

The Relationship between Occupational Stress and Work Ability among Midwives in Mashhad, Iran

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ARTICLE INFO	ABSTRACT
<p><i>Article type:</i> Original article</p> <hr/> <p><i>Article History:</i> Received: 6-Apr-2014 Accepted: 20-May-2014</p> <hr/> <p><i>Key words:</i> Midwife Occupational stress Work ability</p>	<p>Background & aim: Occupational stress is one of the key factors in reducing staff productivity in organizations with physical and psychological impacts on employees. Nursing and midwifery are among the most stressful professions. Therefore, this study aimed to determine the relationship between occupational stress and work ability of midwives in Mashhad, Iran in 2011.</p> <p>Methods: This cross-sectional study was carried on 123 midwives employed in the public hospitals and health centres in Mashhad, Iran using two-stage sampling method. Demographic and work-related data were obtained through a self-structured questionnaire. Occupational stress and work ability were measured using Occupational Stress Assessment Questionnaire (OSAQ) and Work Ability Index Questionnaire (WAIQ). The statistical analysis was performed using student's t-test, One Way ANOVA, correlation coefficient, and linear regression model through SPSS statistical software (version 11.5).</p> <p>Results: The results showed that the mean score of occupational stress and work ability was 149 ± 0.01 and 38.81 ± 0.05, respectively. There was a negative correlation between job-related stress and work ability. Midwives with higher occupational stress experienced poorer work ability ($P=0.021$, $r=-0.061$).</p> <p>Conclusion: Sever work stress is associated with reduced work ability. So it is recommended to eliminate or decrease occupational stress and increase work ability among Iranian midwives using preventive measures, although identification of sources of occupational stress seems necessary in order to adopt appropriate stress management strategies.</p>

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Introduction

Today, work stress has become a common and costly problem in the workplace (1). Studies have shown that stressful work conditions lead to increased absenteeism, unpunctuality, and staff turnover (2). Studies, which focused on identifying occupational stress factors and the related consequences, were influential in redefining stress as more than a personal issue (3).

Certain stressors are inherent in every job. Factors such as rotating work shift, poor management of the workplace, high levels of responsibility, lack of on-the-job training,

insufficient number of employees, and conflicts at the workplace are common work-related stressors (4, 5).

Midwives and nurses, providing 80% of patient care, are subject to multiple stressors (6). Women play a fundamental and active role in midwifery (7). Since 1990s, women have shown a growing tendency toward working outside the house and official employment. Over the last decade, the number of female employees has approximately tripled in the United States (8).

Social relations in Iran - a country undergoing

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changes in terms of socio-economic status- have altered, and more job opportunities have been created for women (9). However, compared to men, women are more vulnerable to job stressors, due to their responsibilities and multiple roles at both home and in the workplace. Recognition and alleviation of occupational stress factors not only results in higher efficiency at work, but also improves one's effectiveness at home.

Unfortunately, few studies have concentrated on this important matter, especially in Iran (8, 10). Social and economic changes in the process of urbanization in Iran have transformed social relations and provided additional job opportunities for women. Identifying and eliminating the causes of occupational stress among women will improve their performance both at work and at home (7, 10). In general, stress is a major occupational hazard for all human service professionals. Nurses, midwives, and physicians, who work at night or during unconventional hours, are among safety-sensitive occupations.

Shift work has numerous negative health effects on workers including nurses and midwives. Bourbonnais, Gallagher, and Larsson evaluated nurses' psychosocial demands and different levels of control in nursing profession. They identified Karasek's model as the most suitable model of occupational stress in nursing and midwifery (11-13).

Oncel (2007) reported that midwives' mean score of work-related strain was at the moderate level in Turkey (14). Also, Kordi and Mohamadirizi (2013) observed severe occupational stress in 41% of midwives, using Karasek's Job Content Questionnaire (JCQ) (10). Similarly, Orji (2002) reported that 83% of nurses in an obstetrics and gynaecology department in Nigeria had high job-related stress (15).

Considering the role of midwives in the quality of healthcare services for mothers and children, it is essential to evaluate their job conditions. Occupational stress can influence the health of individuals and organizations and affect their performance and abilities. In fact, work ability refers to both personal and work-related factors, which influence one's capacity to adapt to working situations (16). The concept of

work ability is based on the assumption that a worker's ability to successfully perform tasks depends on the equilibrium between physical/mental job demands and individual's capacities, determined by health, professional knowledge, competencies, values, attitudes, and job motivation (17).

Work ability is a broad concept, comprising physical, psychological, and social capacities (18). Work ability is not only influenced by demographic characteristics such as age, education level, and socio-economic status, but is also affected by environmental factors and life style (19). In Brazil, Prochnow (2013) showed high job strain and reduced work ability in 29.7% and 41% of nurses in one hospital, respectively (20).

Since no research has evaluated the link between work-related stress and work ability among Iranian midwives, we aimed to evaluate occupational stress level, work ability, and the relationship between these two variables in midwives at hospitals and healthcare centres of Mashhad in 2011. Finally, if possible, we tried to propose strategies to improve midwives' workplace conditions.

Materials and Methods

The study population of the current cross-sectional study included midwives, working in public hospitals and healthcare centres of Mashhad, Iran. After performing a pilot study on 10 midwives and calculating the correlations, the sample size was estimated to be 90 people. The total number of subjects was estimated to be 123 with respect to 10% increase as a result of random sampling.

In order to have access to all midwives in the city, hospitals and healthcare centres were selected as the sampling frame of the study. Multi-stage sampling was employed (cluster and convenience sampling), and 15 hospitals and 3 healthcare centres were randomly selected from 22 hospitals and 3 healthcare centres, affiliated to Mashhad University of Medical Sciences. Then, in each selected hospital and healthcare centre, stratified random sampling was performed in a way that each stratum represented one hospital ward (e.g., labour, gynaecology, and NICU). The subjects in each stratum were selected via convenience sampling.

After explaining the study objectives to the participants, written informed consents were obtained from the midwives. The subjects completed the questionnaires at the end of each working shift (including morning, evening, and night shifts). Inclusion criteria were as follows: 1) written consent to participate in the study; 2) age range of 23-55 years; 3) no psychological disorders over the last year; 4) being employed in one of the hospitals or healthcare centres of Mashhad; 5) having midwifery certificate for at least two years; and 6) a minimum of 3-month working experience.

The exclusion criteria were as follows: 1) unpleasant or stressful events within the last 6 months such as the death of the spouse or close relatives; and 2) divorce or pregnancy during the study period.

In case of eligibility for the study, midwives completed the questionnaire related to demographic and job characteristics, Occupational Stress Assessment questionnaire (OSAQ) and Work Ability Index Questionnaire (WAIQ) in two time intervals (beginning of the study and start of the next working shift) in order to improve the accuracy of the answers.

OSAQ consisted of 37 questions, and the respondents rated the items using a 5-point Likert scale (ranging from 1: no stress to 5: very severe stress). This questionnaire included 6 dimensions: 1) work-related financial issues, 2) public criticism, 3) workplace hazards, 4) workplace interpersonal conflicts, 5) work shift, and 6) professional and intellectual demands. The scores ranged from 37 to 185.

WAIQ consisted of 57 items and 7 dimensions including: 1) current work ability compared to the lifetime best, 2) work ability in relation to job demands, 3) number of diagnosed illnesses or limiting conditions, 4) estimated impairment due to diseases/illnesses or limiting conditions, 5) sick-leave during the last year, 6) prognosis of work ability in two years' time, and 7) an estimate of mental resources. Each answer was allocated a different score, and in the end, the participants summed all the points to determine the final score; the total score ranged from 7 to 49 (7-27: low; 28-36: moderate; 37-43: good; and 44-49: excellent) (13). The validity of demographic and job questionnaire was determined by content validity index. OSAQ and

WAIQ are also considered valid and reliable tools, adopted in various studies including studies by Kordi (2011) and Mohamadirizi (2012), which calculated the Cronbach's alpha (0.94 and 82%, respectively) (7).

Data Analysis

Statistical analysis was performed by SPSS version 11.5, using student's t-test, one-way ANOVA, correlation coefficient, and linear regression model. Additionally, to describe the characteristics of descriptive data, $\bar{X} \pm SD$ and frequency distribution were calculated. In order to investigate the research objectives, Pearson's and Spearman's correlation tests as well as general linear regression model were used. The significance level was considered less than 0.05.

Ethical Considerations

In this study, the tests and questionnaire designers were kept anonymous, and informed consent forms were obtained from the participants; the subjects were assured about the confidentiality of personal information. Before sampling and performing the study, permission to conduct the study was granted by university ethics committee. Also, a letter of recommendation was obtained from Mashhad Faculty of Nursing and Midwifery to be presented to hospitals and healthcare centres.

Results

In the current study, the majority of subjects were within the age range of 23-33 years. Overall, 58.5% of the participants were single, 61.8% had bachelor's degree or higher, and 80% had a medium economic status.

None of the demographic characteristics had a significant relationship with occupational stress or work ability level. Also, 48.0% and 23% of the participants experienced severe/very severe and moderate work stress, respectively. In addition, 67.4%, 31.8%, and 0.8% of the subjects showed good/excellent, moderate, and poor work abilities, respectively.

Some of the job characteristics and correlations between different variables, level of work stress, and work ability are presented in Table 1 (based on student's t-test, one-way ANOVA, and Pearson's correlation coefficient).

The most common work-related stressors

Table 1. Frequency distribution of work characteristics and correlations between different variables, occupational stress level, and work ability

Variables	Mean ±SD	n (%)	Statistical variables	
			Occupational stress	Work ability
Job environment	Hospitals	75(60.97)	P= 0.03	P= 0.13
	Healthcare centres	48(39.03)	t=-3.24	
Work Shift	Day	49(39.8)	P= 0.14	P= 0.18
	Evening	19(15.4)		
	Night	20(16.3)		
Working Hours (hr per week)	Rotating	35(28.5)	P= 0.68	P= 0.45
	40≥	56(45.5)		
	40≤	67(54.5)		
Work experience (yr)	1>	10(8.1)	P= 0.22	P= 0.31
	1-5	21(17.1)		
	5-10	38(30.9)		
	10<	54(43.9)		
Mean ±SD			149 ± 0.01	38.81±0.05

Table 2. Distribution of occupational stress level according to work ability level

Occupational stress level	Work ability level				Total n (%)	P-value (Pearson)
	Low n (%)	Moderate n (%)	Good n (%)	Excellent n (%)		
Low	0(0)	2(3.3)	2(3.3)	2(3.3)	6(100.0)	P=0.02 r = -0.061
Moderate	1(1.9)	10(18.5)	36(66.7)	7(13.0)	54(100.0)	
Severe/very severe	0(0.0)	27(45.8)	24(39.0)	12(15.3)	63(100.0)	

Table 3. The distribution of occupational stress level according to workplace environment

Workplace environment	Occupational stress level				Total n (%)	P-value (t-test)
	Low n (%)	Moderate n (%)	Severe n (%)	Very severe n (%)		
Hospital	0 (0)	14 (18.91)	39 (52)	21 (28.37)	74 (60.16)	P=0.03
Healthcare centre	22 (45.83)	15 (31.25)	9 (18.7)	2 (4.1)	48 (39.02)	
Total	22 (45.83)	29 (23.57)	48 (39.02)	24 (19.5)	123 (100.0)	

Table 4. General linear regression model and predictors of work ability

Predictor variables	Unstandardized coefficients	Standardized Coefficients	P-value
Age	.221	-.331	.324
Education level	.002	-.259	.159
Marital status	.023	.468	.280
Socio-economic status	.109	-.091	.494
Occupational stress	-.621	-.123	.000
Work experience	.166	-.067	.480
Workplace environment	.001	-.110	.246
Work shift	.004	.136	.286
Working hours	.024	-.046	.511

were changing or quitting the job, insufficient number of co-workers, fear of injury by sharp objects, and insufficient time for patient check-up.

The results of Pearson's correlation coefficient showed a negative correlation between the total score of occupational stress and that of work ability (P=0.02, r = -0.061); in fact, 45.8% (n=27) of the midwives with severe occupational stress had moderate work ability (Table 2).

According to t-test, there was a significant correlation between occupational stress score and job environment, in a way that 52% of midwives, working at hospitals, had severe job

stress (P=0.03) (Table 3).

In order to control the effective variables, all variables were entered into general linear regression model. Variables affecting occupational stress and work ability including age, workplace environment, work shift, working hours, work experience, educational level, and economic status were included as independent variables, and the main variables including work stress and work ability were separately entered as dependent variables in several steps. Finally, occupational stress and work ability scores had a significance level < 0.05 and were considered as predictor variables (Table 4).

Discussion

The present study was carried out to evaluate occupational stress and work ability level of midwives, working in hospitals and healthcare centres of Mashhad, Iran. We also aimed to assess the correlations between these variables. The results showed that 58% of midwives had severe/very severe occupational stress.

In studies by Knezevic (2011) and Orji EO (2002), 76% and 83% of healthcare workers at obstetrics and gynaecology departments were believed to have job-related stress (13, 15). Compared to the mentioned results, it seems that midwives in Mashhad experience high occupational stress.

Severity of occupational stress was also related to the reliability and accuracy of the study tools. Hsu H-C (2007), by using work stress scaling, reported that occupational stress was 49.1% among nurses (21). Also, Shen (2005), using Karasek's JCQ, reported high occupational stress in 19% of the nurses (22).

Differences in cultures and workplace environments in various countries and cities, as well as mental conditions, can all be influential factors for the level of occupational stress in different jobs. In the recent study, the most common stressors were shortage of midwifery staff, fear of injury by sharp objects, and insufficient time for patient check-up. Also, Knezevic's study (2011) showed that insufficient resources, low number of employees, poor workplace management, poor communication with authorities, and emotional working environment were some of the common stressors among midwives (13). Whereas Sveinsdóttir (2005) found that work overload, insufficient consultation and communication, inadequate feedback on performance, insufficient resources, and not being able to "switch off at home" were the common stressors among Icelandic nurses (23).

Given that stressors are specifically related to the type of job, stressors in this study (for midwifery profession) were different from those of nursing profession in recent studies. Mean work ability score in this study was 38.81, which was much lower, compared to midwives' score of 40 in Knezevic's study in Croatia (2011), nurses' score of 41 in Golubic's study (2009),

and worker population' score of 41.9 in EL Fassi's research (2013) (13, 19, 24).

Different working conditions such as the number of patients under the care of midwives and cultural and social differences can result in low work ability of midwives. In addition, in the mentioned studies, work abilities of both male and female midwives were assessed, whereas in the present study, the subjects were all women. Madeleine (2013) revealed that there was a significant difference between women and men in terms of the mean score of work ability; in fact, the score of work ability for women was lower than that of men (25).

There is a significant negative correlation between the level of occupational stress and work ability, which shows that work ability decreases as occupational stress increases. Our findings were congruent with the findings of studies by Knezevic (2011) and Golubic (2009). They showed that nurses and midwives with severe occupational stress had lower work ability scores (13, 26).

Considering the harmful physical, psychological, and economic effects of occupational stress on an individual and his/her workplace, efforts in decreasing job-related stress, reevaluation of nurses' responsibilities and healthcare programs in health centres, efficient working schedules, and increasing the number of midwifery staff in healthcare centres can be of great significance; also, preventive programs such as periodic physical check-up and consulting programs will be beneficial to these employees.

Moreover, educational planners can include occupational stress, work ability scaling/indices, and the related consequences in educational programs in order to familiarize midwifery students with these concepts and prepare them for work-related challenges in the future.

Given the prevalence and severity of high occupational stress and poor work ability in midwives, there is a need for screening working conditions via standard tests. Proper management of midwives can improve the quality of working life in midwives. It is recommended that professional healthcare services integrate screening programs for healthcare personnel. In fact, some changes at workplace and educational programs are required in order to reduce work

stress and improve work ability.

Unfortunately, this study had some limitations. Firstly, the midwives might have provided inaccurate personal information in the questionnaires; however, we tried to eliminate this problem by obtaining their consent and confidence about data confidentiality. Secondly, the small number of participants might have limited the accuracy of the obtained data. In order to minimize the effect of fatigue on midwives' answers during active working shifts, the questionnaires were completed at the beginning of these working shifts.

Conclusion

The results of the current study showed that high occupational stress is related to low work ability in midwives. According to our findings, social and professional support should be provided in order to reduce occupational stress and increase high work ability. Decreasing psychological demands in the workplace may be essential for reducing stress and improving women's general and occupational health. Further studies are required to identify midwives, who are at risk of severe stress level and low work ability, and employ effective interventions.

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Conflict of Interest

The authors declare no conflicts of interest.

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