

# Safety behavior of agricultural workers around face mask-wearing during the COVID-19 pandemic

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## Abstract.

**BACKGROUND:** Agricultural labor-intensive activities have been threatened by COVID-19. Wearing a face mask has been introduced as one of the personal protective equipment (PPE) to reduce COVID-19 risk.

**OBJECTIVE:** The present study aimed to investigate the safety behavior of urban green space workers around wearing a face mask in the time of COVID-19 before vaccination.

**METHODS:** The personal and safety backgrounds of 61 male participants were collected using a designed questionnaire. The nonparametric correlation coefficients of Spearman and logistic regressions were used to investigate the relationships among variables.

**RESULTS:** Above one-third of workers (37.7%) got COVID-19 in the past year. Although all of the participants were aware of wearing a face mask is a protocol against COVID-19, only about half of them (50.8%) completely wear face masks at work. Non-smoking participants were 5.5 times more likely to influence their personal preference on wearing the mask.

**CONCLUSION:** Safety attitude may be a key variable in relation to the factors that influence the wearing face mask. The causes of face mask-wearing during a pandemic such as COVID-19 as well as safety attitudes may be behind the factors studied in this study. Although some significant linkages were found, they were not enough to conclude a comprehensive action program. This concern is still open to discovering factors that influence wearing face mask.

Keywords: Agricultural health and safety, personal protective equipment (PPE), coronavirus, labor-intensive farm activity, occupational injury

## 1. Introduction

The agricultural sector is accounted as a dangerous occupation among industries. Farmworkers are often engaged in labor-intensive activities [1–3]. These activities potentially pose occupational health risks [4, 5]. As a subsequence, some of the injuries which are known as the agricultural-related ones, such as lung cancer, poisoning, and sunstroke, may be occurred [1, 6].

Occupational injuries could be mitigated by personal protective equipment (PPE). The face mask as a

PPE is usually used to partly protect workers from the respiratory health effects in some occupations such as agricultural work [7]. Diseases that the mask is used to protect workers from may be communicable or non-communicable. Obviously, the existence of communicable diseases is very dangerous in labor-intensive agricultural activities.

The COVID-19 pandemic is the most dangerous communicable disease in the world today. This global crisis causes the death of millions of people throughout the world since about two years ago [8]. COVID-19 crisis as an occupational disease has hurt

many activities, and depleted workforces [9], especially in agricultural farms [10]. Wearing a face mask has been introduced as one of the main measures to reduce COVID-19 risk [11]. Therefore, the use of face mask could be expressed as a PPE against this risk among agricultural farm workers and a good instance of the causes of depleting workforces' ability.

One of the most labor-intensive agricultural activities is urban green space maintenance. This activity is common in almost all urban regions with a large number of workers [12]. Although these workers should wear a face mask during their working times intervals according to one of the important COVID-19 global protocols, they may not do so. The safety behavior of these workers is almost not studied around wearing a face mask during COVID-19. The present study aimed to investigate the safety behavior of urban green space workers in Iran about wearing a face mask in the time of COVID-19 and the factors that influence it before vaccination. Outcomes of this study could be useful in decision-making around the management of a pandemic, such as COVID-19, before discovering the measures (such as vaccination, etc.) to effectively restrain it. These may be useful to be considered in the management of COVID-19 even after introducing various vaccines because this pandemic still threatens fully vaccinated people.

## 2. Material and methods

### 2.1. Participants

Participants considered in this study were urban green space workers of the Municipality of Behbahan, a city located in southwest Iran. All of them were male. Their work tasks often included pruning and trimming the trees, shrubs, and lawns; irrigation; and removing rubbish from green space (Fig. 1). The following criteria were considered to enter the pruners in the study: full consent to take part in the study; at least one-year work experience in the studied activity. Finally, 61 workers were recruited from the 75 that work in the Behbahan Municipality's urban green space maintenance section.

### 2.2. Designing the questionnaire

A questionnaire was developed that required about 20 minutes to be filled out according to the recommendations [1]. The designed questionnaire required

an average of 5 minutes to be completed in the Persian version. The questionnaire consisted of personal background (age, height, mass, marital status, smoking status, work experience, educational level, and underlying diseases; doing work tasks alone/or in a group); and safety background (getting COVID-19 in the past year, believing that COVID-19 is dangerous/or not (safety attitude); hearing about wearing a face mask is a protocol against COVID-19 (safety awareness); and wearing a face mask (safety act)). Additionally, factors that could potentially influence the decision of participants whether or not to use the face mask were at the end of the questionnaire. These factors were collected and developed in a pre-study with interviews with workers as well as library research. They were listed as follows: advised by family (in short: Family), advised by friends (in short: Friends), advised by doctors (in short: Doctor), government/employer regulations (in short: Employer), ease of use (in short: Ease), having underlying health problems (in short: Problem), kidded by others (in short: Kidding), untidiness of personal appearance (in short: Appearance), lengthiness of time duration in which mask should be worn (in short: Time), cost and/or difficulty to supply face mask (in short: Cost), personal preference (in short: Preference). The influence of these factors was measured using the visual analog scale (VAS) [1] which was a 10-centimeter horizontal line on a piece of paper with two anchors of zero and ten indicating none and severe, respectively. Participants were asked to mark a point on the VAS. Distance between zero and that point showed the severity of influence (Fig. 2).

### 2.3. Data collection

Filling out the questionnaires was performed through face-to-face interviews. In doing so, the interviewer read the questions and wrote down the answers of the participants. Marking the point on each VAS bar was done by the participants themselves immediately after reading the certain question by the interviewer. Before conducting the study, participants were instructed to mark an appropriate point on the VAS. Data were collected before the participants took the first dose of the COVID-19 vaccine.

### 2.4. Ethics approval

Privacy was considered about the personal information of the participants. Informed consent from them was considered in the present study. The relia-



Fig. 1. Trimming the trees (left) and trimming the lawns (right) by the workers.

Participant number: ...		
Hi! Please listen to each question carefully and answer to them. Thanks!		
Personal background		
Age: ... years	Height: ... meter	Mass: ... kilogram
Work experience: ... years	Marital status: <input type="radio"/> Single <input type="radio"/> Married	Smoking: <input type="radio"/> No <input type="radio"/> Yes
Educational level: <input type="radio"/> Illiterate <input type="radio"/> Primary school <input type="radio"/> Middle school <input type="radio"/> Diploma <input type="radio"/> Academic		Underlying disease: <input type="radio"/> No <input type="radio"/> Yes
When you perform your work tasks you are often alone or in group? <input type="radio"/> Alone <input type="radio"/> Both alone and in the group <input type="radio"/> In the group		
Safety background		
Have you got COVID-19 in the past year? <input type="radio"/> No <input type="radio"/> Yes		
Do you believe that COVID-19 is dangerous? <input type="radio"/> No <input type="radio"/> Yes		Do you hear about wearing face mask is a protocol against COVID-19? <input type="radio"/> No <input type="radio"/> Yes
Do you wear face mask at work? <input type="radio"/> Not at all <input type="radio"/> Yes somewhat <input type="radio"/> Yes, absolutely		
Please mark an appropriated point to express the influence of each factor that could potentially influence your decision whether or not to use the face mask.		
Advised by family	0 ●	● 10
Advised by friends	0 ●	● 10
Advised by doctors	0 ●	● 10
Government/employer regulations	0 ●	● 10
Ease of use	0 ●	● 10
Having underlying health problems	0 ●	● 10
Kidded by others	0 ●	● 10
Untidiness of personal appearance	0 ●	● 10
Lengthiness of time duration in which mask should be worn	0 ●	● 10
Cost and/or difficulty to supply face mask	0 ●	● 10
Personal preference	0 ●	● 10

Fig. 2. An English-translated version of the original version of questionnaire which was in Persian.

bility and validity of the questionnaire were evaluated and approved by the HSE committee of the Agricultural Sciences and Natural Resources University of Khuzestan. The questionnaire had been developed based on common conversations among urban green space workers and was tested and modified several times with several workers to gain a clear questionnaire. The study was conducted in accordance with the ethical standards of the Declaration of Helsinki.

### 2.5. Calculations and statistical analyses of data

To calculate body mass index (BMI), body mass (kg) was divided by the square of height (m<sup>2</sup>) [13]. Statistical Package for Social Sciences (SPSS) v. 16 (SPSS Inc., USA) was used to statistically analyze the data. The personal, occupational, and safety backgrounds of workers were expressed through means, standard deviations, ranges, and frequencies (num-

bers and percentages). Values collected from VAS about factors potentially influencing the decision of participants whether or not to use the face mask were presented as number (percentage) of low ( $\leq 5$ ) and high ( $> 5$ ) values.

The nonparametric correlation coefficient of Spearman was used to investigate the correlation between variables considering 0.05 and 0.01 significant levels. In this way, variables were divided into two categories (age:  $\leq 35$  and  $> 35$  years; height:  $\leq 1.75$  and  $> 1.75$  meters; mass: BMI:  $< 25$  and  $\geq 25$  kg/m<sup>2</sup>; work experience:  $\leq 10$  and  $> 10$  years; educational level: middle school and lower, and diploma and higher; doing work tasks alone/or in the group: alone and both alone and in the group/in the group; wearing a face mask: “no at all” and “yes somewhat”; and “yes, absolutely”) [1, 13, 14]. According to the results of correlations, binary logistic regressions were investigated by entering significant variables in the nonparametric correlations. Omnibus Test of Model and Hosmer and Lemeshow Test were considered about the significance of regressions.

### 3. Results

Participants were averagely 38.4 years old with a mean work experience of 8.5 years (Table 1). Twenty-nine of them had a diploma or an academic degree of education. Forty-one percent of the participants were often alone when performing their work tasks. Above one-third of them (37.7%) got COVID-19 in the past year. The danger of COVID-19 was the belief of 91.8% of study workers. Although, all of the participants were aware of wearing a face mask is a protocol against COVID-19, only about half of them (50.8%) completely wear a face mask at work (Table 1).

Advisory by family and doctor, personal preference followed by being advised by friends had the highest frequencies of high values among the potential factors that influence the wearing a face mask among urban green space workers (Table 2). Most of the participants reported that being kidded by others (88.5%), untidiness of personal appearance (98.4%), lengthiness of time duration in which mask should be worn (72%), and cost and/or difficulty to supply face mask (78.7%) had not a high influence on their decision whether or not to use the face mask (Table 2).

Getting COVID-19 in the past year, safety attitude (believing that COVID-19 is dangerous/or not),

Table 1  
Personal, occupational, and safety backgrounds of urban green space workers ( $n = 61$ )

Age (year)	
Mean (SD)	38.4 (8.8)
Range	27–63
Height (m)	
Mean (SD)	1.74 (0.07)
Range	160–190
Mass (kg)	
Mean (SD)	82.0 (16.9)
Range	52–141
BMI (kg/m <sup>2</sup> )	
Mean (SD)	27.1 (5.1)
Range	18.9–40.3
Work experience (year)	
Mean (SD)	8.5 (5.3)
Range	1–23
	No. (%)
Marital status	
Single	15 (24.6)
Married	46 (75.4)
Smoking	
No	45 (73.8)
Yes	16 (26.2)
Educational level	
Illiterate	1 (1.6)
Primary school	16 (26.2)
Middle school	15 (24.6)
Diploma	20 (32.8)
Academic	9 (14.8)
Underlying disease	
No	43 (70.5)
Yes	18 (29.5)
Doing work tasks alone/or in the group	
Alone	25 (41.0)
Both alone and in group	36 (47.5)
In the group	7 (11.5)
Getting COVID-19 in the past year	
No	38 (62.3)
Yes	23 (37.7)
Believing that COVID-19 is dangerous/or not (safety attitude)	
No	5 (8.2)
Yes	56 (91.8)
Hearing about wearing face mask is a protocol against COVID-19 (safety awareness)	
No	61 (100.0)
Yes	0 (0.0)
Wearing face mask (safety act)	
No at all	5 (8.2)
Yes, somewhat	25 (41.0)
Yes, absolutely	31 (50.8)

and safety act (wearing a face mask) had no significant correlation with other variables related to the personal, occupational, and safety background ( $p$ -values  $> 0.05$ ) (Table 3). Smoking had positive and negative significant correlations with kidding (kidded by others) and preference (personal preference),

Table 2  
Values of potential factors that influence the wearing mask  
among urban green space workers ( $n = 61$ ), no. (%)<sup>\*</sup>

Factors	Values	
	Low	High
Family	5 (8.2)	56 (91.8)
Friends	20 (32.8)	41 (67.2)
Doctor	9 (14.8)	52 (85.2)
Employer	27 (44.3)	34 (55.7)
Ease	27 (44.3)	34 (55.7)
Problem	35 (57.4)	26 (42.6)
Kidding	54 (88.5)	7 (11.5)
Appearance	60 (98.4)	1 (1.6)
Time	44 (72.1)	17 (27.9)
Cost	48 (78.7)	13 (21.3)
Preference	12 (19.7)	49 (80.3)

<sup>\*</sup>Note: Family: advised by family, Friends: advised by friends, Doctor: advised by doctors, Employer: government/employer regulations, Ease: ease of use, Problem: having underlying health problems, Kidding: kidded by others, Appearance: untidiness of personal appearance, Time: lengthiness of time duration in which mask should be worn, Cost: cost and/or difficulty to supply face mask, Preference: personal preference.

respectively, with  $p$ -values of 0.003 and 0.004. Safety attitude established significant correlations with six of the potential factors that influence face mask-wearing. These factors included being advised by family ( $p$ -value: 0.006), by friends ( $p$ -value: 0.019), by doctors ( $p$ -value: 0.002), ease of use ( $p$ -value: 0.038), kidded by others ( $p$ -value: 0.037), and cost and/or difficulty to supply face mask ( $p$ -value: 0.028) (Table 3).

Some binary logistic regressions were considered based on the significant correlations (Table 4). Only the significant ones were detailed, and among the variables of these regressions, only the predictor variables with significant  $\beta$  were shown (Table 5) to observe brevity. The participants who believed that COVID-19 is dangerous were 11.902 times more likely to be influenced by doctors' advice about wearing a face mask than ones who had no such belief. Ease of use was explained by the educational level of participants ( $p$ -value: 0.004), while the variations in safety attitudes could not explain the variations in ease of use. Safety attitude could not also explain the variations of being kidded by others, whereas smoking did it ( $p$ -value: 0.015). Non-smoking participants were 5.5 times ( $\frac{1}{0.181}$ ) more likely to influence their personal preference on wearing a face mask, which could be ranged between 1.3 ( $\frac{1}{0.789}$ ) and 23.8 ( $\frac{1}{0.042}$ ).

#### 4. Discussion

Workers with lower stature were less dependent on their personal preferences, and simultaneously, doctor advice and having underlying health problems were more important in view of them. Although paying attention to doctors' advice and underlying health problems are generally good attributes, these three variables showed the footprint of a low level of self-esteem in the participants with short stature. Studies confirm that people with short stature may have a low level of self-esteem [15].

Workers with a suitable safety attitude (believing that COVID-19 is dangerous), had been influenced more by family, friends' advice, and especially doctor's advice (as the safety attitude was a significant predictor variable for it in the regression). Moreover, the ease or difficulty of using of face mask, the cost and/or difficulty to supply it, and being kidded by others were less important to them, implying that they tried to use a face mask in every situation. It could be said that if the safety attitude is modified toward a better level, implementations against communicable occupational risks, especially COVID-19, are more effective.

Being kidded by others was important for smoking workers, as it was a significant predictor variable in the regression of kidding. It implied that the idea of the others around smokers' act of wearing a face mask was important for these workers and they were more inclined to the others' wishes than non-smokers. Smoking could be associated with losing free will, in which the capability to act in different ways, subject to the person's own control and serving the person's reasons, goals, wishes, and choices [16]. The probability of the existence of this concern would be stronger when the smoking status has a negative significant correlation with personal preference, and, additionally, is a significant predictor for it in the regression ( $p$ -value: 0.023). It shows that smokers are a vulnerable population and may be threatened more in a pandemic such as COVID-19.

Ease or difficulty of use of the face mask was not very important for the participants with a higher level of education. People with a higher educational level are usually more risk-aversion [17] and attempt more to provide a higher level of safety. In this way, if the difficulty of using a face mask is accounted as a negative matter, education could help them overcome negative situations easier than their colleagues with lower educational levels [14, 18].

Table 3  
Correlation coefficient and significance between personal, occupational, and safety backgrounds, and potential factors that influence the wearing mask among urban green space workers\*

	Getting COVID-19 in the past year	Safety attitude	Safety act	Family	Friends	Doctor	Employer	Ease	Problem	Kidding	Appearance	Time	Cost	Preference
Age	-0.140	0.075	-0.083	-0.045	0.104	0.067	0.143	0.077	0.157	0.034	0.123	0.152	-0.066	0.107
	0.282	0.568	0.525	0.730	0.424	0.609	0.272	0.556	0.228	0.796	0.345	0.241	0.615	0.412
Height	-0.111	-0.173	0.198	0.209	0.041	<b>-0.399</b>	-0.081	-0.010	<b>-0.320</b>	0.077	-0.090	-0.045	-0.108	<b>0.258</b>
	0.394	0.182	0.126	0.107	0.751	<b>0.001</b>	0.537	0.937	<b>0.012</b>	0.554	0.490	0.732	0.409	<b>0.045</b>
Mass	-0.166	0.204	0.081	0.085	0.198	-0.012	-0.159	-0.026	-0.137	0.022	-0.140	-0.088	-0.083	0.041
	0.202	0.114	0.535	0.517	0.127	0.926	0.222	0.842	0.291	0.866	0.281	0.501	0.525	0.755
BMI	-0.105	0.173	-0.058	-0.081	0.107	0.103	0.010	-0.060	0.108	-0.077	-0.185	-0.033	0.022	0.094
	0.420	0.182	0.655	0.533	0.410	0.428	0.937	0.646	0.409	0.554	0.154	0.800	0.864	0.473
Marital status	-0.027	0.107	0.047	0.246	-0.074	-0.130	0.104	0.028	0.184	-0.033	-0.226	-0.070	0.018	0.005
	0.836	0.412	0.717	0.056	0.569	0.317	0.424	0.833	0.155	0.799	0.080	0.594	0.889	0.971
Smoking	-0.003	-0.094	-0.159	0.042	-0.219	0.038	-0.144	0.231	0.014	<b>0.370</b>	0.217	-0.204	-0.037	<b>-0.361</b>
	0.985	0.473	0.221	0.746	0.090	0.772	0.269	0.073	0.917	<b>0.003</b>	0.094	0.114	0.775	<b>0.004</b>
Work experience	-0.047	-0.014	-0.114	0.109	0.039	-0.058	0.080	0.080	0.082	-0.174	-0.100	-0.106	0.008	-0.040
	0.720	0.914	0.381	0.402	0.766	0.658	0.538	0.538	0.531	0.180	0.441	0.415	0.950	0.757
Educational level	0.004	-0.075	0.214	0.045	-0.034	-0.252	-0.143	<b>-0.341</b>	-0.223	-0.034	0.136	-0.079	-0.014	0.058
	0.973	0.568	0.097	0.730	0.792	0.050	0.272	<b>0.007</b>	0.084	0.796	0.297	0.544	0.912	0.656
Underlying disease	0.090	-0.069	-0.226	-0.069	0.069	0.066	-0.147	-0.075	-0.122	-0.120	-0.084	0.159	-0.073	-0.042
	0.490	0.599	0.079	0.599	0.597	0.611	0.258	0.567	0.351	0.356	0.522	0.221	0.574	0.751
Doing work tasks alone/or in group	0.098	-0.127	0.114	-0.006	0.128	-0.159	-0.004	-0.072	<b>-0.293</b>	-0.014	-0.155	0.146	0.108	<b>0.258</b>
	0.452	0.328	0.383	0.964	0.325	0.222	0.973	0.584	<b>0.022</b>	0.916	0.233	0.261	0.407	<b>0.044</b>
Getting COVID-19 in the past year	-	-0.137	-0.114	-0.014	-0.033	0.038	0.012	-0.056	-0.055	0.038	-0.100	0.120	0.173	-0.126
		0.291	0.381	0.914	0.800	0.774	0.925	0.669	0.674	0.770	0.441	0.357	0.182	0.335
Safety attitude	-0.137	-	0.184	<b>0.346</b>	<b>0.301</b>	<b>0.381</b>	0.215	<b>-0.266</b>	0.016	<b>-0.267</b>	0.039	-0.214	<b>-0.282</b>	0.002
	0.291		0.155	<b>0.006</b>	<b>0.019</b>	<b>0.002</b>	0.096	<b>0.038</b>	0.904	<b>0.037</b>	0.768	0.097	<b>0.028</b>	0.985
Safety act	-0.114	0.184	-	0.184	0.081	-0.039	0.114	-0.150	-0.147	-0.160	0.127	-0.120	-0.209	0.091
	0.381	0.155	-	0.155	0.533	0.763	0.383	0.247	0.259	0.217	0.329	0.357	0.106	0.487

\*Notes: Significant correlations at level of 0.05 or 0.01 are shown as bold and italic. Values of "Hearing about wearing face mask is a protocol against COVID-19 (safety awareness)" were constant for all of participants. Therefore this variable was not entered in the investigations of correlations. Safety attitude: believing that COVID-19 is dangerous/or not, Safety act: wearing face mask, Family: advised by family, Friends: advised by friends, Doctor: advised by doctors, Employer: government/employer regulations, Ease: ease of use, Problem: having underlying health problems, Kidding: kidded by others, Appearance: untidiness of personal appearance, Time: lengthiness of time duration in which mask should be worn, Cost: cost and/or difficulty to supply face mask, Preference: personal preference.

Table 4  
Binary logistic regressions investigated according to the significant correlations\*

Dependent variable	Independent variable(s)	Significance of model
Family	Safety attitude	No
Friend	Safety attitude	No
Doctor	Height + safety attitude	Yes
Ease	Educational level + safety attitude	Yes
Problem	Height + doing work tasks alone/or in group	No
Kidding	Smoking + safety attitude	Yes
Cost	Safety attitude	No
Preference	Height + smoking + doing work tasks alone/or in group	Yes

\*Note: Safety attitude: believing that COVID-19 is dangerous/or not, Family: advised by family, Friends: advised by friends, Doctor: advised by doctors, Ease: ease of use, Problem: having underlying health problems, Kidding: kidded by others, Cost: cost and/or difficulty to supply face mask, Preference: personal preference.

Table 5  
Binary logistic regressions with significant model (only the predictor variables with significant  $\beta$  were shown in detail)\*

Dependent variable	Independent variable(s)	$\beta$	$p$	OR	95% CI	Sig.
Doctor	Height	-2.287	0.013	0.102	0.017–0.613	Omnibus Test of Model = 0.001 Hosmer and Lemeshow Test = 0.550
	Safety attitude	2.406	0.039	11.902	1.123–109.539	
Ease	Educational level	-1.657	0.004	0.190	0.061–0.597	Omnibus Test of Model = 0.001 Hosmer and Lemeshow Test = 1.000
	Safety attitude		ns			
Kidding	Safety attitude		ns			Omnibus Test of Model = 0.007 Hosmer and Lemeshow Test = 0.486
	Smoking	2.292	0.015	9.895	1.558–62.847	
Preference	Height		ns			Omnibus Test of Model = 0.008 Hosmer and Lemeshow Test = 0.594
	Smoking	-1.707	0.023	0.181	0.042–0.789	
	Doing work tasks alone/or in group		ns			

\*Notes: OR: Odd ratio, CI: Confidence interval. Sig.: Omnibus Test of Model is significant when below 0.05. Hosmer and Lemeshow Test is significant when over 0.05. Safety attitude: believing that COVID-19 is dangerous/or not, Doctor: advised by doctors, Ease: ease of use, Kidding: kidded by others, Preference: personal preference.

As self-confidence is connected to confidence on own skills, performance, and ideas [19], personal preference could be a branch of self-confidence. The present study revealed a positive significant linkage between doing work tasks in the group and personal preference. It was in the line of former studies which showed some positive relationships between self-confidence and some indexes of team working [19, 20]. This relationship could be accounted as a good point. However, because of the creation of a labor-intensive situation, working in the group may increase getting COVID-19, although the linkage between these was not significant. Therefore, team working has apparently two anchors in pandemic management, especially COVID-19, which are opposite to each other. Additionally, having underlying health problems was not very important for the participants who worked in the group. It could be hazardous for the participants with underlying health problems who work in the group.

The safety act (wearing a face mask) had no significant correlation with potential factors that influence face mask-wearing among urban green space workers. This study showed that only about half of workers wear a face mask entirely during working time,

although all of them were aware of wearing a face mask is a protocol against COVID-19. Former studies also revealed that a few percent of farmworkers use PPE all of the time, although they were almost always aware of the risks they take [7, 21]. Safety behavior, especially wearing a face mask, is complex and influenced by various factors [21]. There was a deep gap between the percentage of safety awareness and the safety act which may be addressed. Social and psychological studies may be required to discover its roots and causes of it. Additionally, getting COVID-19 had no significant correlation with these factors. Perhaps, some other factors can significantly influence getting COVID-19 rather than those only related to working time interval.

#### 4.1. Limitations

Fourteen (75 minus 61) workers were not included in the study because they contracted COVID-19 when collecting data. Filling the questionnaire through the face-to-face interview was not possible due to COVID-19's preventive protocols. Perhaps their feedback inclined the results of this study toward a more conservative status with a more risk-aversion,

especially in the case of the safety attitude (believing that COVID-19 is dangerous/or not) and the potential factors that influence the wearing a face mask.

#### 4.2. Recommendations

- Low levels of self-esteem among workers with lower stature may be addressed by psychological remedies.
- Media could be an opportunity to direct the safety attitude and promote the belief in the danger of COVID-19.
- Smokers as a vulnerable population in a pandemic such as COVID-19 should be considered by decision-makers.
- Elevation of necessary education about the pandemics such as COVID-19 could be suggested.
- Remedial measures are required to elevate the importance of having underlying health problems for the workers that work in the group.
- Other factors rather than those considered in this study should be investigated to discover more contributing factors that influence the safety act.

### 5. Conclusion

Safety attitude may be a key variable in relation to the factors that influence the wearing a face mask. Smokers, workers that work in the group, workers with lower stature, and workers with lower educational levels were the most vulnerable during the COVID-19 outbreak. The causes of face mask-wearing during a pandemic such as COVID-19 as well as safety attitudes may be behind the factors studied in this study. Although some significant linkages were found, they were not enough to conclude a comprehensive action program. This concern is still open to discovering and determining factors that influence wearing a face mask and to persuading workers to improve their safety behavior.

#### Ethical approval

Privacy was considered about the personal information of the participants. The study was approved by the HSE committee of the Agricultural Sciences and Natural Resources University of Khuzestan. The study was conducted in accordance with the ethical standards of the Declaration of Helsinki.

#### Informed consent

Informed consent was obtained from the participants in the study.

#### Conflict of interest

There is no conflict of interest to declare.

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