

# The Relationship of General Health Condition with Safety Attitudes and Demographical Specifications in Workers of Car after-Sale Services Workshops Iran 2019

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## Abstract

**Background:** Health condition of workers affects their productivity. The relationship between general health and safety attitudes is not quite clear.

**Objective:** The present paper is an attempt to examine the relationship of general health condition with safety attitude and demographical specifications of workers at car after-sale services workshops in Ardabil-Iran.

**Materials and Method:** The study was carried out as a descriptive-analytical cross-sectional study. The sample group consisted of 650 workers in small car after-sale services workshops located in Ardabil City. Three questionnaires including a demographical form, the General Health questionnaire (GHQ-28), and the safety attitude inventory were used for data gathering. The collected data was analyzed in SPSS19.

**Results:** The mean score of safety attitude was  $71.05 \pm 2.3$  and the mean score of general health was  $24.96 \pm 3.35$ . The score of general health had a significant relationship with age group, work experience, marital status, education level, and history of work incident. The mean scores of safety attitude was significantly different depending on age group, work experience, workshop ownership status, marital status, education level, income, and history of work accident.

**Conclusion:** The subjects had a low safety attitudes score and high probability of general health disorders. General health condition was directly related to safety attitude of the participants. Therefore, providing applied educations based on the workers' needs to increase awareness and improve safety attitudes of workers can lead to a decrease in the rate of work accidents and a higher general health in the workers.

**Keywords:** General Health, Safety Attitude, worker, Small Workshops

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## Introduction

Attitudes is a preset collection of answers that people develop throughout experiencing similar situations. In addition, attitude can be defined as one's tendency to a specific behavior in specific situation and positive (accepting) or negative (rejecting) response

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to others, things, and situations <sup>(1)</sup>. Observing safety codes has to do with the attitudes that affect safety behaviors and might decrease the risk of accidents <sup>(2-3)</sup>. Studies have shown that work environments with workers who have a positive attitude to safety have a lower rate of job accidents and that there is a significant relationship between safety attitudes and the risk of accidents and injuries at work. An increase in safety attitude at work leads to a decrease in work accidents <sup>(4)</sup>. Some safety experts even believe that all accidents are rooted in negative attitudes to safety in workers <sup>(5)</sup>. Some studies have shown that demographical variations are effective in the safety attitudes in workers so that it grows with age and work experience <sup>(6)</sup>. Normally, small workshops (less than 10 workers) fail to provide adequate and quality safety and health services and jobs are done in poor work conditions. In contrast however, small workshops play the key role in the development of national economy, creating job, and self-employment <sup>(7)</sup>. Small workshops are one of the pillars of economy in all countries <sup>(8)</sup>. The work force at small industries constitute 40% and 60% of total workforce in the industrial and developing countries respectively <sup>(9)</sup>. As the statistics by the Ministry of Health, Treatment, and Medical Education in Iran show, small workshops constitute 98% of workshops and more than 80% of job opportunities in the country. Depending on the economy and the level of development, different definitions are available for small workshops. According to instruction by the Ministry of Industries in Iran, workshops with 10 or fewer workers are considered as small workshops <sup>(10)</sup>. These workshops are a growing source of creating job opportunities and supported by economic and development policies of the county; still, safety and health in them are at an undesirable level <sup>(11)</sup>. Several studies have been conducted on the general health of workers and among many a study on general health and the factors in a power board factory is notable <sup>(12)</sup>. In <sup>(13)</sup>, the effect of job stress on general health and performance of flight safety personnel was examined. Lack of safety control and safety knowledge in workers have increased the rate of debilitating accidents and diseases at workshops <sup>(14-15)</sup>. Workers' attitude about safety is affected by several variables; although, the relationship between these variables and safety attitude are not quite clear. Therefore, examining safety attitudes and the factors and actual role of each factor in the attitude, mainly in small workshops that host the majority of workforce in Iran, can be a large step towards attenuating the risk of damages caused by accidents and diseases <sup>(16)</sup>. While

there have been several studies about safety attitudes in large industries, there is a paucity of studies on safety attitude in small industries. Given the importance of general health and safety attitudes in workers, the present study is an attempt to survey the relationship of general health with safety attitudes and demographical specifications of workers in small car after-sale services workshops in Iran (2019).

## Material and Method

### Participants

A descriptive-analytical cross-sectional study was carried out in 2019. Study population was comprised of the workers in 550 small workshops (less than 10 employees) of car after-sale services in Ardabil. Inclusion criteria were desire to participate and working in a small workshop of car services (engine, paint, body repair, services, and electrician technicians) in Ardabil. Exclusion criterion was reluctance to participate.

The data was collected using a demographic form, the General Health Questionnaire (GHQ-28), and the safety attitude inventory. The participants were selected from 550 small workshops in Ardabil in June 2019. The questionnaires were distributed among the workers by two researchers (n=1134) and collected after three weeks by revisiting the workshops. Totally, 650 workers took part in the study.

The demographics form included age, work record, workshop ownership status, marital status, education, income, history of accident at work, and severity of accidents.

To determine safety attitudes, a standard safety attitude questionnaire was used. With 25 questions, the questionnaire measures safety attitudes in the workers. The questions are designed based on Likert's five-point scale. Total score range is 25-125 so that scores  $\geq 75$  indicate a positive safety attitude and scores  $< 75$  represent a negative safety attitude. The higher the score the more positive the safety attitudes <sup>(17)</sup>.

To measure general health of the participants GHQ-28 was used, which is a questionnaire with 28 items designed by Goldberg and Hiller (1979). Validity and reliability of the Farsi version were supported by Noorhala et al. <sup>(26)</sup>. The questions are designed based on Likert's four-point score. Total score ranges from 0 to 84 and scores  $\geq 23$  indicate probable health disorders

and scores <23 indicate an acceptable general health condition <sup>(18)</sup>.

Data analyses were done in SPSS19 so that the mean score of quantitative variables were compared using independent-sample T-test and one-way ANOVA. To examine the relationship between quantitative variables, Pearson’s correlation was used and the relationship among qualitative variables were examined using chi-square (p=0.05).

**Results**

The mean age of the participants was 36.48±10.3 and the youngest and oldest workers were 15 and 75 years old respectively. The mean work experience was 15.3±9.6 and the shortest and longest work experiences were 1 and 53 years respectively. The mean score of general health was 24.96±3.35 -i.e. probable general health problems. The mean scores of general health were significantly different in terms of age, work experience, marital status, education level, and history of work accident. Workers older than 50 years old and those with more than 20 years of work experience had the highest score of GHQ-28. In addition, the unmarried, and those with low education level also had high GHQ-28 scores. High GHQ-28 score indicates the high probability of general health problems. There was a significant difference in safety attitude scores in terms of age group, work experience, ownership status of the workshop, education level, income, and a history of work accident. The workers younger than 30 years old and those with a work experience of less than 10 years had the lowest score of safety attitudes. The illiterate workers and those with low income levels had a lower safety attitude. Those who had rented the workplace and married individuals had a lower safety attitudes. The workers who had experienced a work accident had a lower safety attitude.

The correlation test showed that there was a significant relationship among general health, safety attitudes, age, and work experience. The general health score had an inverse and significant relationship with safety attitudes and since the lower general health score means a better health condition, the higher the safety attitude the better the general health condition. Workers with strong safety attitudes had a better general health condition (Table 1). Moreover, there was a direct relationship between general health condition and safety attitudes.

**Table 1: The relationship among general health, age, work experience, and safety attitudes of the workers**

Correlate	Safety Attitude	Age	Job Experience
General Health	-0.191**	0.267**	0.247**

\*\* : Correlation is significant at the 0.01 level (2-tailed)

**Discussion**

Workers who had experienced a work accident had a higher general health score and for this the experience of accident must be taken into account. Gholami et al. (2014) studied general health condition and the factors in workers of a power board manufacturer in Kerman. They showed that factors like education level can be effective in general health condition of the workers, which is consistent with our results. It is possible to improve general health condition by studying and focusing on the controls of accidents and education <sup>(12)</sup>. Demographical variables like age and work experience had an inverse relationship with general health so that an increase in age and work experience decreased general health condition. The reason form this can be the aging phenomenon that increases health problems including general health problems. Sanaie Nasab et al. (2016) examined the effect of stress at work on general health and productivity in personnel of flight control services. They argued that stress had a negative effect on productivity and that general health was a mediatory variable between work stress and productivity of flight control personnel <sup>(19)</sup>. The safety attitudes score was significantly different in terms of age, work experience, ownership status of workshop, marital status, education, income, and history of work accidents. Saedi et al. (2019) examined the relationship between demographical variables and safety atmosphere and showed that these variables played a role in safety atmosphere. Given the low level of safety atmosphere in small and medium-sized industries, the role of demographical variables in such industries is stronger <sup>(20)</sup>. Their findings are consistent with ours so that with aging, safety attitudes become stronger. The score of safety attitudes was significantly different in terms of the severity of work accident. Loosemore et al. (2019) conducted a study titled “safety education and creating positive safety attitude in Australian

manufacturing industry” and found that age, gender, and education were potential mediators in the process of development of positive safety attitudes. Studies have recommended paying more attention to using new technologies in developing safety education programs<sup>(21)</sup>. A study by Sanaie Nasab et al. showed that the mean score of awareness was significantly related to education level<sup>(19)</sup>. Yin et al., on the other hand, showed that there was no relationship between education level and safety attitude<sup>(22)</sup>. Williamson et al. maintained that a mere reliance on engineering approaches without improving safety attitudes of the workers or creating an effective safety system surely fails. Their results highlighted the importance of improving safety attitudes<sup>(16)</sup>.

### Conclusions

The results showed that the safety attitudes were negative and the general health condition of workers was low. The effective variables in safety attitudes were age, education level, and experience of accident. An improvement of safety attitudes can lead to a better general health condition. Therefore, holding face-to-face and virtual education workshops designed based on the workers’ needs by the state supervising bodies are recommended to improve awareness and attitudes of workers. Such measures, hopefully, lead to a lower rate of accidents and a better general health in the workers.

**Conflicts of Interest:** The authors declare no conflict of interest.

**Ethical Clearance:** Taken from Department of Health committee, University of Medical Sciences, Ardabil. IR.ARUMS.REC.1398.338

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