

ORIGINAL RESEARCH PAPER

## Assessing Predictive Factors of Awareness in Personal Protective Equipment Use (PPEs) among Workers Employed at Iran Aluminium Company (IRALCO): Application of Social Cognitive Theory

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### ABSTRACT

**Introduction:** Designing behavioral modification interventions for the use of personal protective equipment (PPE) warrants the audiences identification and analysis.. This study aimed to determine the predictive factors for using (PPE) based on Social Cognitive Theory (SCT) constructs among workers of Iran Aluminum Factory, 2018.

**Material and Methods:** In this descriptive analytical study with cross-sectional method, a researcher-made questionnaire including demographic information, knowledge questionnaire and designed items based on the SCT construct, was fulfilled by 188 workers employed in production line of Iran Aluminum Factory in Arak. The collected data was analyzed using descriptive statistics, Chi-square and logistic regression analysis on SPSS 24. The significance level was set at  $P < 0.05$ .

**Results:** Among the participants, 46.8% ( $n=88$ ) and 52.2% ( $n=100$ ) of workers had moderate and high level of knowledge, respectively. Demographic variables such as marital status, educational level, income, age, work experience and employment status ( $p < 0.05$ ), as well as all SCT constructs ( $p < 0.05$ ) had a significant relationship with knowledge. Logistic regression analysis revealed that the level of education and employment status with probability of 80.6% and self-control, environment and self-efficacy of perceived barriers constructs, with a 64% probability could explained workers in high-knowledge group.

**Conclusion:** The present study revealed that the variables such as level of education, employment status, self-control, environment and self-efficacy of perceived barriers could be effective in designing educational interventions to improve workers' knowledge on using personal protective equipment.

**Keywords:** Personal Protective Equipment (PPEs), Knowledge, Social Cognitive Theory, Aluminum Factory

### 1. INTRODUCTION

There are essential parameters i.e., lack of knowledge and also absence of adequate stimulus, negative attitude, incorrect beliefs about unsafe behaviors, lack of work competency, nonattendance

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of rules among managers in order to have more manufactures extracted by the analysis of injuries in the workplace considering human factors [1]. Social Cognitive Theory (SCT) to be used in health interventions was first developed by Bandura in 1963. Based on this theory, changing behavior is

Table1. Logistic regression of significant demographic variables among study participants

Variables	Category	B	S.E.	Wald	Sig.	Expected(B)
Level of Education	Under Diploma	-	-	10.55	0.014	-
	Diploma	1.428	0.621	5.28	0.021	4.16
	Associate degree	1.162	0.635	3.34	0.067	3.19
	Bachelor & upper	2.042	0.645	10.01	0.002	7.70
Employment status	Employment contract	1.262	-	10.89	0.004	-
	Contractual employment	-0.246	0.449	7.91	0.005	5.53
	Official hiring	0.572	0.657	0.14	0.706	0.78
Width of origin		-3.111	0.710	19.20	<0.001	0.045

Table 2. Logistic regression of significant Social Cognitive Theory constructs among the participants

Variables	B	S.E.	Wald	Sig.	Expected(B)
Self-control	1.94	0.618	9.89	0.002	6.97
Environment	0.865	0.393	4.84	0.028	2.37
Self-efficacy of perceived barriers	1.39	0.475	8.58	0.003	4.01
Width of origin	-1.83	0.355	26.62	<0.001	0.16

the result of mutual interaction of environmental, individual factors and behavior and these three-dimension complex can lead to behavior change [2-4]. Taking the abovementioned explanations into consideration, therefore, this study aimed to determine the predictive factors for using PPE based on Social Cognitive Theory (SCT) constructs among workers of Iran Aluminum Factory, 2018.

## 2. MATERIAL AND METHODS

In this cross-sectional study, a researcher-made questionnaire including demographic information (age, work history, level of education, history of workplace injury, marital status, income and employment status, etc.), 38 items related to knowledge about using PPE and a designed instrument based on the SCT constructs completed by 188 workers employed in production line of Iran Aluminum Factory in Arak, a city located at the center of Iran. CVI and CVR of developed questionnaire were confirmed as 0.83 and 0.84, respectively. The questionnaire reliability, also, was calculated 0.98. The collected data was analyzed using descriptive statistics, chi-square and logistic regression analysis on SPSS 24. The significance level was set at  $P < 0.05$ .

## 3. RESULTS AND DISCUSSION

The study results revealed that 46.8% ( $n=88$ ) and 52.2% ( $n=100$ ) of workers had moderate and high level of knowledge, respectively. Demographic variables such as marital status, educational level, income, age, work experience and employment status ( $p < 0.05$ ), as well as all SCT constructs ( $p < 0.05$ ) had a significant relationship with knowledge. Logistic regression analysis illustrated that the level of education and employment status with probability of 80.6% [Table 1] and self-control, environment and self-efficacy of perceived barriers constructs, with a 64% probability could explained workers in high-knowledge group [Table 2]. Based on the study results, self-control had direct and significant association with knowledge which was in accordance to Jalily et al. study [5]. Self-control, environment and self-efficacy were important predictors for knowledge which was also confirmed by Mudrak et al. [6]. Among the other theory constructs, outcome expectancy and outcome valued didn't have any significant relation with knowledge. Paying remarkable attention to psychological factors in the workplace is highly recommended by the current research as important part of quality of work life [7-8].

#### 4. CONCLUSIONS

It seems that Social Cognitive theory can be effective method for promoting the knowledge of workers related to utilizing PPEs in the workplace. Based on the results, designing an educational intervention to improve workers' knowledge about using PPE in the workplace can be crucial. It is a necessity to modify the supportive environmental workplace to have more productivity.

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