit-level nurse practice environment, nurse work characteristics, and burnout on nurse reported job outcomes, and quality of care, and patient adverse events: a cross-sectional survey. *Int J Nurs Stud.* 51:1123-34.
 35. Wang .S, and Liu .Y(2015). Impact of professional nursing practice environment and psychological empowerment on nurses' work engagement: test of structural equation modelling. *J Nurs Manag.* 23(3):287–96.
 36. Wilmar B. S.(2004). Journal of Organizational Behavior. job demands, and resources and their relationship with burnout and engagement. *J. Organiz. Behav.* 25, 293–315.
 37. Wilmar B. Schaufeli, Marisa Salanova, Vicente González-romá, Arnold B. Bakker, 2002; The Measurement of Engagement and Burnout: A Two Sample Confirmatory Factor Analytic Approach. *Journal of Happiness Studies.* March 2002, Volume 3, Issue 1, pp 71–92.
 38. Yasuharu T, Keiko H, Makiko O, Seiji B, Haruo Y, Shunzo K (2009). The Interrelationships between working conditions, job satisfaction, Burnout and Mental Health among Hospital Physicians in Japan: a Path Analysis. *Industrial Health. Ind Health.* 47(2):166-72.