

Ön Lisans, Lisans ve Lisansüstü Düzeyinde İş Sağlığı ve Güvenliği Programlarının Analizi (Türkiye 7 Bölge Örneği)

Dr. Öğr. Üyesi Nilgün Ulutaşdemir^{1*}

Öğr. Gör. Hasan Tuna²

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¹Avrasya Üniversitesi, Türkiye,

nulutasdemir@yahoo.com

ORCID ID: 0000-0002-2231-5236

²Gümüşhane Üniversitesi, Türkiye,

hasan_tuna06@hotmail.com

ORCID ID: 0000-0003-3194-7216

* Sorumlu yazar

ÖZ

Bu araştırmada, Türkiye'deki bazı üniversitelerde son yıllarda açılmaya başlanan İş Sağlığı ve Güvenliği (İSG) ön lisans, lisans, yüksek lisans ve doktora program sayıları analiz edilerek bu programların mevcut durumu incelenmiştir. Çalışma retrospektif tipte, tanımlayıcı bir kayıt taramasıdır. Araştırmanın evrenini ülkemizdeki 112 devlet, 73 özel olmak üzere toplam 185 üniversite; örneklemini ise İSG programı ve/veya bölümü bulunduran tüm yükseköğretim kurumları oluşturmaktadır. 01 Ocak 2017-01 Ocak 2018 tarihleri arasında ÖSYM yerleştirme kılavuzu, Bilgi Yönetim Sistemi ve Bologna Bilgi Sisteminden alınan verilerle; Türkiye'nin 7 bölgesinde yer alan kamu ve özel üniversitelerin ön lisans, lisans, yüksek lisans ve doktora programlarının sayıları, kayıtlı ve mezun öğrenci sayıları, öğretim elemanı sayıları doküman tarama modeli kullanılarak elektronik ortamda tespit edilmiş ve önceki çalışmalarla karşılaştırılarak sunulmuştur. Türkiye'de ön lisans düzeyinde 79, lisans düzeyinde 7 ve lisansüstü düzeyinde ise 62 üniversitede İSG programı bulunduğu tespit edilmiştir. Ön lisans programlarında öğretim elemanı başına düşen öğrenci sayısı 2013-2014 öğretim yılında 91 iken, bu oran 2016-2017 öğretim yılında 201'e yükselmiştir. Türkiye'de öğretim elemanı başına düşen öğrenci sayısı OECD ülkeleriyle karşılaştırıldığında önemli bir öğretim elemanı açığı olduğu görülmektedir. Bu yüzden öğretim elemanı ihtiyacının ivedi ve planlı bir şekilde karşılanması gerekmektedir.

Anahtar Kelimeler: İş sağlığı ve güvenliği, ön lisans, lisansüstü, tezli, tezsiz

Analysis of Occupational Health and Safety Programs in Associate, Undergraduate and Graduate Degree (The Sample of Turkey's Seven Regions)

Asst. Prof. Dr. Nilgün Ulutaşdemir^{1*}

Lecturer Hasan Tuna²

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¹Avrasya University, Turkey,

nulutasdemir@yahoo.com

ORCID ID: 0000-0002-2231-5236

²Gümüşhane University, Turkey,

hasan_tuna06@hotmail.com

ORCID ID: 0000-0003-3194-7216

* Corresponding Author

ABSTRACT

In this study surveying retrospective and descriptive record, the number and qualifications of occupational health and safety (OHS) degree of associate, undergraduate, graduate and doctoral programs in Turkey some universities opened in recent years were analyzed. Also, the current situation of these programs was investigated. The study universe consists of a total of 185 universities including 112 state and 73 private universities in Turkey. The sample is composed of all the higher education institutions providing OHS education and / or including such a department. From January 1st, 2017 to January 1st 2018, the information obtained from the Student Selection and Placement Center Placement Guide, the Information Management System and the Bologna Information System and the number of OHS associate degree, undergraduate, graduate and doctoral programs in our country's universities, students currently attending these departments and those who graduated and lecturers from the state and private universities located in 7 regions of Turkey have been detected electronically using a screening model and presented by comparing them with previous studies. It was revealed that there are 79 associate degree, 7 undergraduate and 62 graduate OHS programs in the universities in Turkey. While the number of students per academic person in associate degree programs was 91 in 2013-2014 academic year, this figure increased to 201 in 2016-2017 academic year. Compared with the number of students per academic person in the OECD countries, Turkey appears to be a significant lack of academic person. Consequently, it is important to ensure the need for academic person in an urgent and planned manner.

Keywords: Occupational health and safety, associate, graduate, thesis, non-thesis

INTRODUCTION

In recent years, the importance of occupational health and safety (OHS) has been increasingly recognized in Turkey. The OHS has had its roots in Dilaver Pasha's Regulation and since then a number of labor laws have been enacted. Law No. 6331, which is the first comprehensive legislation to protect the concept of OHS in Turkey, was put into force in 2012. In recent years, despite the advances in the field of OHS laws and regulations issued by Turkish government, our country has been ranked as the first one in terms of occupational accidents among European countries, and the third in the World.

In our country, around 74000 occupational accidents occur every year, resulting in, 1152 deaths and 1888 people being disabled for life. The annual cost of occupational accidents to our country is around 40 Billion Turkish liras (Ceylan, 2012).

The biggest problem found by the labor safety inspectors from the Ministry of Labor and Social Security in the workplace controls was the lack of education among the employers and the employees with a rate of as high as 82.9%. However, according to the study done by the World Labor Organization, 98% of the occupational accidents, which could be prevented by OHS trainings, result from human error people (Yıldırım, 2010). Given that the most important factor leading to occupational accidents is unsafe behaviors of the employees (Domino Theory: 88% of accidents are unsafe actions), OHS education has a very important role in avoiding these accidents.

In order to prevent occupational accidents and diseases in our country, it is very important to develop and build an awareness of OHS culture throughout the country. The role of education in the formation of OHS culture in our country and in raising awareness about preventive measures is invaluable. The introduction of OHS trainings into formal education curriculum beginning from primary and secondary education to higher levels and the provision of basic OHS training by a qualified occupational safety specialist can play an important role in creating OHS culture.

According to Law No. 6331, employers have to reckon the hazard classes of their workplaces and employ an occupational safety specialist with Class A in dangerous workplaces, Class B in dangerous workplaces and Class C certificates in less dangerous workplaces (Law on Occupational Health and Safety, 2012: item 8). As a result of the enactment of Law No. 6331 and performing more frequent audits, the demand for qualified OHS specialists is rapidly increasing. It is necessary to attach more importance to the OHS programs that educate the technicians and occupational safety specialists in order to create the OHS consciousness in the short term and reduce the occupational accidents in the professional working life as much as possible.

At present, OHS courses are offered in associate, undergraduate, graduate, and doctoral programs of the universities. There are two main objectives of higher education institutions in the field of OHS training, one of which is to educate and employ qualified people to meet the need for specialization in this field by opening associate degree, undergraduate and postgraduate OHS programs. The other is to train qualified academic person by opening graduate programs. The graduates of OHS associate degree programs are entitled as "OHS technicians". If OHS associate degree graduates succeed in the examination made by Student Selection and Placement Center (SSPC) after completing 220 hours of necessary training, they will have the right to become class C OHS specialists. However, if the undergraduate students succeed in the exam without completing this training, they will have the right to become class C OHS specialists. Those who completed OHS graduate and non-thesis graduate programs gain the right to apply directly to the class B Occupational Safety Proficiency Examination without receiving any training. Those who completed the OHS PhD program are directly classified as class safety specialists.

The purpose of this study is to investigate the number of students, academic person and graduates in the OHS programs (including degree of associate, undergraduate, and graduate) in the universities in Turkey between 2013-2017 as well as to examine regional differences.

METHOD

In this study surveying retrospective and descriptive record, the number and qualifications of OHS associate degree, undergraduate, graduate and doctoral programs in Turkey universities opened in recent years were analyzed and the current situation of these programs was investigated. The study universe consists of a total of 185 universities including 112 state and 73 private universities in Turkey. The sample is composed of all the higher education institutions providing OHS education and / or including such a department.

From January 1st, 2017 to January 1st 2018, the information obtained from the SSPC Placement Guide, the Information Management System and the Bologna Information System and the number of OHS associate degree, undergraduate, graduate and doctoral programs in our country's universities, students currently attending these departments and those who graduated and lecturers from the state and private universities located in 7 regions of Turkey have been detected electronically using a screening model and presented by comparing them with previous studies.

RESULT AND DISCUSSION

OHS education was provided in degree of associate, undergraduate, graduate and doctoral programs in the universities in Turkey. As the number of current student's graduates, academic person, students per academic person and the regional differences between the regions were not found in the literature, this study deals with this subject in a multidimensional manner. Ceylan (2012) revealed numerical information about the OHS programs in Vocational High Schools in his study. Kalkan and Deniz (2015) provided information on the web sites of the universities, revealing the current status of the OHS graduate programs. Sivrikaya (2016) revealed the current situation of OHS education in higher education institutions as obtained from the 2015 SSPC placement guide and the web sites of the universities.

It was found that there were 139 associate degree OHS programs in 79 universities of the 139 programs (normal, evening, open and distance education), 10 undergraduate programs in 7 universities (normal and evening), and 36 thesis master's degree, 57 non-thesis and 10 doctoral programs in 62 universities (see Table 1).

Table 1: The quantitative distribution of the data on OHS programs in Turkey across regions

REGIONS	Associate Degree	Undergraduate	Master's Degree Thesis	Master's Degree Non-Thesis	Doctoral
Marmara	55	3	17	25	5
Central Anatolia	17	0	6	9	1
Aegean	14	1	5	8	2
Black Sea	27	4	3	4	1
Mediterranean	12	0	3	5	1
Eastern Anatolia	11	2	1	3	0
Southeastern Anatolia	3	0	1	3	0
TOTAL	139	10	36	57	10

Given the seven regions of Turkey, it was seen that there are 55 associate degree OHS programs in the Marmara, 17 in the Central Anatolia, 14 in the Aegean, 27 in the Black Sea, 12 in the Mediterranean region, 11 in the Eastern Anatolia and 3 (normal, evening, open and distance education) in the Southeastern Anatolia regions respectively. While there were 3 undergraduate programs in the Marmara, 1 in the Aegean, 4 in the Black Sea and 2 in the Eastern Anatolia regions (normal and secondary education) at respectively, there was no OHS undergraduate program in the Mediterranean and Southeastern Anatolia regions. Considering the information about master's degree thesis and non-thesis programs, it was seen that there were 17 thesis and 25 non-thesis programs in Marmara, 6 thesis and 9

non-thesis in the Central Anatolia, 5 thesis and 8 non-thesis in the Aegean, 3 thesis and 4 non-thesis in the Black Sea, 3 thesis and 5 non-thesis in the Mediterranean, 1 thesis and 3 non-thesis in the Southeastern Anatolia and 1 thesis and 3 non-thesis programs in the Eastern Anatolia regions respectively. There were no doctoral programs in the Eastern Anatolia and Southeastern Anatolia regions (see Table 1), although there was only one OHS doctoral program in Marmara, 5 in Central Anatolia, 2 in Aegean, 1 in Mediterranean and 1 in Black sea regions.

The current situation of OHS associate degree education

The most common form of OHS education in our country is offered at associate degree level Vocational High Schools (VHS) and Vocational Schools of Health Services (VSHS). The graduates of these schools are entitled as "Occupational Health and Safety Technician". According to Article 3rd of the Law No. 6331, the graduates of Occupational Health and Safety Associate degree programs can become occupational safety specialists in the field (Law on Occupational Health and Safety, 2012: item 3). OHS associate degree graduates are allowed to work in public institutions and universities after having received 90 hours distance learning, 90 hours face-to-face and 40 hours of practical training, a total of 220 hours of training and start their careers as a class C OHS specialist when they are successful in the exam held by SSPC (Regulation on the Duties, 2012).

The first associate degree program to offer OHS training was opened in 1996 Ceylan (2012). Although there were two OHS programs in vocational high schools until 2005, there has been a dramatic increase in the number of these programs since then Arıkan and Sarı (2017) the number of OHS programs opened in the VHS and VSHS of state universities and private universities is increasing day by day. The change of associate degree OHS programs over years was presented in Table 2.

Table 2: The quantitative change of associate degree OHS programs over years

Year	Normal Program	Evening Program	Distance Program	Open Program
2012	25	10	1	0
2015	56	28	9	1
2018	90	40	8	1

While there was a total of 15 universities offering OHS training at associate degree level in 2011, this number increased to 25 in 2012. It has been determined that OHS training is offered in 36 different programs (normal, second, distance) in 25 universities in 2012 (Ceylan, 2012) while OHS training was provided in 52 universities in 94 different programs (normal, evening, distance and open) in 2015 (Sivrikaya, 2016). In 2018, 79 universities offer OHS training in 139 different programs (normal, evening, distance and open) (see Table 2). The list of programs that provide OHS training at associate degree level in universities was presented in Table 3.

Table 3: The associate degree OHS programs in 2017-2018 Academic Year*

University	Vocational High School	Type of Training
Ataşehir Adıgüzel University	Ataşehir Adıgüzel VHS	N
Beykent University	VHS	N, E
Beykoz University	Beykoz Logistics VHS	N
Bilecik Şeyh Edebalı University	Osmaneli VHS	N, E
Biruni University	VHS	N
Doğuş University	Doğuş VHS	N
Gedik University	Gedik VHS	N, E
Işık University	Health Services VHS	N, E

İstanbul Arel University	İstanbul Arel VHS	N, E
İstanbul Aydın University	Anadolu Bilim VHS	N, E, D
İstanbul Bilgi University	Health Services VHS	N, E
İstanbul Esenyurt University	Vocational High School	N
İstanbul Gelişim University	İstanbul Gelişim VHS	N, E
İstanbul Kavram University	İstanbul Kavram VHS	N, E
İstanbul Kemerburgaz University	VHS	N
İstanbul Medipol University	Health Services VHS	N
İstanbul Şehir University	VHS	N
İstanbul University	Distance learning	D
Kırıkkale University	Vize VHS	N, E
	Lüleburgaz VHS	N, E
Kocaeli University	Hereke Ömer İsmet Uzunyol VHS	N
	İzmit VHS	N, E
Maltepe University	VHS	N
Marmara University	Technical Sciences VHS	N, E, D
Nişantaşı University	Nişantaşı VHS	N, E
Namık Kemal University	Çerkezköy VHS	N
Okan University	VHS	N, D
Plato University	Plato VHS	N, E
Sağlık Hizmetleri University	Health Services VHS	N
Sakarya University	Adapazarı VHS	D
Uludağ University	Technical Sciences VHS	N, E, KKTC
International Cyprus University	Health Services VHS	N
Üsküdar University	Health Services VHS	N, E
Near East University	Health Services VHS	N
Aksaray University	Aksaray Social Sciences VHS	N
Başkent University	Health Services VHS	N
Cumhuriyet University	İmranlı VHS	N
	Sivas VHS	N
Çankırı Karatekin University	Yapraklı VHS	N, E
Erciyes University	Mustafa Çıkrıkçıoğlu VHS	N, E
Karamanoğlu Mehmetbey University	Technical Sciences VHS	N, E
Kırıkkale University	Hacılar Hüseyin Aytemiz VHS	N, E, D
Niğde Ömer Halisdemir University	Niğde Technical Sciences VHS	N, E
Selçuk University	Huğlu Vocational High School,	N
	Taşkent VHS	N
Balıkesir University	Dursunbey VHS	N
Celal Bayar University	Soma VHS	N, E, D
Dokuz Eylül University	Bergama VHS	N
Dumlupınar University	Gediz VHS	N, E
	Pazarlar VHS	N, E
İzmir Economy University	İzmir Economy VHS	N
Pamukkale University	Honaz VHS	N, E

	Tavas VHS	N, E
Çağ University	Çağ VHS	N
Çukurova University	Karaisalı VHS	N
Kahramanmaraş Sütçü İmam University	Afşin VHS	N
Kilis 7 Aralık University	Kilis 7 Aralık VHS	N
M Akif Ersoy University	Çavdır VHS	N, E
Mersin University	Mersin VHS	N
Süleyman Demirel University	Sütçüler Prof.Dr. Hasan Gürbüz VHS	N, E
	Technical Sciences VHS	N, E
Toros University	Toros VHS	N
Atatürk University	Erzurum VHS	N, E, O
Bingöl University	Bingöl Social Science VHS	N
Erzincan University	Tercan VHS	N
Fırat University	Technical Sciences VHS	N
İnönü University	Hekimhan Mehmet Emin Sungur VHS	N
Ağrı İbrahim Çeçen University	Ağrı İbrahim Çeçen VHS	N
Kafkas University	Sarıkamış VHS	N, E
Van Yüzüncü Yıl University	Van Security Sciences VHS	N
Gaziantep University	Naci Topçuoğlu VHS	N
	Oğuzeli VHS	N, E
Artvin Çoruh University	Borçka Acarlar VHS	N
Giresun University	Dereli VHS	N
	Espiye VHS	N, E
Amasya University	Merzifon VHS	N, E
Abant İzzet Baysal University	Seben İzzet Baysal VHS	N
Ondokuz Mayıs University	Havza VHS	N
Sinop University	Boyabat VHS	N, E
Kastamonu University	Tosya VHS	N
Karadeniz Technical University	Araklı VHS	N
Gaziosmanpaşa University	Artova VHS	N
Gümüşhane University	Gümüşhane VHS	N, E
	TOBB Technical Sciences VHS	N, E
Karabük University	Eskipazar Sciences VHS	N, E, D
	Yenice Sciences VHS	N
	Eflani VHS	N
Hitit University	Osmancık Ömer Derindere VHS	N
Avrasya University	Health Services VHS	N
Düzce University	Gümüşova VHS	N
Bayburt University	Bayburt VHS	N, E

N: Normal Training, **E:** Evening Training, **D:** Distance Learning, **O:** Open Learning **VHS:** Vocational High School
*(Student Selection and Placement Center 2017).

As shown in the Table 3, there were 139 associate degree OHS programs (providing normal, evening, open and distance learning) in 82 VHS and 9 VSHS of 79 universities in Turkey in the 2017-2018 academic year. The number of universities is different from the number of Vocational Schools because there were OHS programs in more than one VHS of some universities. For example, there were 7 programs in total in 4 Vocational Schools of Karabük University (TOBB Technical Sciences Vocational School, Eskipazar Vocational School, Yenice Vocational School and Eflani Livestock Raising and Breeding Management Vocational School). It was noteworthy that 37% of the universities are private and 10% of the associate degree programs are found in Health Services Vocational High Schools. The change in the number of OHS associate degree programs (normal, evening, distance and open learning) opened in the 2017-2018 academic year across the regions was presented in Table 4.

Table 4: The quantitative distribution of the data on OHS associate degree programs in Turkey across regions*

REGIONS	UNIVERSITY	ASSOCIATE DEGREE				
		N	E	D	O	
Marmara	32	34	33	17	5	0
Central Anatolia	9	11	11	5	1	0
Aegean	6	8	8	5	1	0
Black Sea	15	19	19	7	1	0
Mediterranean	8	9	9	3	0	0
Eastern Anatolia	8	8	8	2	0	1
Southeastern Anatolia	1	2	2	1	0	0
TOTAL	79	91	90	40	8	1

N: Normal Training, **E:** Evening Training, **D:** Distance Learning, **O:** Open Learning
 *(Student Selection and Placement Center 2017).

The changes in the number of academic people in the OHS associate degree programs between 2013-2017 were shown in Table 5.

Table 5: The quantitative distribution of academic person in the OHS associate degree programs between 2013-2017*

Academic year	Prof. Dr.	Assoc. Prof. Dr.	Assoc. Dr.	College Lecturer	Lecturer	Research Assistant	Total
2013 - 2014	1	1	21	121	0	0	144
2014 - 2015	5	1	23	176	1	0	206
2015 - 2016	4	3	34	194	2	2	239
2016 - 2017	4	3	34	218	5	2	266

*Based on the data from Higher Education Council Information Management System for 2013-2017 Academic Years (Higher Education Institution 2018).

It was seen that there was a total of 266 academic staff including 4 professors, 3 associate professors, 34 associate doctorates, 218 college lecturers, 5 lecturers and 2 research assistants working in the OHS associate degree programs in the universities in 2016-2017 academic year.

Table 6: The numbers of the newly enrolled, currently studying, graduate students in associate degree programs and academic person (2013-2017)*

Academic year	Newly enrolled	Currently studying	Graduate**	Academic person	Number of students per academic person
2013 - 2014	10751	13136	587	144	91
2014 - 2015	17738	29570	1281	206	144
2015 - 2016	16878	38302	6085	239	160
2016 - 2017	26715	53424	11074	266	201

* Based on the data from Higher Education Council Information Management System for 2013-2017 Academic Years (Higher Education Institution 2018).

**The number of graduates is obtained from previous academic year

When the data on the OHS associate degree students for the period between 2013-2017 given in Table 6 were examined, it was observed that there were significant increases in the number of newly enrolled, studying and graduating students in associate degree programs. While the current number of OHS associate degree students was 13136 in the 2013-2014 academic year, it reached UP TO 53424 in the 2016-2017 academic year. When the data from 2013-2014 academic year and the 2016-2017 academic year are compared, it was seen that the number of newly enrolled students increased by 1.5 times, currently studying students by 3.1 times, and graduate students by 17.9 times. The number of academic people increased from 144 to 266. Between 2013-2017, the total number of students increased by 3.1 times while the number of associate degree academic person increased by 0.85 times. Accordingly, the rate of increase in the total number of students is approximately 3.7 times higher than that of the academic person. While the number of graduates from associate degree programs was 587 in the 2012-2013 academic year, this figure was 11074 in the 2015-2016 academic year.

The current situation of OHS undergraduate degree education

The graduates of OHS associate degree programs can become C class specialists by participating in occupational safety specialization training while the students from undergraduate programs can do this after having succeeded in the examination. It has been determined that there are 7 faculties and 3 colleges providing OHS training in the universities. The data on the programs that provide OHS training at the undergraduate level were shown in Table 7.

Table 7: The current OHS undergraduate programs in Turkey in 2017-2018 academic year*

UNIVERSITY	FACULTY/COLLEGE	TYPE
Bingöl University	Faculty of Health Sciences	N, E
Gümüşhane University	Faculty of Health Sciences	N, E
Üsküdar University	Faculty of Health Sciences	N
Yeni Yüzyıl University	Faculty of Health Sciences	N
Çanakkale Onsekiz Mart University	Çan Practical Sciences College	N
Sinop University	Health College	N
Uşak University	Health College	N, E

N: Normal Training, **E:** Evening Training

*(Student Selection and Placement Center 2017).

The numbers of the academic person in OHS undergraduate programs between 2013-2017 were shown in Table 8. It was seen that there was a total of 46 academic staff including 2 professors, 3 associate professors, 32 associate doctorates and 9 research assistants in the 2016-2017 academic year in the OHS programs in the universities.

Table 8: The distribution of the number of academic people in associate degree OHS programs between 2013-2017 academic years*

Academic year	Prof. Dr.	Assoc. Prof. Dr.	Assoc. Dr.	Research assistant	Lecturer
2013 – 2014	5	1	19	8	33
2014 – 2015	5	3	23	15	46
2015 – 2016	1	3	30	9	43
2016 – 2017	2	3	32	9	46

* Based on the data from Higher Education Council Information Management System for 2013-2017 Academic Years (Higher Education Institution 2018).

The numbers of the newly enrolled, currently studying students, academic person and students per academic person in OHS programs between 2013-2017 were shown in Table 9.

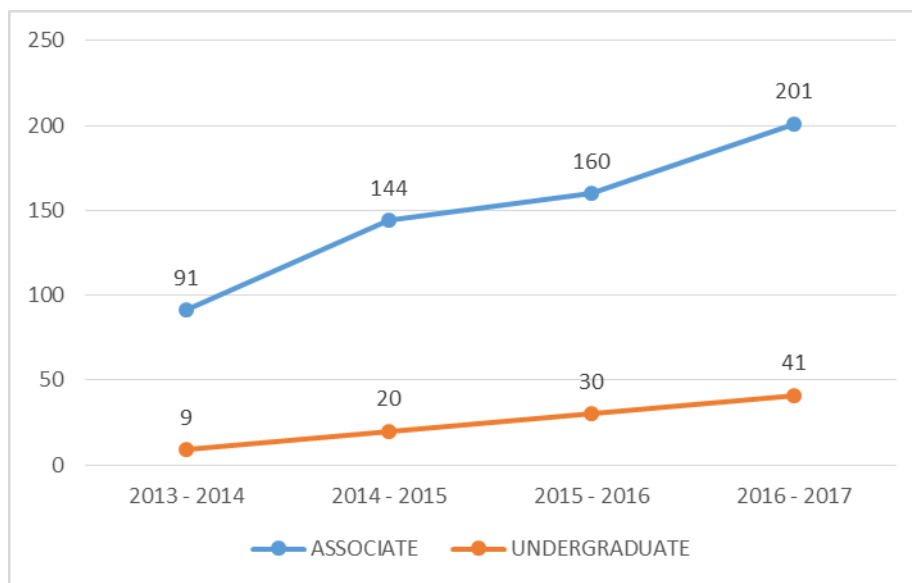
Table 9: The numbers of the newly enrolled, currently studying students, academic person and students per academic person in OHS programs between 2013-2017*

Academic year	Newly enrolled	Currently studying	Academic person	Number of students per academic person
2013 - 2014	293	298	33	9
2014 - 2015	511	925	46	20
2015 - 2016	492	1269	43	30
2016 - 2017	585	1873	46	41

* Based on the data from Higher Education Council Information Management System for 2013-2017 Academic Years (Higher Education Institution 2018).

While the number of OHS undergraduate students was 298 in the 2013-2014 academic year, it increased to 1873 in the 2016-2017 academic year. The number of academic people increased from 33 to 46. The total number of undergraduate students increased 5.3 times while the number of OHS undergraduate academic person increased 0.4 times between 2013-2017.

Figure 1 The number of students per academic person (2013-2017)



While the number of students per academic person in the associate degree OHS programs was 91 in the 2013-2014 academic year, it increased to 201 in the 2016-2017 academic year. While the number of students per academic person in the OHS undergraduate programs in the 2013-2014 academic year was 9, it increased to 41 in the 2016-2017 academic year. It is seen that the number of students per academic person tends to increase dramatically over time. The number of students per academic person in Turkey is above the average of OECD countries (15.6) (Organization for Economic Cooperation and Development 2013). It is also notable that there is a lack of qualified academic person for OHS programs in Turkey.

The current situation of graduate degree education

The graduate education is considered as a process involving education, scientific research, and practical activities adjacent to the undergraduate education (Sevinç, 2001). In this context, the obligations that are supposed to be fulfilled by the graduate education include training of qualified human power, doing research and educating scientists, lecturers and specialists for the workplaces (Sezgin, 2002). In order to attain at the target level of development as in each country, Turkey is obliged to train qualified human resources in all areas. A qualified individual can only be trained through a quality educational and research environment to be created in higher education institutions (Tosun, 2012).

While there were 9 programs that provide training at the graduate level in the field of OHS in 2012, this number increased to 63 in 2015. Kalkan and Deniz (2015) revealed that there were 63 OHS graduate programs, 20 of which were thesis and 43 were non-thesis. In 2018, OHS education was provided in 93 OHS graduate programs in total, with 36 thesis and 57 non-thesis programs. A list of programs that provide OHS graduate education at universities is given in Table 10.

Table 10: The OHS graduate programs available in 2017-2018 academic year in Turkey

UNIVERSITY	INSTITUTE	THESIS NON-THESIS
Acıbadem University	Institute of Health Sciences	T/ N-T
Biruni University	Institute of Health Sciences	N-T
Bursa Technical University	Institute of Science	N-T
Çanakkale Onsekiz Mart University	Institute of Science /Occupational safety	T
Gedik University	Institute of Social Sciences	T / N-T
Işık University	Institute of Science	N-T
İstanbul Aydın University	Institute of Science	T/ N-T
İstanbul Esenyurt University	Institute of Science	T/ N-T
İstanbul Gelişim University	Institute of Science	N-T
İstanbul Kültür University	Institute of Social Sciences	N-T
İstanbul Medeniyet University	Institute of Science	T/ N-T
İstanbul Rumeli University	Institute of Science	T/ N-T
İstanbul Sabahattin Zaim University	Institute of Science	T/ N-T
İstanbul Technical University	Institute of Science	N-T
İstanbul Ticaret University	Institute of Science	T/ N-T
İstanbul University	Institute of Health Sciences	N-T
Kırklareli University	Institute of Science	T/ N-T
Kocaeli University	Institute of Science	T/ N-T
Marmara University	Institute of Science	T/ N-T /N-T
Okan University	Institute of Science	T/ N-T
Sakarya University	Institute of Health Sciences	N-T

Üsküdar University	Institute of Health Sciences	T/ N-T
Near East University	Institute of Health Sciences	T/ N-T
Yeditepe University	Institute of Health Sciences	T
Yeni Yüzyıl University	Institute of Health Sciences	T/ N-T
Yıldız Technical University	Institute of Science /Occupational safety	N-T
Aksaray University	Institute of Science	N-T
Başkent University	Institute of Science	T/ N-T
Cumhuriyet University	Institute of Science	T/ N-T / N-T
Çankaya University	Institute of Science	T/ N-T
Hacettepe University	Institute of Public Health/Occupational Health	T
METU	Institute of Science	T/ N-T
Osmangazi University	Institute of Science	N-T
Selçuk University	Institute of Science	N-T
Yıldırım Beyazıt University	Institute of Health Sciences	N-T
Adnan Menderes University	Institute of Science	N-T
Afyon Kocatepe University	Institute of Science	N-T
Balıkesir University	Institute of Science	N-T
Dokuz Eylül University	Institute of Science	T/ N-T
Dumlupınar University	Institute of Science	N-T
Ege University	Institute of Science /Occupational safety	T/ N-T
	Institute of Health Sciences	T
İzmir Economy University	Institute of Science	T/ N-T
Muğla Sıtkı Koçman University	Institute of Science	N-T
Uşak University	Institute of Science	T
Adana Bilim and Teknoloji University	Institute of Science	N-T
Akdeniz Karpaz University	Institute of Science	T
Akdeniz University	Institute of Science	N-T
Antalya Bilim University	Institute of Science	N-T
Süleyman Demirel University	Institute of Science	N-T
Çukurova University	Institute of Science /Occupational safety	T/ N-T
Mersin University	Institute of Science	T
Atatürk University	Institute of Health Sciences	N-T
Bingöl University	Institute of Science	T/ N-T
Fırat University	Institute of Social Sciences	N-T
Dicle University	Institute of Health Sciences	N-T
Gaziantep University	Institute of Social Sciences	N-T
Hasan Kalyoncu University	Institute of Science	T/ N-T
Avrasya University	Institute of Health Sciences	T/ N-T
Bülent Ecevit University	Institute of Social Sciences	N-T
Karadeniz Technical University	Institute of Science	N-T
Kastamonu University	Institute of Science	T/ N-T
Gümüşhane University	Institute of Science	T

D: Distance Learning, T: Thesis, N-T: Non-Thesis

It was seen that there was a total of 93 OHS graduate programs including 36 thesis and 57 non-thesis programs in 62 universities in the 2017-2018 academic year. It was also revealed that there were thesis and / or non-thesis OHS graduate programs in 26 universities in the Marmara, 9 in the Central Anatolia, 9 in the Aegean Region, 5 in the Black Sea Region, 7 in the Mediterranean Region, 3 in the Eastern Anatolia Region and 3 in the Southeastern Anatolia regions respectively. 38 of the universities (61.3%) were state and 24 (38.7%) were private universities. The graduate programs were provided under the names of "Occupational Health", "Occupational Safety" or "Occupational Health and Safety" in the forms of thesis, non-thesis, normal, evening, distance learning by Institutes of Science (68%), Institutes of Social Sciences (10%), Institutes of Health Sciences (21%) and Institutes of Public Health (1%). Of the 63 graduate programs offered in 62 of the universities, 58 (92.1%) were named as "Occupational Health and Safety", 4 (6.3%) as "Occupational Safety" and 1 as "Occupational Health" (1.6%).

The list of programs that provide OHS training at the doctoral level at universities is given in Table 11.

Table 11: The OHS post-graduate programs available in 2017-2018 academic year in Turkey

UNIVERSITY	INSTITUTE	Type of training
İstanbul Aydın University	Institute of Science / Occupational Health and Safety	Doctorate
İstanbul Ticaret University	Institute of Science / Occupational Health and Safety	Doctorate
Gedik University	Institute of Science / Occupational Health and Safety	Doctorate
Marmara University	Institute of Science / Occupational Safety	Doctorate
İstanbul Rumeli University	Institute of Red Sciences / Occupational Health and Safety	Doctorate
Avrasya University	Institute of Health Sciences / Occupational Health and Safety	Doctorate
Hacettepe University	Institute of Health Science / Occupational Health	Doctorate
Çukurova University	Institute of Science / Occupational Safety	Doctorate
Dokuz Eylül University	Institute of Science / Occupational Health and Safety	Doctorate
	Institute of Health Sciences / Occupational Health	

There were currently 10 doctoral programs in OHS at 9 universities. Five of these universities were private and others are state universities. The doctoral programs were named as "Occupational Health and Safety" at six universities (5 private and 1 state university) "Occupational Safety" at two state universities and "Occupational Health" at two state universities.

Table 12: The numbers of the newly enrolled, currently studying and graduate students in OHS graduate programs between 2013-2017*

Academic year	Newly enrolled		Currently studying		Graduate students**
	Graduate	Post graduate	Graduate	Post graduate	Graduate
2013 - 2014	1268	3	1635	3	51
2014 - 2015	2772	16	3541	24	1374
2015 - 2016	3754	28	5242	53	1833
2016 - 2017	5663	38	8773	89	2556

*Based on the data from Higher Education Council Information Management System for 2013-2017 Academic Years (Higher Education Institution 2018).

**The number of graduates is obtained from previous academic years (the number of graduates is obtained from the data of the 2012-2013 academic year.)

When the data of OHS graduate students between 2013-2017 were examined, it was observed that there were significant increases in the number of newly enrolled, currently studying and graduate students in these programs. While the number of graduate students who were currently studying was 1635 in the 2013-2014 academic year, it has reached 8773 in the 2016-2017 academic year. When the data from the 2013-2014 and the 2016-2017 academic years were compared, it has seen that the number of new enrolled students increased by 3.5 times, the currently studying students by 4.4 times and graduate students by 49.1 times. While the number of graduates from graduate programs in the 2012-2013 academic year was 51, this number increased to 2556 in the 2015-2016 academic year. When the data of OHS doctoral students between 2013-2017 were examined, it has seen that the number of newly enrolled and currently studying students in these programs has dramatically increased while there were no graduate students in this period. While the number of current OHS doctorate students was 3 in the 2013-2014 academic year, it reached to 89 in the 2016-2017 academic year.

CONCLUSION AND RECOMMENDATIONS

In the process of integrating occupational health and safety into the educational system in Turkey, the curriculum of technical and vocational high schools had changed at first. After that, the number of vocational high school programs at universities increased and academic studies started to be carried out. Today, the number of graduate programs has increased, and undergraduate programs have started to be opened.

It has been determined that OHS training is provided in 91 associate degree programs in total, including 139 programs in 79 universities in our country. While the number of OHS associate degree programs opened in 2012 was 36, this figure was 93 in 2015 and reached to 139 in 2018.

It has also been determined that OHS training is offered in 10 departments of 4 faculties and 3 high schools in our country. While there were only 3 universities offering OHS training in 2015, there are 7 universities offering it today.

62 universities in our country were found to have OHS programs in a total of 99 departments including 36 thesis, 57 non-thesis and 6 doctorate programs. Whereas the number of graduate programs opened in 2015 was 20, this number is 36 in 2018. The number of non-thesis graduate programs have also increased from 43 to 57 in this period.

It is seen that the universities have opened OHS graduate programs only to meet market needs, without having a competent and sufficient number of academic people and other necessary academic qualifications. As the demand for graduate education has increased day by day, 62 graduate-level programs have been opened in the universities. However, the inadequacy of the number of academic people who will teach in the programs decreases the quality of the education. For this reason, it is necessary for the universities, which have experienced and sufficient number of academic people, to open the OHS thesis graduate and doctorate programs and meet the lack of qualified academic person in an urgent and planned manner.

Despite the rapid increase in the number of students and programs, the increase in the number of academic people has lagged behind this. Despite a positive development in terms of understanding the importance of increasing the number of OHS training programs in universities in our country, the increase in the number of students per academic person in OHS programs affects the quality of education negatively. Considering that the number of students per academic person in the OECD countries is 16, there is a significant lack of qualified academic person in OHS in Turkey. Based on the data obtained, it is suggested that the need for qualified academic person should be met urgently and in a planned manner by opening OHS thesis graduate and doctoral programs in the universities which have experience and sufficient number of academic people.

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