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# Working in Perceived Dangerous Workplace will lower the Healthy Workers' Health-Related Quality of Life (HRQOL) Status: A Cross Sectional Online Survey

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## Abstract

**Background:** Workers' health-related quality of life (HRQOL) is an important measure that could be used to assess and address work-related problems such as absenteeism, reduced productivity, and early retirement due to health reasons. **Objective:** The main purpose of this study is to determine the HRQOL of apparently healthy workers and the factors that could influence it. **Results:** The mean score for Physical Health and Mental Health of the workers were 63.2 (SD = 31.4) and 43.9 (SD = 26.7), respectively. There was a significant relationship between the perception that the workplace exposed the workers to danger and their Physical Health ( $t = 2.259$  (158), mean difference = 11.5,  $p = 0.03$ ). **Conclusion:** Regular work safety and wellness programs should be implemented in any organization to meet the workers' expectation of safety in the workplace.

**Keywords:** Health, Quality of Life, Workers, Factors, Dangerous Workplace

## Introduction

Past research commonly measured the quality of life among workers in terms of quality of work life (QWOL), which refers to a person's favorableness or distastefulness of a job environment (Hossain & Shirazi, 2018; Vischer & Wifi, 2017). On the other hand, health-related quality of life (HRQOL) is defined as an individual's or a group's perceived physical and mental health over time, and is more likely measured among the unhealthy population or usually among a clinical or hospital-based population (CDC, 2019). Although workers are commonly associated with being healthy, there is a need to explore their quality of life from a health-related aspect. This is because the trend of taking unneeded sick leaves, poor talent retention, reduced or loss of productivity, and early retirement due to health or medical reasons have been found to relate directly to health. Poor health was also found to be among the significant determinants for low

work productivity and work efficiency in the past (Marliyati, Yunieswati & Setiawan, 2018). A study on the HRQL of workers could assist the employer or organization in understanding their workers' need and thus increase their productivity and satisfaction with their job. The main purpose of this study is to determine the HRQOL status of apparently healthy workers and the factors that could influence it. The findings of this study will provide insight for the human resource planning and health-related program managers to identify focus areas in which to implement steps that will ensure their workers have a good HRQOL during their period of employment.

### **Methodology**

This study was conducted among workers employed by a single public higher education provider in the medical education field from June 2017 until June 2018. The target population included all categories of workers including lecturers, administrative staff, and support staff that were registered as active users in the online mailing list of the internal organization.

The study instrument was a self-administered questionnaire comprising three sections: Section 1: Socio-demographic details; Section 2: Health profile & Workplace perception; and Section 3: Medical Outcome Study 36-Short Item (MOS-36). Section 3 of the questionnaire incorporated health-related quality of life measurement tools published by RAND Corporation (RAND, 2018). This tool was developed to score the health-related quality of life domains using a Likert scale of summated ratings. The final results interpretation was done via analysis of the resulting linear scales, assuming that the item scores, on average, linearly related to the underlying health concept being measured. The final score was presented as two health categories: Physical Health and Mental Health. This questionnaire was pre-tested via an online survey involving 30 respondents to ensure content validity and reliability. A Cronbach's alpha value of 0.94 was obtained, indicating good content validity and reliability.

Data collection was done by distributing an initial survey invitation to the study population and general monthly reminders to participate in the study until the end of the study period. Data from this online survey was transferred to SPSS software version 24.0 for analysis. Descriptive analysis (percentage, mean with standard deviation) and inferential statistical analysis (Independent T-test and Analysis of Variance) were employed to achieve the study objective.

### **Results**

#### ***Respondents' characteristics, health profile and workplace perception***

The total number of respondents (workers) that answered the online survey was 196. The health profile of the respondents showed that the majority were non-smokers (77%), had never drink alcoholic beverages (82%), engaged in physical exercise at least once a week (48%), and had no previous diagnosis of any chronic illness (58%). Only 40.3% of the respondents perceived the workplace as stressful while 3.6% were shift workers. Table 1 summarized the socio-demographic characteristics of these respondents.

**Table 1. Socio demographic characteristics of respondents.**

<b>Respondents' Characteristics</b>	<b>N (%)* or Mean (SD)</b>	<b>95% Confidence Interval</b>
<b>Age</b>	36.4 (6.0)	35.3, 37.6
<b>Gender</b>		
Male	52 (26.5%)	
Female	115(58,7%)	
<b>Marital Status</b>		
Single	35 (17.9%)	
Married	130(66.3%)	
Separated/ Divorce/ Widowed	2 (1.0%)	
<b>Educational Level</b>		
Certificate	19 (9.7%)	
Diploma	39 (19.9%)	
Bachelor's Degree	36 (18.4%)	
Master's Degree	40 (20.4%)	
PhD/ Doctorate	28 (14.3%)	
<b>Duration of employment</b>	7.0(3.4)	6.4,7.7
<b>Employment Status</b>		
Contract		
Permanent	18(9.1%)	
	149(76.0%)	

\*Percentage of subcategories may not add up to 100% due to participants did not select their status

### **HRQOL of Respondents**

The mean scores of the Physical Health and Mental Health of respondents were 63.2 (SD = 31.4) and 43.9 (SD = 26.7), respectively. Respondents with no past diagnosis of any chronic illnesses had higher Physical Health and Mental Health (50.1 vs. 45.0) scores compared to their counterparts (64.1 vs. 59.5). However, these differences were not statistically significant, as shown in Table 2. There was a significant relationship between the perception that the workplace exposed the workers to danger and their Physical Health ( $t = 2.259$  (158), mean difference = 11.5,  $p = 0.03$ ). Other health-related factors were found to have no significant relationship with either Physical Health or Mental Health, as listed in Table 2.

**Table 2. Relationship between Health related factors and workers' HRQOL**

Health related Factors	Physical Health			Mental Health		
	Mean (SD) Scores	Test stats (df)	p	Mean (SD) Scores	Test stats (df)	p
<b>Smoking<sup>a</sup></b>		-0.71	0.48		-0.17 (160)	0.17
Yes	55.9 (38.3) 62.8 (30.9)	(160)		55.9 (38.3) 49.3 (23.2)		
No						
<b>Past diagnosis of chronic illness<sup>a</sup></b>		0.85	0.40		1.01 (159)	0.31
Yes		(159)				
No	59.5 (29.9) 64.1 (31.5)			46.0 (22.2) 50.1 (21.0)		
<b>Family member with chronic illness<sup>a</sup></b>		-0.72	0.48		-0.003 (154)	0.43
Yes		(154)				
No	65.1 (27.4) 60.8 (33.0)			48.2 (23.3) 48.2 (24.4)		
<b>Exercise Frequency practice<sup>b</sup></b>		0.212 (3, 156)	0.89		0.109 (3, 156)	0.96
Never						
Once a day	58.7 (28.5) 61.4 (33.5) 63.0 (36.8)			21.8 (3.3) 27.8 (11.3) 27.8 (6.8)		
Once every 2 days	63.3 (31.8)			24.0 (2.5)		
Once a week						
<b>Perceived workplace danger<sup>a</sup></b>		2.259	0.03*		1.134 (158)	0.26
Yes	67.0 (29.0) 55.5 (32.8)	(158)		50.7 (21.6) 46.3 (26.2)		
No						
<b>Perceive stressful workplace<sup>a</sup></b>		0.087	0.93		0.155 (156)	0.88
Yes	64.1 (28.8) 63.7 (31.5)	(156)		50.0 (19.5) 49.4 (26.1)		
No						

<sup>a</sup>Independent T-test, <sup>b</sup>ANOVA, \*p<0.05 taken as level of significance

## Discussion

The health-related quality of life (HRQOL) of the workers in this study was measured in terms of the level of Physical and Mental Health components using a validated measurement tool (MOS-36), which has been widely used in quality of life research worldwide. Overall, the workers in this study had a more than average HRQOL in terms of Physical Health based on a cut-off point of 50.

In contrast, the Mental Health level of the workers was found to be below the average score (43.9). These findings support an earlier study conducted among academicians in Pakistan universities (Khan, Yusoff & Isa, 2016). The study found that about half of the academicians in the university had psychological health problems including anxiety, social dysfunction, and depression due to various factors related to the teaching profession. In comparison, the present study involved a mixed population of academicians and other university workers. Nevertheless, the implication of psychological health problem warrants further investigation because the question of whether non-lecturers also experience similar psychological health issues, which lead to lower HRQOL, still needs to be answered. The majority of workers in this study had no prior history of suffering from chronic illnesses, were non-smokers, had never drink alcoholic beverages, and engaged in physical exercise at least once a week. Therefore, these could have contributed to their above-average level of Physical Health. In a systematic review, Warburton and Bredin (2016) recommended that healthy individuals that exercise even a miniscule bit could still achieve health benefits.

Healthy workers were found to have higher HRQOL scores than those with a past diagnosis of chronic illnesses. In contrast, Nielsen, Ovesen, Mortensen, Lau & Joensen (2016) found that the difference in scores was not statistically significant. In their population-based study, the quality of life among the general healthy population was compared with Type-1 diabetes patients. They found that the latter group had a significantly lower HRQOL, lower levels of employment, and took more sick leaves per year. This contrasting finding might be due to the reason that workers with a past diagnosis of chronic illness have to comply with their treatment in order to be productive at the workplace even in the younger age group of less than 40 years old.

The mental health scores of workers that perceived their workplace as stressful were surprisingly almost similar to the score approaching the average cut-off point (50.0 vs. 49.4) and are therefore not statistically significant. The contradictory evidence from earlier studies indicates that the presence of stressors will significantly lower the quality of life of workers (Bae & Min, 2016; La Torre et al., 2018; Ogunsanya, Bamgbade, Thach, Sudhapalli & Rascati, 2018; Opollo, Gray & Spies, 2014). This could be due to the possibility that the workers in this study had access or channels to mental wellness programs in the workplace, as they are in the medical education field.

The present study found that the workers' perception that their workplace exposed them to danger was the only factor that significantly affected their Physical Health. Those who did not perceive their workplace as dangerous scored about 12 points higher in the Physical Health aspect. This finding echoes findings in other studies on dangerous or hazardous workplaces and their significant effect on the health and work quality of workers (Eslamian, Akbarpoor & Hoseini, 2015).

The strength of this study is the insight it offers into the HRQOL of an apparently healthy productive population working in a medical education field measured using an internationally

validated measurement tool. Nevertheless, the outcome of this study was limited due to the small sample size. During the study period, in order to overcome this limitation, a monthly reminder to participate in the study was sent to the target population until the end of the study period. This study might also not represent the work scenarios of other medical education providers, as it was conducted in a single center only. In the future, the replication of this study methodology could be done using a prospective approach so that more robust study outcomes could be obtained.

### Conclusion

The perception of workplace safety was found to be an important factor that could lower the Physical Health aspects of worker HRQOL. A worker's HRQOL, in turn, determined his or her retention, turn-over rate, and productivity in an organization. Thus, employers and Human Resource managers must ensure workplace safety and implement wellness programs in their organization to ensure the workers' expectation of safety at work is fulfilled.

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