



## A STUDY ON THE EMPLOYEES' OSH AWARENESS AND ATTITUDE LEVEL\*

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#### **ABSTRACT**

A wide variety of emergencies adversely affect workplaces and employee health. Besides, large-scale disasters cause material damage in large proportions and most importantly threaten working life too. This study was carried out by conducting a survey in the workplaces which are situated in Gümüshane and Trabzon province in order to evaluate knowledge level and attitude of the employees about institutional applications related to Occupational Health and Safety (OSH) and "Regulation on Emergencies in Workplaces" that was

published in 2013 in Turkey. The study was planned as a quantitative research. A Total of 31 public and private enterprises, 20 from Gümüshane and 11 from Trabzon, participated in the study. A total of 563 questionnaires were validated and analyzed. 563 employees participated in the study. 325 of them were workers, 16 were chief-foremen, 129 were technical staff, 46 were administrative staff, and 30 were managers. As a result, while the knowledge level of the employees about legal issues was found sufficient, a deficiency of the attributed significance about the subject and also a deficiency about implementation was found. It is believed that providing training for the employees by related enterprises will have a positive impact on the employees' opinion about OSH.

#### **Introduction**

Major incidents that may negatively affect employee health include workplace accidents, occupational diseases and all kinds of emergencies and disasters that occur while working. Apart from these, sabotages and terrorist attacks are likely to occur in the workplace as a man-made disaster. When these incidents occur in the workplace, it is necessary to take some preventive measures in order to protect employees' health. In terms of emergencies, one of the preventive measures that are necessary to take for all workplaces is preparing an emergency action plan according to the hazard level of the workplace. Emergency Action Plans and

necessary measures are explained in detail in the law of Occupational Health and Safety (OSH) and in the regulations in Turkey. The law is of great importance in terms of bringing forward the adoption of preventive measures with a risk management approach that at first aims the prevention of incidents instead of crisis management approach dealing with just the material elements after the occurrence of any incident in the workplace (Korkmaz and Avsallı, 2012: 153). This approach of the law foresees the implementation of a risk management approach that prevents accidents and unexpected situations in the workplace. At the same time, this approach brings many innovations such as preparing emergency action plans to workplaces, warning signs and conducting health examination of the employees periodically.

Occupational Health and Safety (OSH) covers a set of studies that comprise of laws, regulations and application-oriented parts of these regulations in order to rescue employees without damage with the involvement of employers, employees and everyone in the workplace when an incident occurs (Özkılıç, 2005). Also, OSH offers a new scientific study field for the researchers.

In the workplace, emergencies may be due to exposure to adverse conditions, as well as accidents or disasters. As for the work accidents, according to Social Security Institution (SSI), they are events that cause physical and mental disorders to employees due to the work carried out for the employer. Also work accidents are the events that happen while the employees are in the workplace, when a worker assigned to an outside job by the employer and doesn't do his/her main job, when a woman go to feed her baby or while the employees are taken by a vehicle provided by the employer (isgum.gov.tr, 2016). Disasters are events that occur more extensively in

terms of influence and harm to people at workplaces. Disasters are the consequences of events that include disaster risk and these events cause economic, social and environmental problems for the society, disrupts or stops normal life order and the society becomes dependent on outside help to deal with (Kadıoğlu and Özdamar, 2008: 302). It should be emphasized that "disasters are the consequences of events" in this definition. For example, an earthquake is a natural phenomenon but if it affects a society then it becomes a "Disaster". If there is an earthquake in a place where no one lives this phenomenon can't be named as a disaster.

There are two approaches which can be used by the employees to deal with negative situations. One of them is waiting and trying to solve the problem when it happens, namely crisis management, the other is anticipating the adverse conditions that may arise in workplace and taking precautionary measures, namely risk management approach. The determination of potential adverse conditions, accidents or some events that can result from disasters and the consequences of these events and the measures to be taken against them, are evaluated within the scope of risk analysis. Risk is a probability of life, property, economic and environmental loses (www.afad.gov.tr/, 2015).

The purpose of this study is to assess the awareness and attitudes of employees, who works in the public and private enterprises, related to occupational health and safety law and regulations. Therefore, it aims to determine what is reflected in public and private enterprises from occupational safety and health studies carried out recently in Turkey and thus, to bring forward proposals about sector practices according to the state which has been emerged in the study.

## 1. Literature

There are large numbers of studies in the international literature on emergencies that may arise in the workplace, but in the national literature, this issue has only recently come to the forefront. As an example of these studies, a master thesis study was carried out in Gümüşhane by Said (2015) by selecting samples from industrial establishments where emergency risks might be high; he wanted to determine the employees' awareness level related to OSH and first aid. It was investigated by the study whether there is a relation between the demographic findings of industrial and mining employees and the sub-dimensions of security perceptions (Said, 2015).

Evan D. Duff (2007) studied the training practices and crisis management of people working in a private college. The study aimed to prepare an effective emergency preparedness training program based on a current crisis management plan for the subject college. He found out that only less than 40% of the participants saw the crisis management plan of the college and all of the participants needed more crisis management training. He also recommended collaboration with the local emergency response institutions, the preparation of an elaborate training program for the employees, implementation of a crisis communication plan and preparation of crisis stress counseling components. He determined that the persons working in the college can't be proactive and effective during a crisis (Duff, 2007).

In a study by Bonafade et al. (2016) on workers at companies in Italy, It was assessed whether the employers' perceptions of OSH management differed according to firm size. The study was conducted with a total of 1010 employees and the data was obtained by telephone

interview. As a result, it was found out that the employees of the small sized enterprises were less satisfied about OSH practices. Moreover, the employees of the small sized enterprises think of OSH practices as a legal obligation instead of an added value. More than 70% of the participants stated that the investment in the OSH was sustainable (Bonafade et al., 2016).

A study conducted by Ollé-Espluga et al. (2015) in Spain, wanted to determine what impact would have on OSH when the employees knew that there was a safety representative in their workplace, when they didn't know and in situations that there was no safety representative. Employees who knew there was a security representative said that they were better protected and it was not found out statistically significant difference between the employees who didn't have a safety representative and who weren't aware of it (Ollé-Espluga, et al, 2015).

Tozkoparan and Taşoğlu published a study in which they evaluated the employees' attitude related to OSH practices in 2011. They conducted a survey about OSH-related applications to 400 employees from 6 medium and large-scale enterprises in İzmir. The employees who participated in the study indicated that their responsibility was high and the employers' responsibility was low in terms of safety (Tozkoparan and Taşoğlu, 2011).

A cross-sectional study on accidents and safety climate was conducted by Ajslev and his colleagues (2017) with 15,000 employees selected from the general population in Denmark. The data from a total of 15,144 employees was assessed with logistic regression analysis and they found that there was statistically significant difference between safety problems and the probability of progressive occupational accident. Apart from this, they determined

that the risk of young employees' occupational accident was high (Ajslev et al, 2017).

Battaglia and colleagues (2015) conducted a study titled "Occupational Health and Safety Management in Municipal Waste Companies: A Note on the Italian Sector" with the aim to assess the level of OSH management in the waste companies in Italy. A questionnaire was conducted to employees of 60 firms with different sizes. It was found that the OSH management of the firms was sufficient (Battaglia et al., 2015).

## 2. Material and Method

This study was planned as a quantitative research. During the year 2016, survey data was collected from the employees of public and private enterprises in Gümüşhane and Trabzon provinces. A total of 31 public and private enterprises from Gümüşhane and 11 from Trabzon participated in the study. A total of 563 questionnaires were validated and analyzed. To collect data, the researchers developed the awareness and

attitude scale for employees about OSH-related applications. The scale was validated by factor analysis and reliability was tested by Cronbach's Alpha coefficient. The questionnaire form which included the scale consists of a text indicating the purpose of the study to the employees, questions for demographic information and then 20 questions with 5 point likert scale.

The data was analyzed in SPSS 23 packet program. In the factor analysis for validity, the expressions were collected under two factors and cumulatively described 40.538% of the variance. The value of KMO (Kaiser-Meyer-Olkin sampling proficiency test) value was found to be greater than 70% (87%) and it was understood that the validity level of the study was very good (İslamoğlu and Alnaçık, 2014: 403). The reliability level of the scale was measured by Cronbach's Alpha method, the value was found to be 0.76 and according to this, the developed scale was reliable (Can, 2014: 369).

The factor loadings of the items are given below (Table1).

Table 1. Distribution of the Factors of the Questions

The Items	The Factors.	
	Awareness	Attitude
Q1. There is an emergency action plan for work accidents and disasters that may occur at the workplace I work for.	0.705	
Q2. Regular training on occupational health and safety is carried out in our workplace.	0.782	
Q3. Drills are conducted against the accidents that may occur in our workplace.	0.708	
Q4. There are warning signs and signs about work safety in our workplace.	0.666	
Q5. Our medical examination and checks are periodically performed by our occupational physician.	0.667	
Q6. It is a legal obligation to make an emergency action plan at workplaces.	0.487	
Q7. It is a voluntary job for the employer to carry out the OSH trainings of the employees.	0.377	
Q8. It is a legal obligation to drill against accidents in the workplace.	0.406	

Q9. In my workplace, teams to intervene in case of work accidents and disasters have been established and it is known who is responsible.	0.664	
Q10. The general cleaning rules are strictly obeyed in my workplace.	0.493	
Q11. Our attention is pointed to risky and dangerous jobs.	0.686	
Q12. Work-clothes are provided at the workplace, the employees are strictly supervised to wear work clothes and comply with work safety rules.	0.683	
Q13. Our workplace has a specialist in occupational health and safety and is doing his/her job well.	0.650	
Q14. Risk analysis studies are carried out in order to determine risky jobs in our workplace.	0.738	
Q15. In fact, what are said to be related to occupational health and safety are not on paper.		0.499
Q16. For our conditions, OSH practices are not unnecessary and meaningless.		0.445
Q17. My co-workers give importance to OSH.		0.662
Q18. I do believe that OSH practices will work.		0.475
Q19. I wish these practices were really done and we worked safely.		0.622
Q20. The imposition of an emergency action plan and implementation of the requirements for workplaces is an important step for safety.		0.345

The frequency analysis of the distribution has been made according to the arithmetic mean of the expressions and is interpreted according to the following numerical value ranges;

1. 1.0-2.3: Low level
2. 2.4-3.7: Medium level
3. 3.8-5.0: High level

The analyses of data were done with the analysis of frequency and significance. The significance status of the independent variables on dependent variables was determined by independent T test and ANOVA and Tukey tests.

#### 4. Results

The Table 2 shows the sample and demographic findings of the research.

**Table 2.** Demographic Findings of the Participants

<u>Demographic finding</u>	<u>Number</u>	<u>Percentage (%)</u>	<u>Demographic finding</u>	<u>Number</u>	<u>Percentage(%)</u>
<b><u>Occupation</u></b>			<b><u>Education</u></b>		
1. Worker	325	57.7	1. Primary school	73	13
2. Chief-foremen	16	2.8	2. High school	143	25.4
3. Technical Staff	129	22.9	3. Vocational High School	99	17.6
4. Administrative Staff	46	8.2	4. Associate Degree	166	29.5
5. Manager	30	5.3	5. Graduate	24	4.3
6. Missing	17	3.0	6. Postgraduate	6	1.1
<b><u>Total</u></b>	563	100.0	7. Missing	563	100.0
			<b><u>Total</u></b>		
<b><u>Age</u></b>			<b><u>Working year in the workplace</u></b>		
1. < 25	90	16	1. 0-4 (Year)	276	49
2. 26-35	203	36.1			

3. 36-45	131	23.3	2. 5-9	109	19.4
4. >46	119	21.1	3. 10-14	53	9.4
5. Missing	20	3.5	4. 15-19	29	5.2
<b>Total</b>	563	100.0	5. 20+	82	14.5
			6. Missing	14	2.5
			<b>Total</b>	563	100.0
<b>Gender</b>			<b>Working year in the occupation</b>		
1. Male	419	74.4	1. 0-4 (Year)	190	33.74
2. Female	136	24.2	2. 5-9	107	19
3. Missing	8	1.4	3. 10-14	66	11.72
<b>Total</b>	563	100.0	4. 15-19	44	7.81
			5. 20+	128	22.73
			6. Missing	28	4.97
			<b>Total</b>	563	100.0
<b>Marital Status</b>			<b>Number of OSH training programs attended in the last 1 year</b>		
1. Single	200	35.5	1. 0	45	8
2. Married	351	62.3	2. 1	201	35.7
3. Missing	12	2.1	3. 2	144	25.6
<b>Total</b>	563	100.0	4. 3	69	12.3
			5. 4	33	5.9
<b>Province</b>			6. 5+	59	10.5
Gümüşhane	251	44.6	7. Missing	12	2.1
Trabzon	312	55.4	<b>Total</b>	563	100.0
<b>Total</b>	563	100.0			

Totally, 563 employees participated in the study. 74.4% of them were male, 24.2% were female. When employees were asked about the number of training programs they attended on OSH in the last 1 year, it

was found that 8% of the employees never attended, 35.7% attended only once, 25.6% attended twice, 12.3% attended 3 times, 5.9% attended 4 times, 10.5% attended 5 times and above (Table 2).

Table 3. Awareness and Attitudes of the Employees Towards Workplace OSH Practices

Items	X	SD
<b>Workplace Applications and Awareness Level of the Employees</b>	<b>3.55</b>	<b>1.169</b>
There is an emergency action plan for work accidents and disasters that may occur at the workplace I work for.	3.61	1.141
Regular training on occupational health and safety is carried out in our workplace.	3.69	1.145
Drills are conducted against the accidents that may occur in our workplace.	<b>3.28</b>	1.212
There are warning signs and signs about work safety in our workplace.	3.88	1.100
Our medical examination and checks are periodically performed by our occupational physician.	<b>3.26</b>	1.422
It is a legal obligation to make an emergency action plan at workplaces.	<b>4.11</b>	0.995
It is a voluntary job for the employer to carry out the OSH trainings of the employees.	3.16	1.352
It is a legal obligation to drill against accidents in the workplace.	<b>4.09</b>	1.002

In my workplace, teams to intervene in case of work accidents and disasters have been established and it is known who is responsible.	3.46	1.270
The general cleaning rules are strictly obeyed in my workplace.	3.52	1.197
Our attention is pointed to risky and dangerous jobs.	3.64	2.029
Work-clothes are provided at the workplace, employees are strictly iş güvenliği kurallarına uyması sıkı şekilde denetlenmektedir.	3.54	1.268
Our workplace has a specialist in occupational health and safety and is doing his/her job well.	3.38	1.327
Risk analysis studies are carried out in order to determine risky jobs in our workplace.	<b>3.19</b>	1.281
<b>Employees' Attitudes about the Workplace Applications</b>	<b>3.77</b>	<b>1.175</b>
In fact, In fact, what are said to be related to occupational health and safety are not on paper.	<b>3.38</b>	1.236
For our conditions, OSH practices are not unnecessary and meaningless.	<b>4.06</b>	1.131
My co-workers give importance to OSH.	<b>3.37</b>	1.207
I do believe that OSH practices will work.	3.84	1.269
I wish these practicies were really done and we worked safely.	3.65	1.336
The imposition of an emergency action plan and implementation of the requirements for workplaces is an important step for safety.	<b>4.32</b>	0.872
<b>General average</b>	<b>3.66</b>	<b>1.234</b>

The average of the first 14 questions, which measure the awareness level of the employees and corporate applications related to OSH, was calculated as 3.55. According to the criterion given in the material and method section, employees' awareness level and workplace applications related to OSH was determined at moderate level. In particular, it was noticed that the employees had a high level of awareness in the question of "making emergency action plan is a legal obligation (4.11)" and "drills against accidents that may occur is a legal obligation (4.09)". However, it was found that the employees had a moderate awareness level in the question of "Drills are conducted against the accidents that may occur in our workplace (3.28)" and "Our medical examination and checks are periodically performed by our occupational physician (3.26)" and "Risk analysis studies are carried out in order to determine risky jobs in our workplace (3.19)" (Table 3).

It was found that the attitudes of the employees towards appreciation of the regulations and institutional OSH practices as important and being implemented appropriately, were on the verge of high level with 3.77. The employees expressed their wishes at high level for the items "The imposition of an emergency action plan and implementation of the requirements for workplaces is an important step for safety (4.32)" and "For our conditions, OSH practices are not unnecessary and meaningless (4.06)". Also the respondents stated at high level (3.84) that "I do believe that the OSH practices will work. It was understood that the employees were moderately engaged in the opinion "In fact, what are said to be related to occupational health and safety are not on paper (3.38)" and "My co-workers give importance to OSH (3.37)" Table 3).

Table 4. The Items with Statistically Significant Difference between Demographic Characteristics and the Awareness and Attitudes of the Employees

Items	Province	Gender	Marital status	Occupational groups	Age	Education	Working year in the workplace	Working year in the occupation	OSH training in the last 1 year
<b>Workplace Applications and Awareness Level of the Employees</b>	0.000	0.000	0.000		0.000		0.001	0.000	0.000
There is an emergency action plan for work accidents and disasters that may occur at the workplace I work for.	0.000	0.001	0.000		0.008		0.009	0.009	0.000
Regular training on occupational health and safety is carried out in our workplace.	0.000	0.000	0.000	0.016	0.000	0.037	0.000	0.000	0.000
Drills are conducted against the accidents that may occur in our workplace.	0.000	0.000	0.000		0.026	0.042	0.011	0.017	0.000
There are warning signs and signs about work safety in our workplace.	0.000	0.002	0.021	0.047	0.038	0.016		0.010	0.000
Our medical examination and checks are periodically performed by our occupational physician.	0.000	0.000	0.004		0.000	0.000		0.017	0.000
It is a legal obligation to make an emergency action plan at workplaces.	0.000			0.042	0.038	0.023	0.001	0.000	0.006
It is a voluntary job for the employer to carry out the OSH trainings of the employees.				0.003		0.001			0.007
It is a legal obligation to drill against accidents in the workplace.	0.004					0.034	0.001	0.000	
In my workplace, teams to intervene in case of work accidents and disasters have been established and it is known who is responsible.	0.000	0.000	0.001		0.000	0.004	0.002	0.000	0.000
The general cleaning rules are strictly							0.001		0.014

obeyed in my workplace.									
Our attention is pointed to risky and dangerous jobs.							0.039		
Work-clothes are provided at the workplace, employees are strictly iş güvenliği kurallarına uyması sıkı şekilde denetlenmektedir.	0.000	0.032				0.026			0.000
Our workplace has a specialist in occupational health and safety and is doing him/her job well.	0.000	0.000			0.003		0.014	0.017	0.000
Risk analysis studies are carried out in order to determine risky jobs in our workplace.	0.026	0.000			0.008			0.012	0.000
<b>Employees' Attitudes about the Workplace Applications</b>	0.007								0.001
In fact, what are said to be related to occupational health and safety are not on paper.	0.004								0.000
For our conditions, OSH practices are not unnecessary and meaningless.	0.025								
My co-workers give importance to OSH.	0.019								
I do believe that the OSH practices will work.						0.002			
I wish these practices were really done and we worked safely.									
The imposition of an emergency action plan and implementation of the requirements for workplaces is an important step for safety.		0.023							

\* The values in the table shows statistically significant difference (P<0.05)

The significant difference status between the scale questions which constituted the characteristics of the dependent variables and the independent variables which constituted the demographic and the workplace characteristics of the employees was evaluated (Table 4). The variable with the most significant difference among the nine independent variables was the province in which the employees worked. It was determined that the employees working in Trabzon metropolis had more awareness and positive opinion about OSH practices than the employees working in Gümüşhane. Likewise, the employees trained on OSH had more positive opinion than those not trained.

It was found that among the independent variables, gender, education and working years in the occupation (11), working years in the workplace and age (10), marital status (7) and occupational groups (4) thought differently. When the items which showed statistically significant difference were examined, it was found that, the technical staff, the workers who trained at least once or more, the married workers, the employees who worked 10-14 years, the older workers, the employees who worked 10-14 and over years, the employees who graduated from high and vocational high schools and the males expressed more positive opinions about OSH regulations and their workplace practices.

## 5. Discussion

In this section, the results of the studies mentioned in the literature section and the results of this study were compared.

When it comes to awareness level of the employees which was determined in the study, it is seen that there is consensus in two items. These are “It is a legal obligation to make an emergency action plan at

workplaces (4.11) and “It is a legal obligation to drill against accidents in the workplace (4.09). when we look at the attitude level, it is seen a similar consensus in the items “For our conditions, OSH practices are not unnecessary and meaningless (4.06)” and “The imposition of an emergency action plan and implementation of the requirements for workplaces is an important step for safety (4.32)” (Table 3).

When it comes to the items with statistically significant difference (Table 4), one of them attracts the attention. In the item “Regular training on occupational health and safety is carried out in our workplace”, there is statistically significant difference with all demographic characteristic.

Said (2014) tried to determine the awareness level of the workers towards first aid and security measurement related to OSH in Gümüşhane. He stated in the study that the workers who were trained on OSH differed significantly compared to those who were not. A similar result was found in this study determining that the employees who were trained on OSH at least once in the last year expressed more positive opinions compared those who were not. With these results, it could be said that OSH trainings are important.

In the study done by Tozkoparan and Taşoğlu (2011), the employees stated that their responsibility was high but the employers’ responsibility was low in terms of safety. In this study, it was found that the employees’ attitude in terms of attached importance to the practices of OSH is at moderate level but their belief that OSH practices would work, is at high level. It is understood that while the employees have awareness at high level towards OSH practices, it is at moderate level when it comes to applying this practices.

Evan D. Duff (2007) determined in his study that the employees would not be able to be active and effective during a work-related accident or exception. He also found in the study that all the respondents were in need of more crisis management training and only less than 40% saw the crisis management plan of the college. He recommended the preparation of elaborate training program for the employees, the implementation of a communication plan, formation of crisis counseling components and collaboration of agencies related to emergency response with the college. As for our study, it was found that even though the employees have a high awareness level towards OSH plans, training and drilling, they had moderate awareness level towards implementation of these. It can be said that more drilling, planning for crisis and training were highlighted in the both studies.

Ollé-Espluga and his colleagues (2015) examined whether the employees knew they had a safety representative in their workplace in Spain. In this study it was found that the employees participated at moderate level (3.54) when asked “Our workplace has a specialist in occupational health and safety and is doing his/her job well”.

Ajslev and his colleagues (2017) determined that the 5.7% of the participants didn't go to work because of illnesses in that year. It was found that the number of safety climate problems is associated with increased probability of work-related accidents. They also found that the work-related accident probability of younger workers (18-24) is higher. It was determined in our study that the employees who worked in their occupation 10-14 years and over, who worked in their workplace 10-14 years and the older ones (46+) expressed more positive opinions. It was understood by examining both studies that

the younger and inexperienced workers had less awareness and less positive attitude towards OSH practices and importance in terms of age and experience. It can be said that both studies support each other in this respect.

Battaglia and colleagues (2015) conducted a study in which they evaluated the maturity level of OSH management in waste management activities and the factors that affect this level. The firms which participated in the study stated that OSH management level was sufficient. They determined that sufficient budget, worker and labor unions' pressure, having obtained the OHSAS 18001 (Occupational Health and Safety Assessment Series) certificate increased this maturity level. It can be interpreted that the moderate awareness level of planning, training and drilling which needed to be prepared and conducted by the enterprises points to the shortcomings in this subject. These circumstances have shown that there are things to be done about OSH by the enterprises in Turkey.

### **Conclusion and Recommendations**

According to the findings, it can be said that the awareness level of the employees regarding legal issues is generally sufficient. But the importance they give to the practice is not sufficient. At the same time, the enterprises should do more things at least in the subject of informing the employees about preparing emergency action plans, risk analysis, health examinations and drills related to OSH practices. Thus, it can be said that the opinions “regarding the things that must be done for OSH is on paper” will pass from moderate level to high.

When the legal regulations and practices for OSH including sanctions in Turkey are considered to be new on the

agenda, it can be said that there are a lot of things to do. The first of these is to increase the level of awareness and practice in employees by increasing OSH trainings at workplaces and raising employee participation. It is needed for the employers

to prevent the opinion expressed by the employees as “this OSH issue is on paper”. For achieving this, the employers should involve the employees in processes related to preparing emergency action plans, risk analysis, health examinations and drills.

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