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Quality of Working Life Assessment among Train Drivers in Keshesh Section of Iran Railway

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ABSTRACT

Quality of working life (QoWL) is the attitudes of employees towards their job, especially their work outcomes including job satisfaction, mental health, and safety which directly influence organizational outcomes. Therefore, the aim of the present study was to evaluate train drivers' QoWL and determine its influencing factors. In this descriptive-analytical and cross-sectional study, QoWL was evaluated among 100 train drivers working in Keshesh section of Iran Railway. In this sense, WRQoL scale was used which assesses five factors of Control at Work, General Well-Being, Home-Work Interface, Job and Career Satisfaction, Stress at Work, and Working Conditions. Total score of QoWL was calculated and the effects of age, work experience, marital status, education, satisfaction with the salary, and satisfaction with the supervisor on the QoWL were assessed. Data was analyzed statistically using SPSS version 18. Working Conditions and Home-Work Interface with the mean score of 1.37 and 2 were the most critical QoWL factors, respectively. Furthermore, no significant relations were observed between demographic and background variables and total score of QoWL. Overall, the quality of working life has obtained a low score among the understudy train drivers. Therefore, appropriate measures should be adopted in order to promote QoWL of this occupational group especially in two factors of Working Conditions and Home-Work Interface.

Keywords: *Train driving, Quality of working life, Home-Work Interface, Working Conditions, WRQoL scale*

INTRODUCTION

Quality of working life (QoWL) is a multifaceted concept introduced by Mayo (1930) for the first time. Mayo investigated the effect of illumination of the workplace on the employees' productivity and noted that quality of work life can influence workers performance and efficiency. Following, the concept of quality of working life has been vastly applied in various domains and numerous definitions have been presented for this concept [1].

Yousef et al. (1996) defined it as a general term which cover workers' emotions about all dimensions of their work including financial rewards, benefits, job security, working conditions, organizational communications, and interpersonal relations [2].

According to Cummings and Worley (1997) quality of working life is the way of thinking about others, work, and the organization which is concerned about workers' wellbeing and organizational productivity [3].

In an overview, quality of working life can be defined as the workers' reaction to their career

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especially personal outcomes including job satisfaction, mental health, and safety [4].

Physical working environment, compensation systems, organizational rights, organizational decisions, job content, social relations, and job development are important factors related to job design. Job content characteristics that impact QoWL and should be taken into consideration while job design are as following: diversity of tasks, job feedback, perceived contribution in producing or giving a service, challenges, job opportunities for using skills, autonomy, and job control [5, 6].

Proper job design can have a positive effect on operators' quality of working life and the improvements in the QoWL would positively impact organizational outputs. The concept of quality of working life has been developed recently and the simple concept that "improvements in quality of working life and increase in satisfaction would result in better productivity" has been changed into more complex concepts. For instance, it is highlighted that better QoWL can improve employees' communication, collaboration, and their ability and finally it improves variables related to work outcome. Currently, the main focus of studies related to QoWL is on providing opportunities for workers' participation and empowering the workforce [5, 7-8].

Empowering employees and increasing their collaboration are of the positive characteristics of an organization which can lead to improvements in QoWL, reduction in stress, and also reduction in health related problems [8].

Gustavsen (1998) also emphasized that changes in the area of QoWL should be done in a way that help the organization to solve its problems and also it should present new strategies for establishment of positive changes in the employees' QoWL [9].

Previous researches have presented various dimensions of QoWL. For instance, Velayudha and Venkatachalam (1997) summarized 12 QoWL dimensions presented in the studies during 1973 to 1996. Seven dimensions which were in different studies include: job security, financial rewards, autonomy, organizational and interpersonal communications, collaboration and commitment of employees, working conditions and job complexity, opportunities for personal advancements, and the overall emotion of the operators toward their QoWL. Five other factors each mentioned only in one study are as: stress at work, communications between management and unions, belief in a concerned worker, belief in management support, and also belief in QoWL [10].

Van laar et al. (2007) gathered a collection of 200 items related to QoWL in different scales and designed a new scale considering all factors that affect employees' quality of working life. This new scale, evaluate broader factors related to quality of working and nonworking life of workers [11].

Train driving is among safety critical jobs in railway industry which needs a high level of workload due to continuous demands (e.g. concentration, control, monitoring) and the necessity for management of unpredicted events (e.g. technical problems, collisions). Moreover, train driver can be exposed to stress due to problems which is not directly related to driving duty, for instance: long hours of driving, and lack of sufficient sleep [12].

This occupational group can be exposed to both physical stressors (e.g. vibration and noise) and also psychosocial stressors (high pace of work, concern about accidents) [13]. High level of workload, irregular working hours, limited opportunities to influence working conditions, and also factors such as deficit and shortcomings of the organization, poor relationships between employees and organization are of the other stressors in this job [12, 14].

The above-mentioned stressors can lead to negative effects on train drivers' physical status (cardiovascular diseases, gastrointestinal diseases, musculoskeletal disorders, and fatigue), mental status (e.g. depression, anxiety, post-traumatic stress disorders), and also train drivers behavior. The mentioned effects on train drivers' health status also influence the organizational efficiency and productivity in terms of increase in rate of absenteeism, turnover, and also accidents [15].

Therefore, assessing the most important factors which influence train drivers quality of working life is considerably important. On the other hand, up to now no study have done related to train drivers' quality of work life. Thus, the aim of this study was to assess quality of working life of train drivers in Keshesh section of Iran railway and also to determine its influencing factors.

MATERIALS AND METHODS

This analytical-descriptive and cross-sectional study was done among 100 train drivers working in Keshesh section of Iran railway in 2012, who were selected randomly. WRQoL scale developed by Van Laar et al. (2007) was used for assessing QoWL. This questionnaire included 24 questions in Likert Scale (1-5) which had 6 factors: Control at Work (CAW), General Well-Being (GWB), Home-Work Interface (HWI), Job and Career Satisfaction (JCS), Stress at Work [16], and Working Conditions (WCS) [11].

Shabaninejad et al. (2012) have determined the validity and reliability of the Persian version of the scale [17]. In this study the reliability of the questionnaire was determined using test-retest with an interval of two weeks. Moreover, Cronbach's Alpha was calculated. Another questionnaire was developed for collecting demographic and background variables including: age, experience, education, marital status, and also working hours a week, satisfaction with the salary, and satisfaction with the supervisor. Data were analyzed using SPSS version 18.

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Table 1. Cronbach's Alpha for six factors of WRQoL scale in the present study

Factors of QoWL	CAW	GWB	HWI	JCS	SAW	WCS
Cronbach's Alpha	0.726	0.673	0.726	0.805	0.677	0.815

CAW: Control at Work, GWB: General Well-Being, HWI: Home-Work Interface, JCS: Job and Career Satisfaction, SAW: Stress at Work, WCS: Working Conditions

Table 2. Distribution of subjects according to demographic and background variables

Variables	Frequency	Relative frequency (%)	Mean score of WRQoL
Age groups			
20-30	21	21.2	2.52
31-40	52	52.5	2.46
41-50	11	11.1	2.82
>50	15	15.2	2.44
Work experience [18]			
<5	11	11	2.41
5-10	32	32	2.49
11-15	30	30	2.50
16-20	3	3	2.69
>20	24	24	2.60
Education			
Diploma	49	54.4	2.50
Associate degree	29	32.2	2.61
Bachelor	11	12.2	2.26
Marriage status			
Married	82	82	2.53
Single	18	18	2.38
Work hours a week			
<20	1	1	2.90
20-40	2	2	2.52
41-50	10	10.2	2.34
51-60	37	37.8	2.55
>60	48	49	2.50
Satisfaction with supervisor			
Yes	44	45.4	2.57
No	53	54.6	2.47
Satisfaction with salary			
yes	3	3.1	2.83
No	94	96.9	2.49

RESULTS

QoWL of 100 train drivers were evaluated. Results of Spearman correlation showed acceptable reliability (correlation coefficient of 0.867). Moreover, an acceptable internal consistency was observed (Cronbach's Alpha =0.889) (Table 1).

Demographic and background variables

Descriptive data related to demographic and background variables for train drivers in the present study are presented in Table 2. The mean±SD age for participants was 37.29±8.78 and the mean±SD for work experience was obtained 14.1±9.07. 54.4% of train drivers had diploma and 82% were married. 49% of participants believed that they work more than 60 hours a week. 45.4% were satisfied with their supervisor and 96.9% were dissatisfied with their salary.

Variables related to quality of working life

Quality of working life was evaluated by through six factors: Control at Work, General Well-Being, Home-

Table 3. Descriptive data for the factors generated from the data set

Factors of quality of working life	Total number	Mean	Standard deviation
General Well-Being (GWB)	96	3.62	1.80
Home-Work Interface (HWI)	96	2	1.74
Job and Career Satisfaction (JCS)	96	3.21	1.98
Control at Work (CAW)	96	3.04	2
Working Conditions (WCS)	96	1.37	1.85
Stress at Work (SAW)	96	4.29	1.74
WRQoL	96	2.92	1.51

Table 4. Six factors and overall WRQOL norm table for all UK higher education employees (N=5963)

Factors of quality of working life	Total number	Mean	Standard deviation
General Well-Being (GWB)	5431	5	2
Home-Work Interface (HWI)	5429	5	2
Job and Career Satisfaction (JCS)	5435	5	2
Control at Work (CAW)	5437	5	2
Working Conditions (WCS)	5356	5	2
Stress at Work (SAW)	5423	5	2
WRQoL	5439	4.9999	1.540

Work Interface, Job and Career Satisfaction, Stress at Work, Working Conditions. Since the QoWL is a comparative concept, its comparison with other studies can provide a better perspective regarding the current status of the study sample.

For this purpose, information related to QoWL of UK higher education employees was considered as a criterion. Descriptive data of WRQoL factors for the present study and for the comparison sample are presented in Table 3 and Table 4, respectively. As shown in Figure 1, all factors of WRQoL of train drivers are lower in comparison with the UK employees. Moreover, it was observed that two factors of Working Conditions and Home-Work Interface with mean scores of 1.37 and 2 have obtained the lowest values amongst factors of WRQoL.

The relations among demographic and background variables and total WRQoL score

Kruskal-Wallis statistical test was used to investigate the differences in QoWL of train drivers with different age group, education level, work experience, and work hours. Furthermore, for comparing QoWL between different marital statuses, and satisfaction with salary and supervisor, Man-Whitney statistical test was employed. As shown in Table 2, QoWL had the highest values among married drivers, the age group of 41-50, work experience of 16-20 years, those with associate degree, and with work hours of less than 20 hours a week. Moreover, it was revealed that train drivers that were satisfied with their manager and also their income had a better QoWL. However, none of the above-mentioned differences were statistically significant.

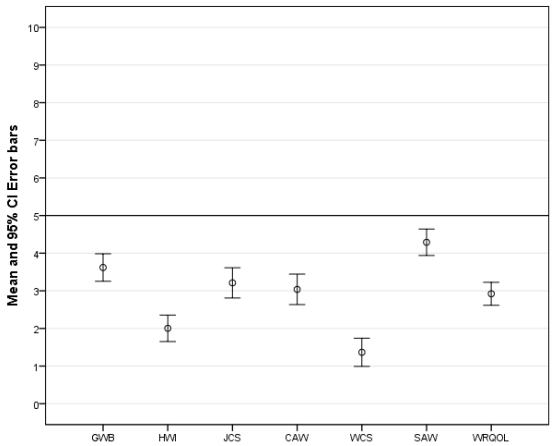

Fig 1. The mean scores and 95% CI's for each of the six factors and the overall WRQoL factor. Values above 5.0 indicate higher quality of working life and values below 5.0 indicate lower quality of working life compared to the comparison group

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Table 5. Comparison of WRQoL mean value according to demographic and background variables

Variables	*P*-value
Age (yr)	0.569
Work experience	0.958
Education	0.311
Marital status	0.676
Work hours in a week	0.241
Satisfaction with the manager	0.599
Satisfaction with the income	0.852

DISCUSSION

In the present survey, QoWL were assessed by six factors of Control at Work, General Well-Being, Home-Work Interface, Job and Career Satisfaction, Stress at Work, and Working Conditions. Accordingly, Working Conditions with the mean score of 1.37 was the most critical factors of quality of working life from train drivers' view point. To our knowledge, no similar studies have been done pertinent to QoWL among train drivers and most of the studies evaluated quality of life.

In addition, WRQoL scale has been used only in two studies in Iran among family physicians and specialists with the Home-Work Interface as the most critical factors of WRQoL in both groups [17, 19].

In the WRQoL scale, Working Conditions can be compared with Job and Career Satisfaction. JCS reflects the degree that the workplace provides workers with the best things at work such as personal achievements, promotion and career advancements, and recognition, whilst the WCS factor conversely, shows the degree that the workplace meets workers basic requirements. WCS includes aspects of the work environment such as noise, temperature, working hours, tools and equipment etc. [20].

Few studies have investigated working conditions of train drivers in Iran. Physical environment of train drivers is consisted of immediate and intermediate environment including cabin, tracks, and track limits. Physical agents in cabin also include noise, vibration, light, temperature, driver seat, layout of equipment, layout of controls etc.

Koohi (2006) investigated Iranian train drivers working conditions and identified their work related risk factors. The results showed that inappropriate temperature in the cabin, lack of vision during night, lack of air condition; uncomfortable seat, improper layout and design of controls and indicators, and disruption of wireless system were of the most important physical problems from the view point of train drivers which had an important role in accidents [21].

In 1986 Austin and Drummond reported the most crucial physical problems of Australian train drivers as: ear discomfort while entering tunnels, poor climate condition, and sun glare [22]. Overall, a few studies investigated physical problems related to train drivers workplaces.

In the study by Johanning et al. (2002) it was revealed that vibration, which transmitted to the drivers' body, in train cabs is high comparing other transportation vehicles [23]. In this regard, in 2006 Johanning et al. have investigated whole-body vibration and ergonomic evaluation of train seat in the United States. According to results, in all cases the level of vibration was higher than the standard. Additionally, a significant correlation was observed between duration of driving during night and risk factors of low-back pain, pain in the neck and shoulder, and sciatic pain [24].

According to our results, Home-Work Interface had the second priority among WRQoL factors. This factor shows the relationship between personal life and working life, the effects of these two domains on each other, and items such as sufficient facilities at work, flexible working hours, and understanding of managers [25]. Train drivers have irregular working hours. Moreover, most of the time, they are far from their families. Irregular working hours and inappropriate shift schedules are inevitable parts of train driving job which interfere in their personal life.

Train drivers who were satisfied with their salary and their supervisor had a higher level of QoWL. Moreover, train drivers who were married, those with less working hours a week, with more years of experience, and with associate degree education level had higher QoWL. However, these differences were not statistically significant which might be due to small sample size of this research.

Small sample is of the limitation of the present study. Moreover, despite validity and reliability of WRQoL scale, the content validity of the scale is recommended to be determined in the future studies in a way that the scale can be used in other occupational groups.

CONCLUSION

Overall, quality of working life has obtained a low value which implies the poor condition of train drivers. Two factors of Working Conditions and Home-Work Interface were the most important factors of QoWL.

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Therefore, related measures for improving the QoWL of this occupational group should be adopted, especially in the area of these two factors. Considering the safety critical role of train driving, implementation of ergonomic programs should be taken into account as a priority.

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