


Study of Work Ability Index (WAI) and Its Association with Demographic Characteristics Among Firefighters

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ABSTRACT

Background and Objectives: Assessing the workability of employees is very important, and firefighting is one of the critical jobs. Therefore, the aim of this study was to evaluate the work ability index (WAI), and identify some effective factors among firefighters.

Methods: This cross-sectional study was carried out with participation of 101 firefighters in Zahedan, Iran in 2018. Subjects were included in the study by census method. Data were collected using a two-part questionnaire (demographic information and WAI items), and data analysis was performed using SPSS 24.

Results: The mean of age and work experience of the subjects were 34.18 ± 6.70 and 8.47 ± 6.79 years, respectively. Only 18 individuals (17.8%) were single, and most of them exercised at least once a week. The mean score of WAI was 44.33 ± 3.56 and most of the subjects were in the excellent range. With increasing age and work experience, WAI decreased, and there was also a significant relationship between marital status and weekly exercise with WAI.

Conclusion: In general, the condition of the firefighters was favorable in terms of workability. However, due to the relationship between personal characteristics and WAI, it is necessary to adjust the duties of older people with more work experience.

Keywords: Work Ability Index, WAI, Firefighters



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Extended Abstract

Introduction

Assessing the workability of employees is very important, and firefighting is one of the critical jobs. Therefore, the aim of this study was to evaluate the work ability index (WAI), and identify some effective factors among firefighters.

Methods

This cross-sectional study was carried out with participation of 101 firefighters in Zahedan, Iran in 2018. Subjects were included in the study by census method. Data were collected using a two-part questionnaire (demographic information and WAI items), and data analysis was performed using SPSS 24 (SPSS Inc., Chicago, IL., USA).

Results

The mean of age and work experience of the subjects were 34.18 ± 6.70 and 8.47 ± 6.79 years, respectively. Only 18 individuals (17.8%) were single, and most of them exercised at least once a week. The mean score of WAI was 44.33 ± 3.56 and most of the subjects were in the excellent range. With increasing age and work experience, WAI decreased, and there was also a significant relationship between marital status and weekly exercise with WAI.

Discussion

The aim of this study was to study the work ability index and the factors affecting it in firefighters. In general, the results of this study showed that the average score of the work ability index among firefighters was 44.33 and this index was between 33 and 49. The value of work ability index in firefighters of Saremi *et al.*'s study was 38.85, which was lower than the value obtained in our study [27]. Given that the mean age and work experience of firefighters in the two studies were similar, the difference in the value obtained can be attributed to the difference in other conditions. It is obvious that Zahedan firefighters have significant differences in lifestyle and working conditions compared to Tehran firefighters. Also, according to the results of a study published by Hatami and Afshari [25], the

average work ability index was 34.65, which was lower than the value in our study. Given that the selected firefighters in the Hatami and Afshari studies were operating in one of the petrochemical industries, they may have been influenced by some influential variables such as job stress or different weather conditions from the population studied in our study. In addition, as noted in the study by Saremi *et al.*, mental workload can also affect work ability [27]. The results of a study conducted by Kiss *et al.* on older firefighters (mean age 51.5 years) [26] showed that the average work ability index was 40.6, which shows that older firefighters are less able to work compared to our study.

Based on the working ability index classes, it was found that most of the firefighters in the present study had excellent ability to do the job, and in general, the average was higher than most studies conducted on other occupational groups (other than firefighters). For example, Habibi *et al.* reported the Nursing Ability Index obtained in their study to be around 38, which was lower than in our study [32]. In addition, the results of the study by Akbari *et al.* showed that the index of ability to work in the employees of a cement factory was about 41, which was also less than the value in our study [18]. One of the main reasons for the good working condition of most of the firefighters studied can be related to interviews and early employment tests. Due to the high sensitivity of the firefighting job, it is necessary for people with maximum ability to be selected for this job in order to achieve the maximum compatibility between humans and work [24].

According to the results of this study, there was an inverse linear relationship between age and ability to work in fire stations. In other words, older people were less able to work, and this result is consistent with previous studies in this field [25-27, 32]; while the findings of Akbari *et al.* were inconsistent with our study. They concluded that there is a positive correlation between age and work ability index [18]. The study of Kavousian *et al.* Also showed that with age increasing, the ability to work of individuals

decreased, which is consistent with the results of our study [19]. Also, in the study of Bugajska *et al.*, a negative correlation was observed between age and study subjects (both men and women) [33]. It is noteworthy that the relationship between age and the ability to work index in a 4-year study was similarly reported that increasing age is associated with a decrease in the ability to work [34].

The results of the present study also showed that there is a significant negative correlation between work ability index and work experience. In this regard, the research of Akbari *et al.* showed that the correlation between work experience and the ability to work in the employees of the cement plant was positive, which is not consistent with our results [18]. However, the results of Habibi *et al.*'s study on employees showed that people with high work experience had a lower ability to work, which was in line with the results of our study [32].

Another finding of this study was about comparing the ability to work in single and married people. Based on this, it was found that single people are more capable of doing work. A study by Saremi *et al.* also showed that marriage has a negative effect on the ability to work [27]. A study by Habibi *et al.* found that single people were more able to do work than married people [32] and that this could be due to stressors. Previous studies have shown that job stress levels in married women are higher than single, and on the other hand, it has been found that

there is a negative correlation between stress and the ability to work [21].

The present study showed that regular exercise during the week is associated with increased ability to do work. Kavousian *et al.* concluded that the greatest ability to do work was related to a group of people who exercised on a daily basis [19]. Therefore, it is appropriate for managers of industries and organizations to design regular exercise programs and encourage employees to exercise in order to achieve higher levels of productivity of their employees.

Conclusion

In general, the condition of the firefighters was favorable in terms of workability. However, due to the relationship between personal characteristics and WAI, it is necessary to adjust the duties of older people with more work experience.

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Conflict of Interest

The authors declared no conflict of interest.