



## Quality of Working Life on Residents Working in Hospitals

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### **Abstract**

**Background:** Residents play an important role in the delivery of hospital care. They regularly work overnight, in emergency situations and with workload and stress which can affect their performance and quality of working life (QWL). This study explores the QWL and its contributory factors in residents working at hospitals affiliated with Tehran University of Medical Sciences (TUMS), Tehran, Iran.

**Methods:** Medline was searched to identify questionnaires for measuring QWL in healthcare professionals and these questionnaires were used to design a comprehensive questionnaire for measuring residents QWL. Face and content validity of the questionnaire were examined by 7 experts. The questionnaire then was completed twice with one-week interval by 14 residents to assess the inter-rater reliability. Then 310 questionnaires were distributed among residents working at different specialties in 7 hospitals affiliated to TUMS including a large general hospital, two medium general hospitals and four small single specialty hospitals. Statistical analyses were performed by SPSS.

**Results:** Totally, 263 residents (84%) completed the questionnaire. The quality of working life was very well in 18%, well in 32%, moderate in 31%, low in 14% and very low in 5% of residents. Pediatric residents had the highest and urology and internal medicine residents had the lowest quality of working life.

**Conclusion:** The QWL is high in the majority of residents, but the QWL is still not desirable in a significant proportion of them. The questionnaire used in this study is reliable and valid. The residents' QWL still need improvement.

**Keywords:** Quality, Working life, Residents, Hospital, Iran

### **Introduction**

Hospitals are complex organizations that provide services to the patients seven days a week, 24 hours a day. Doctors and nurses are the main human resources that spend a significant part of their time at the hospitals. They have to regularly work overnight, in emergency situations, with an extensive workload and stress which can negatively affect their performance and quality of working life (QWL) (1). Therefore it is very important to improve the quality of their work environment. Quality of working life is normally considered as the real work situations including employee salary, facilities, health and safety issues,

participating in decision making, management approach and job diversity and flexibility (2). Special registrars (SpR) or Residents play an important role in health care delivery in governmental hospitals. They should regularly stay and work overnight, their job is very critical and complicated and they normally face a variety of difficulties such as sleep deprivation, stress, workload and fatigue, which could have negative effects on their behavior, communication, learning ability decision making and quality of life (3, 4). Several studies have shown that stress, workload, tiredness, impatience and inadequate communication are the

main factors responsible for the majority of adverse events and medical errors in healthcare (4). Therefore, it is widely accepted that a major task of any hospital director is to explore and promote the quality of employees' working life by assessing their work environment and identifying their possible shortcomings. Previous studies have assessed the quality of working life in nurses, family physicians and so on, but there is no comprehensive research which evaluates the quality of working life in residents working in hospitals.

The aim of this study was to determine the quality of working life in residents at seven hospitals affiliated to TUMS.

## Materials and Methods

### Setting

The study was conducted in seven governmental hospitals affiliated to Tehran University of Medical Sciences, Tehran, Iran. Residents were participated in the study and completed the forms voluntarily. In the first section of the questionnaires information about the study was provided to help them decide about participating in the study. The hospitals included one large general hospital, two medium general hospitals and four single specialty (tertiary) hospitals including ophthalmology, pediatrics, gynecology and psychiatry.

### Sampling

Based on the total number of residents in each study hospital, a proportionate sample of residents was randomly selected to complete the questionnaire. These included a total of 310 questionnaires, 85 questionnaires in the large hospital, 40 questionnaires in the high medium, 30 questionnaires in the low medium and 20 questionnaires in the small tertiary hospitals.

### Method of data collection

During the period of data collection a trained researcher was present inside the residents' dormitory in each study hospital during the formal working hours. When a resident was arriving at the dormitory, she invited him/her to complete the questionnaire. This process continued until

the required number of questionnaire was completed in each hospital.

### Design of questionnaire

In order to design the questionnaire the following steps were undertaken. Medline and Google Scholar were searched to identify similar questionnaires used by other studies. Retrieved questions were combined and duplicate questions were removed. The new questionnaire was translated into Farsi and was edited several times. To evaluate the face and content validity of the questionnaire the Farsi version was checked and modified by seven experts. To check the intra rater reliability, the final version of the questionnaire was completed by 14 residents twice with one week interval. The internal consistency of the questions and the intra rater reliability of respondents were assessed by Cronbach's Alpha test.

### Data analysis

Data were analyzed using SPSS version 18. The reliability of 14 questionnaires was evaluated by test retest assay and Cronbach's Alpha test. Questions were divided in 8 separated groups and Cronbach's Alpha test was used to assess the internal consistency of each group's questions by proportions. The Descriptive analysis of the demographic variables was reported mean values and standard deviation. *P* values of less than 0.05 were considered as statistically significant.

## Results

### Cronbach's Alpha test for questions reliability

Sixty five percent of questions had very good cronbach's Alpha ( $> 0.9$ ), followed by 23% good (0.8-0.899), 6.5% average (0.7-0.799), 1.3% weak (0.6-0.699) and 5.3% very weak ( $< 0.5$ ).

### Cronbach's Alpha test for internal consistency

In order to evaluate the internal consistency among each set of questions, we divided the questions into 8 categories, then the cronbach's Alpha was calculated for each category. The cronbach's Alpha was 0.84 for questions relating to general issues, 0.97 for utilities, 0.75 for communications,

0.95 for education and research, 0.95 for management support, 0.85 for amount of salary and type of payment, 0.82 for assessment and monitoring and 0.80 for organizational and cultural issues . According to data obtained from this study the category of utilities and communications had the highest and lowest cronbach's Alpha respectively.

**Residents' quality of working life**

Totally 263 residents (84%) responded to the questionnaire.

The residents quality of working life was as follows: very good for 47 residents (18%), good for 86 residents (32%), medium for 81 residents (31%), low for 37 residents (14%) and very low for 12 residents (5%) (Table 1). Residents were specifically happy from conditions for their promotion and professional training, knowledge, expertise and attitude of their seniors and their clean and quiet residential area at the hospital.

**Table 1:** The quality of working life in residents at Tehran University of Medical Sciences

QWL	n	%
Very Good (81-95)	47	18
Good (66-80)	86	32
Medium (51-65)	81	31
Low (36-50)	37	14
Very low (20-35)	12	5
Total	263	100

**The effect of field of specialty on the residents' quality of working life**

Data showed a significant relationship between specialty and quality of working life. Pediatric residents had the highest quality of working life and the lowest one was dedicated to the urology and internal medicine specialty (Table 2).

**Table 2:** The effect of filed of specialty on the residents' quality of working life

Specialty		QWL					Total	Pvalue
		Very low	Low	medium	Good	Very Good		
Surgery	n	0	4	21	22	16	63	0.003
	%	0	6.3	33.3	34.9	25.4	100	
Gynecology	n	0	7	6	16	3	32	
	%	0	21.9	18.8	50	9.4	100	
Psychiatry	n	0	0	9	6	0	15	
	%	0	0	60	40	0	100	
Internal Medicine	n	7	13	18	20	11	69	
	%	10.1	18.8	26.1	29	15.9	100	
Pediatics	n	0	1	5	10	4	20	
	%	0	5	25	50	20	100	
Ophthal-mology	n	3	7	12	7	11	40	
	%	7.5	17.5	30	17.5	27.5	100	
Urology	n	2	5	10	5	2	24	
	%	8.3	20.8	41.7	20.8	8.3	100	

There was a significant relationship between the field of study and QWL. Pediatric residents had the highest quality of working life and the lowest one was dedicated to the residents of urology and internal medicine

**The effect of hospital on the residents' quality of working life**

The QWL was significantly different between the hospitals. The highest quality of working life was observed in Children's Medical Center and the lowest quality of working life in Mirza Kochak Khan Hospital (Table 3).

**The effect of hospital ward on the residents' quality of working life**

A significant relationship was observed between hospital ward and residents' quality of working life .The highest quality of working life was in pediatics and women wards and the lowest QWL was in the emergency departments (Table 4).

**Table 3:** The residents' quality of working life in each study hospital

Hospital			QWL					Total	P value
			Very low	Low	Me- dium	Good	Very Good		
Hospital	Dr Shariati	n	4	10	21	19	12	66	0.041
		%	6.1	15.2	31.8	28.8	18.2	100	
	Rozbeh	n	0	0	9	6	0	15	
		%	0	0	60	40	0	100	
	Mirza Kochak Khan	n	0	5	2	7	1	15	
		%	0	33.3	13.3	46.7	6.7	100	
	Children's Medical Center	n	0	1	5	11	4	21	
		%	0	4.8	23.8	52.4	19	100	
	Farabi	n	3	7	12	6	11	39	
		%	7.7	17.9	30.8	15.4	28.2	100	
	Baharlo	n	1	1	5	13	5	25	
		%	4	4	20	52	20	100	
	Sina	n	4	13	27	24	14	82	
		%	4.9	15.9	32.9	29.3	17.1	100	

There was a significant difference in the residents' quality of working life among the study hospitals. The lowest and the highest quality of working life were observed in Mirza-Kochak-Khan and Children's Medical Center respectively

**Table 4:** The effect of hospital ward on the residents' quality of working life

Ward			QWL					Total	P value
			Very low	Low	Me- dium	Good	Very Good		
Ward	Surgery	n	0	6	28	21	18	73	<0.001
		%	0	8.2	38.4	28.8	24.7	100	
	Gynecology	n	0	7	12	24	2	45	
		%	0	15.6	26.7	53.3	4.4	100	
	Internal Medicine	n	9	20	32	30	25	116	
		%	7.8	17.2	27.6	25.9	21.6	100	
	Pediatrics	n	0	1	6	8	1	16	
		%	0	6.3	37.5	50	6.3	100	
	Emergency	n	3	2	2	1	0	8	
		%	37.5	25	25	12.5	0	100	
	ICU	n	0	1	1	1	1	4	
		%	0	25	25	25	25	100	

There was a significant relationship between the hospital wards and residents quality of working life. The highest quality of working life was in pediatrics and women wards and the lowest quality of working life was in the emergency department

## Discussion

This study showed that the quality of working life was high or moderate in the majority of residents working at TUMS. The QWL was related to the field of study. Residents were satisfied with their conditions for promotion and professional train-

ing, knowledge, expertise and attitudes of their seniors, and their clean and quiet environment of their residential area.

Shabani and colleagues found that the most of Mazandaran Family Physicians have a moderate to low quality of working life. In addition their data demonstrated that there was an inverse correlation

between the amount of job experience and quality of working life (5). The family physicians that had less experience had the higher quality of working life and by raising the work experience their quality of working life was dropped (5). Also, their data showed that, family physicians with the lowest working time (41- 54 hours per week) had the highest quality of working life. Shabani and colleagues therefore concluded that the intensive working time had negative effects on the working life quality of these family physicians (5).

We found that 61.2 % of residents believed that there was a direct correlation between their salary and the quality of their performance. Dargahi et al. showed that different factors such as hospital size, nurses' responsibilities, wage, working experience have a significant effect on quality of working life of nurses. These nurses believed that, working in small hospitals, and having more working experience with executive responsibility and higher wage result in higher quality of working life (6).

We also found that the following reduce the QWL: sleep deficiency and fatigue, night shift work, low access to senior residents, in proportionate correlation between authority and responsibility and insufficient nurses' proficiency. Davenport and colleagues showed that surgical residents would be more satisfied if they were sure that patients received good health care in hospitals. Their study moreover, showed that other factors such as training nurses and liberty in the pressing of health care related suggestion have positive effect on residents' job satisfaction (7). Beasley and colleagues investigated the effect of employment on the family physicians' quality of working life. Their data demonstrated that independent family physicians had better working relationships, greater ability to achieve professional goals and lesser intention to leave their work. They participated more in management decisions, and were more satisfied with family time and being a physician (8).

Our results showed that night shift work-induced sleep deprivation and fatigues effect on private life (55.9%), medical decision (57.6%) and medical errors (52.9%). Morriss and colleagues found that human factors such as ignorance, impatient

communication and fatigues are responsible for a proportion of medical errors. They study showed that fatigues was responsible for 3- 10% of medical errors in 10 last years (4).

Our results showed that working at TUMS results in more job satisfaction compared to other universities. Perry and colleagues showed that being a graduate student and the field of study influence the job satisfaction (9).

In our study, 34.2% of residents believed that their occupation do not allow them to spend adequate time with their family. This problem could be followed by the high amount of working time in the hospital. 34.2 % of residents believed that their long working time caused them to do not have adequate time for their other social roles. Steel and colleagues showed that surgical students' fatigues and sleep deprivation result in unsatisfied social and family life. Moreover, insufficient family time, physical complains, pregnancy complication for female residents and car accident raised after a night work (10).

In our study 33% of residents believed that nurses are not expert properly and so they can not confide nurses to assign important tasks to them. Davenport and colleagues found that surgical residents would have the higher job satisfaction, if they observed high-quality health care. Davenport and colleagues believed that nurses' proficiency is the prerequisite of high-quality health care (7).

32.3 % of residents involved in this study believed that they do not have enough job authority. Duffy and colleagues investigated about job satisfaction in family, internal, surgical, pediatric, and psychiatric physicians. They concluded that success in job accomplishment, care continuity and job authority impressed these physicians job satisfaction (11).

Regarding to our results we can deduced that, residents' quality of working life improving factors are: residents satisfaction with, conditions providing for specialized training, professors' good behavior, work cleaning, and their field of study.

This study suggests that by considering to the residents' quality of working life impressing factors the residents' quality of working life could be improved.

## Conclusion

This study showed that the QWL was very good or good for the majority of residents working at TUMS; however some elements of the QWL should be improved and the QWL should be improved in a proportion of residents.

## Limitation of the study

The process of data collection in the hospitals given the possible tiredness of the residents is likely to affect their QWL.

## Ethical considerations

Ethical issues (Including plagiarism, Informed Consent, misconduct, data fabrication and/or falsification, double publication and/or submission, redundancy, etc) have been completely observed by the authors.

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## References

1. Cooke MW, Kelly C, Khattab A, Lendrum K, Morrell R, Rubython EJ (1998). Accident and emergency 24 hour senior cover- a necessity or a luxury? *Accid Emerg Med*, 15:181-184.
2. Beaudoin LE, Hassles EL (2003). Their importance to nurses' quality of work life. *Nurs Econ*, 21:106-113.
3. Olsen EJ, Drage LA, Auger RR (2009). Sleep deprivation, Physician performance, and patient safety. *Chest*, 136(5):1389-96.
4. Moriss GP, Moriss RW (2000). Anesthesia and fatigue :an analysis of the first 10 years of Australian incident monitoring study 1987-1997. *Anaest Intensive Care*, 28:300-304.
5. Shabani H (1388). Determine the quality of work life (QWL) family physicians in the province in 1388. MSc thesis. Tehran University of Medical Sciences.
6. Dargahi H, Gharib M, Goudarzi M (1386). Quality of work life of nurses in hospitals of Tehran Medical Sciences University. *Journal of Nursing and Midwifery, Medical Sciences, Tebran, (Hayat)*, 13(2):13-21.
7. Davenport DL, Henderson WG, Hoqan S, Mentzer RM, Zwischenberger JB (2008). Surgery resident working conditions and job satisfaction. *Surgey*, 144(2):332-338.
8. Beasley JW, Karsb BT, Hagenauer ME, Marchand L (2005). Quality of work life of independent vs employed family physicians in Wisconsin. *Ann Fam Med*, 3(6):500-506.
9. Henry BP (1978). The Job Satisfaction of Physician Assistants: A Causal Analysis. *Soc Sci Med*, 12(5A):377-385.
10. Steel MT, John O, Watson WA (1999). The occupational risk of motor vehicle collisions for emergency medicine residents. *Acad Emerg Med*, 6:1050-3.
11. Ryan DD, George VR (2005). Physician job satisfaction across six major specialties. *Journal of Vocational Behavior*, 68:548-559.