

THE PREVALENCE OF DISABILITY AMONG HEALTH CARE WORKERS AND ASSOCIATED PROBLEMS: A SAMPLE FROM TURKEY

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ABSTRACT

Objective: It is predicted that worldwide, there are over one billion people who live with one sort of disability or another. This study aims to assess the prevalence of disability among health care workers and associated problems.






Material and Method: This is a cross-sectional study. The population of study was comprised of 908 health care workers in a training and research hospital. A list was obtained from the human resources department of the hospital management and 323 people (a response rate 35.5%) agreed to participate in a survey to determine disability. A brief set of questions prepared by the Washington Disability Statistics Group was implemented. The set results defined 63 people as being disabled (19.5%).

Results: The findings indicated that among the disabled health care workers, 44.5% were older (above the age of 40), 65.1% were females, 60.3% had a educational status of university or less, 38.1% were doctors, and 52.4% worked in the clinical sciences. 13% of the health care workers had cognitive impairment. 15.9% suffered from cardiac or circulatory ailments, 85.7% had complained of fatigue, and 73% had muscular-joint pains. In addition,

77.8% of the health care workers indicated that they had difficulties in commutes to and from the hospital in terms of the routes and the means of transport available. Among the disabled health care workers, 65.1% claimed they found the breaks to be insufficient, 58.7% said they were victims of mobbing, 57.1% stated they desired to work part-time, and 55.6% indicated they worked in positions which did not necessitate any skill sets.

Conclusion: In conclusion, it appears disabled health care professionals face a number of problems. A common set of definitions and a disability detection form should be established and prepared in order to enable the possibility of comparing results on an international basis. In addition, certain efforts should be implemented which make the conditions more suitable for disabled health professionals, such as the application of more flexible or part-time hours, an increase in the number of breaks, a cessation of mobbing, engaging in tasks of menial labor should be prevented and transport should be improved. Further studies are needed for international and cross-sectoral comparisons.

Keywords: Disabled, health care workers, working life, health problems, accessibility, social problems.

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ENGELLİ SAĞLIK ÇALIŞANLARININ PREVALANSI VE İLİŞKİLİ SORUNLAR: TÜRKİYE'DEN BİR ÖRNEK

ÖZET

Amaç: Dünyada bir milyardan fazla insanın bir tür engellilik ile yaşadığı tahmin edilmektedir. Bu çalışmada engelli sağlık çalışanlarının prevalansı ve ilişkili sorunların değerlendirilmesi amaçlanmıştır.

Materyal ve Metot: Kesitsel tipte bir araştırmadır. Araştırmanın evrenini bir eğitim ve araştırma hastanesinde çalışan 908 sağlık çalışanı oluşturdu. Hastane yönetimi personel işlerinden bir liste alındı ve 323 kişi (ulaşılabilirlik oranı: %35,5) engelliliği belirlemek için yapılan bir ankete katılmayı kabul etti. Washington Engelli İstatistikleri Grubu'nun hazırlanmış olduğu kısa soru seti uygulandı. Setin sonuçlarına göre 63 kişi engelli olarak tanımlandı (%19,5).

Bulgular: Engelli sağlık çalışanlarının %44,5'i yaşlı, %65,1'i kadın, %60,3'ünün eğitim düzeyi lisans ve altı düzeyde, %38,1'i doktor ve %52,4'ü klinik bilimlerde çalışmaktadır. Sağlık çalışanlarının %13,0'ı bilişsel engelli alanında engeli olduğu bulunmuştur. Engelli sağlık çalışanlarının %15,9'unun kalp ve

dolaşım sistemiyle ilgili hastalıkları, %85,7'sinin yorgunluk ve %73,0'inin kas-eklem ağrısı şikayetleri olduğu görülmüştür. Ayrıca engelli sağlık çalışanlarının %77,8'si hastaneye ulaşım yollarının ve ulaşım araçlarının engelliler için uygun olmadığını, %65,1'i molaların yetersiz olduğunu, %58,7'si mobbinge maruz kaldığını, %57,1'i yarı zamanlı çalışmak istediğini, %55,6'sı vasıf gerektirmeyen işlerde çalıştırıldığını bildirmişlerdir.

Sonuç: Sonuç olarak engelli sağlık çalışanları birçok sorunlarla karşılaşmaktadır. Uluslararası alanda, verilerin kıyaslanabileceği ortak engellilik tanımları geliştirilmesi ve engellilik tespit formları oluşturulması gerekmektedir. Buna ek olarak, engelli çalışanlar için, yarı zamanlı veya esnek çalışma saatlerinin uygulanması, çalışma saatleri içindeki molaların artırılması, çalışma ortamındaki mobbingin ve vasıf gerektirmeyen işlerde çalıştırılmanın engellenmesi, hastaneye ulaşımın ve hastanedeki çalışma ortamının engellilere uygun hale getirilmesi için çalışmaların yapılması gerekmektedir. Uluslararası ve sektörler arası karşılaştırmalar için daha fazla çalışmaya ihtiyaç vardır.

Anahtar kelimeler: Engelli, sağlık çalışanı, çalışma yaşamı, sağlık sorunları, erişilebilirlik, sosyal sorunlar.

INTRODUCTION

Disability is a part of human condition. Almost everyone will experience a temporary or permanent disability at some point in his or her life. It is predicted that over one billion people, approximately 15% of the world's population, suffer from a disability of some sort. This incidence is higher than the 10% predicted by the WHO (World Health Organization) in the 1970's.¹ Disability in the workplace can lead to individual financial or health loss, to long-standing or repetitive sick-leaves, or merely to reduced work performance.² In the "Rules and Regulations for the Management of Disability in the Workplace" guidelines prepared by the ILO (International Labor Organization), individual with a disability is defined as: "A person who has the right for acceptance of physical, emotional, intellectual or cognitive impairment in an appropriate workplace but still experiences a serious decline concerning maintaining his job, continuing work, and seeking protection".³

According to the Population and Housing Data gathered by TÜİK (Turkey Statistical Information Services), the rate of the population with disability in the workplace

is 22.1%.⁴ According to the Governmental Planning Organization's data from 2018, the number of government clerks is 2 051 578 people, the disabled quota is 61 728, and the number of working disabled clerks is 51 814.⁵ When the data is evaluated, it appears %83.6 of the quota in public and government offices has been fulfilled.

In 2018, the employment-population ratio- the proportion of the population that is employed was 19.1 percent among those with a disability, the U.S. Bureau of Labor Statistics reported today. In contrast, the employment-population ratio for those without a disability was 65.9 percent. The employment-population ratio for persons with a disability increased from 2017 to 2018, and the ratio for persons without a disability edged up.⁶

People with disability comprise a significant group among the disadvantaged and in Turkey, there have not been sufficient studies analyzing their status and conditions. This study aims to assess the prevalence of disability among health care workers and associated problems.

Table 1. Distribution of sociodemographic characteristics of the disabled health care workers.		
Characteristics	n	%
Age group (years) (n:63)		
29 and under	12	19.0
30-39	23	36.5
40 and over	28	44.5
Gender (n:63)		
Female	41	65.1
Male	22	34.9
Marital status (n:63)		
Married	47	74.6
Not Married	16	25.4
Children situation (n:63)		
Yes	43	68.3
No	20	31.7
Number of children (n:43)		
One child	13	30.2
Two children or more	30	69.8
Education (University) (n:63)		
Graduate (No)	38	60.3
Graduate (Yes)	25	39.7
Occupational status (n:63)		
Physician	24	38.1
Nurse	21	33.3
Midwife	7	11.1
Technicians	7	11.1
Other health professions (physiotherapists, psychologists, and emergency medical technicians)	4	6.4
Unit of work (n:63)		
Clinic	33	52.4
Surgery	10	15.9
Basic medicine	9	14.3
Emergency	6	9.5
Other units (laboratories, x-rays, sterilization, phlebotomy centers)	5	7.9
Income status (Monthly) (n:63)		
Low	8	12.7
Medium	37	58.7
Good	18	28.6

MATERIAL AND METHOD

Participants and Procedure

This study was conducted in Muğla, a city of 938 751 residents located in southwestern Turkey. The city is a center for energy production and tourism.⁷ This is a cross-sectional study. The population of the study was comprised of 908 health care workers in a Muğla Sitki

Koçman University Training and Research Hospital. A sample was not chosen. A comprehensive list was obtained from the human resources department of the hospital management and 323 people (a response rate 35.5%) agreed to participate in a survey to determine disability. A brief set of questions prepared by the Washington Disability Statistics Group was implemented.⁸ The set results defined 63 people as being disabled (19.5%). The researchers uses a questionnaire to gather information from the respondents to answer the research questions. The brief set of questions and the survey were conducted face to face with the disabled health care professionals. The procedure took approximately 15-20 minutes and was completed in the duration between March 22nd and May 8th 2016.

Variables

The brief set of questions conducted to assess the condition of the disability (its presence, area and frequency) was comprised of the questions below:⁸

- 1) Even if you use glasses, do you have difficulty in seeing?
- 2) Even if you use a hearing aid, do you have difficulty in hearing?
- 3) Do you have difficulty in walking or climbing stairs?
- 4) Do you have difficulties in remembering or concentrating?
- 5) Do you have difficulties in maintaining personal health care such as bathing or dressing?
- 6) Do you have difficulties in communication when using your everyday language (for example understanding or being understood by others)?

Each question ascertains one disability. We aimed to gather detailed information in the difficulties experienced in 6 basic fields (sight, hearing, locomotive abilities (mobility), cognitive function, personal hygiene, and communication). There are four possible answers for each question: “No, I do not have any difficulty”, “Yes, I have slight difficulty”, “Yes, I have a lot of difficulty” or “I cannot do it at all”. Four specific disability groups were defined based on four different cut-off points. The first disabled people group is comprised of those who had some difficulty with at least one or more of these 6 basic fields (the largest and most comprehensive group of disabled people). The second disabled group was composed of those who expressed difficulty in at least one of the fields. The third disabled group consisted of people who could not engage in at least one of the activity. The fourth disabled group was comprised of those who expressed serious difficulty in one field along with slight difficulty in one or more fields.

In international literature in research in health care institutions, this brief set of questions has been used.⁹ In Turkey, the first application of the brief set of questions of the Washington Disability Statistics Group (except for question 6) was implemented in 2012 by TÜİK in the Turkish Health Research.¹⁰

The socio-demographic characteristics covered in the survey in our research provided data pertaining to age, gender, marital status, number of children, educational status, career, field of work, and economical status (in which if the income was higher than the expenses, this was evaluated as good, if the income and the expenses were the same: medium, and bad if the expenses were more than the income). The characteristics concerning general state and work-related illnesses were determined (cardiac and circulatory illnesses, obesity, hypertension, diabetes mellitus and chronic obstructive pulmonary disease, in addition to other chronic health ailments such as back and neck hernias, goiter, thyroid diseases, meniscopathy, thalassemia, and vertigo which affect work life). Other data was collected concerning the access and availability of disabled health care committee reports, feelings of fatigue, the increase of health problems due to work conditions, the presence of muscular and joint pain, the risk and frequency of suffering work-related accidents. Characteristics concerning the environment and conditions of the work place included experiencing bias at work, the fact that female workers were more prone to experience bias, the fact that their salaries were less than those who were not disabled, lack of job satisfaction, the fact that promotions were blocked, their desire to work in the private sector, insufficient break-times, the wish to work part-time, the fact that disabled rights are not protected adequately, experiencing mobbing (psychological violence), working in positions which do not require specific skill sets (menial labor), and insufficient disabled quotas. Characteristics pertaining to the accessibility for workers and social problems included different factors (the fact that structures like stairs or lifts and objects such as computers, desks, tables, chairs, were not disabled-friendly, the public transport vehicles used in commutes to and from the hospital were inadequate, the sidewalks and roads were unsuitable for the disabled, lack of a accessible toilets and wheelchairs or ramps at work. The belief that they experienced prejudice, that the people with disability were at a disadvantage when it came to being hired, and points like the discrimination the disabled faced from their superiors were also included.

Once the surveys were returned, data were computed, coded, and analyzed using the Statistical Package for the Social Sciences for Windows, Version 20.0 (SPSS Inc.). While evaluating the data, percentages, averages

Table 2. Prevalence of the group of disabled health care workers (n:323).

Determinants of Disability	n	%
The first disabled group (those who had some difficulty with at least one or more of these basic fields)	63	19.5
The second disabled group (those who expressed difficulty in at least one of the fields)	12	3.7
The third disabled group (those who could not engage in at least one of the activity)	2	0.6
The fourth disabled group (those who expressed serious difficulty in one field along with slight difficulty in one or more fields)	39	12.0

Table 3. Prevalence of the degrees of difficulty in the six basic fields of disabled health care workers (n:323).

Basic fields	Degrees of difficulty (%)		
	Those who had some difficulty and more	Those who expressed difficulty and more	Those who could not engage in the activity at all
Slight	5.5	0.3	0.3
Hearing	1.5	0.0	0.0
Mobility	8.6	0.9	0.0
Cognitive skills	13.0	2.1	0.0
Personal hygiene	0.3	0.3	0.3
Communication	2.4	0.3	0.0

and standard deviation were used in the definitive statistics. The research was conducted within an ethical framework. Written permission was taken before the study from the Mugla Sitki Kocman University Training and Research Hospital and Scientific Research and Publications Ethical Committee (2016.03.21-59). During a visit to the hospital, respondents were approached and invited to participate. Verbal permissions were taken from workers with disability before the survey was administered, and the aim of the study was explained to participants

RESULTS

When the sociodemographic characteristics of the health care workers with disability are taken into consideration it becomes apparent that 44.5% are 40 and above, 36.5% of them are between the ages of 30-39, while 19.0% are 29 and younger. 65.1% are females, 74.6% are married, 68.3% have children, of which 69.8% have two children or more and 30.2% have one child.

The educational backgrounds of 60.3% of workers with disability care show they have a university degree or below. 38.1% are doctors, 33.3% are nurse,

11.1% are midwives, 11.1% are technicians and 6.4% are in related health professions (physiotherapists, psychologists, and emergency medical technicians). Of the workers with disability, 52.4% work in the clinic, 15.9% in surgery, 14.3% in basic medicine, 9.5% in emergency, and 7.9% work in other service units (laboratories, x-rays, sterilization, phlebotomy centers). 58.7% are in the medium income bracket, while 28.6% have good incomes and 12.7% indicated low financial status (Table 1).

Based on the results of the brief set of questions, the prevalence of the first group of workers with disability was 19.5%, the second group was 3.7%, the third group was 0.6% and the fourth group was 12.0% (Table 2).

Based on the degree of difficulty in the six fields, when the distribution of the results is analyzed, it appears that

the ones who had slight difficulties and more, those experiencing major difficulties or more, and those who could not engage in the activity at all were calculated to be 5.5%, 0.3%, 0.3% for seeing, 1.5%, 0.0%, 0.0% for hearing, 8.6%, 0.9%, 0.0% for locomotive abilities (mobility), 13.0%, 2.1%, 0.0% for cognitive skills, 0.3%, 0.3%, 0.3% for personal hygiene, and 2.4%, 0.3%, 0.0% for communication, respectively (Table 3).

When the general health status of health care workers was analyzed, it was observed that 15.9% had diseases related to the circulatory system and heart. 90.0% of these workers claimed they experienced difficulties while doing their jobs. 12.7% suffered from obesity, 12.5% indicated that they experienced difficulties while doing their jobs. 11.1% suffered from hypertension, of which 57.0% indicated that this situation impeded their work. 1.6% had diabetes mellitus; all of these people stated that this condition caused difficulties at work. In addition, 47.6% claimed they had other chronic ailments such as back or neck hernias, goiter, thyroid problems, meniscopathy, thalassemia, vertigo etc) and 73.3% of these indicated that these ailments caused them to experience difficulties while doing their jobs. 6.3% of the workers with disability had reports from medical health committees (Table 4).

When the work-related health problems of disabled health care workers are considered, certain factors emerge. 85.7% complain about fatigue, 73.0% state that the hospital conditions exacerbate their problems, 73.0% have muscular or joint pains, 20.6% say they have difficulty in getting permission for medical check-ups and treatments, 27.0% stated they have had work-related accidents at least once in their lives, and of those, 70.6% claimed that they had 2 and under work related accidents (Table 4).

The working environment and conditions of the disabled health care workers yielded information concerning prevalent attitudes. 46.0% stated they had been discriminated against, 28.6% of the female workers with disability had experienced more discrimination. 17.5% stated their salaries were lower than non-disabled individuals. 38.1% were dissatisfied with their jobs, 34.9% felt their promotions were being blocked, 22.2% desired to work in the private sector, 57.1% wanted to work part-time, 55.6% believed the laws concerning work did not adequately protect the rights of the disabled. In addition, 58.7% stated they had experienced mobbing (psychological violence) at work, 55.6% claimed they worked at jobs which did not require a specific skill set (menial labor), and 39.7% stated the disabled quotas for hiring were insufficient (Table 5).

Table 4. Problems of general health and work-related health of disabled health care workers (n:63).

Problems	n	%
General health		
Diseases related to the circulatory system and heart		
Yes	10	15.9
Difficulties while doing their jobs (Yes)	9	90.0
Obesity		
Yes	8	12.7
Difficulties while doing their jobs (Yes)	1	12.5
Hypertension		
Yes	7	11.1
Difficulties while doing their jobs (Yes)	4	57.0
Diabetes mellitus		
Yes	1	1.6
Difficulties while doing their jobs (Yes)	1	100.0
Other chronic health problems (back or neck hernias, goiter, thyroid problems, meniscopathy, thalassemia, vertigo etc)		
Yes	30	47.6
Difficulties while doing their jobs (Yes)	22	73.3
Disability reports from medical health committees		
Yes	4	6.3
Work-related health		
Complain about fatigue	54	85.7
The hospital conditions exacerbate their problems	46	73.0
Muscular or joint pains	46	73.0
Difficulty in getting permission for medical check-ups and treatments	13	20.6
Work-related accidents at least once in their lives	17	27.0
Number of work-related accidents		
2 and under	12	70.6
3 and over	5	29.4

When considering accessibility and social problems experienced by disabled health care workers, it appears 63.5% express the idea that structures at the hospital like stairs and lifts are not appropriate for the disabled. 68.3% expressed dissatisfaction with the computers, desks, tables and chairs at the hospital, 77.8% expressed concern about the transport vehicles, sidewalks and roads, 28.6% indicated there were no disabled ramps, and 57.1% stated there were no disabled toilets at the units they worked. In addition, 14.3% claimed they experienced prejudice at the hospital, 68.3% said disabled people are at a disadvantage when they are being hired, and 12.7% complained about the discrimination the disabled workers experienced from their supervisors (Table 6).

DISCUSSION

A study in Slovenia indicated that 6.6% of health care workers were disabled.¹¹ This result is lower than the one we obtained in our study. The difference may be due to the variations in the methods determining what constitutes disability. In addition, in this research, Škerjanc *et al.* stated that they had not found any mention in the literature of the conditions and problems faced by workers with disability. Similarly, we did not encounter any research in the existing literature either, especially concerning the prevalence of disabled workers in the field of health care.

The results of our study indicate that the age group with the highest proportion of health care workers with disability is 40 years or over. According to TÜİK's data, the frequency of health care workers with disability increases as age increases.⁴ In fact, many studies support these findings.^{12,13} When assessing the questions used to determine and define disability, the inability to do one's job is also accepted as a disability. This may be one reason the prevalence of workers with disability increases along with age.

In our study, the number of female workers with disability was higher than males. According to the data provided by TÜİK, the employment percentage for male workers with disability is 32.0% while it is 11.6% for females.⁴ The 2018 statistics from the Turkish Republic's Department of Personnel indicate (The Disability Employment Service) that the employment of men in the public sector is three times that of women.¹⁴ Also, the data gathered by the Household Employment Research conducted in 2018, indicated that the rate of employment of people 15 and older was 65.6% for males, and 28.9% for females.¹⁵ These results are not similar to those in our study. However, according to the Turkish Institution of Public Health figures pertaining to the year 2016, the percentage of women in the health sector was 59% (57,629 workers).¹⁶ This situation may

be explained through the fact that women can find more job opportunities in the health sector.

The OECD (Organization for Economic Co-operation and Development) conducted research in four countries in Europe to determine the distribution of workers with disability in different sectors. Similar to our study, they found that the frequency of female personnel with disability was higher than male disabled personnel.¹³ In another study in Slovenia, it was established that there was a much higher percentage of women with disability working in the health sector (93.5%).¹¹

In a study in England, it was determined that the educational levels of the participants were mostly low and that they were married with children.¹² In another

Table 5. Problems of the working environment and conditions of disabled health care workers (n:63).

Problems	n	%
They had been discriminated against	29	46.0
The female disabled workers had experienced more discrimination	18	28.6
Their salaries were lower than non-disabled individuals	11	17.5
Dissatisfied with their jobs	24	38.1
Their promotions were being blocked	22	34.9
Desired to work in the private sector	14	22.2
Workers don't take enough breaks while working	41	65.1
Want to work part time	36	57.1
The laws concerning work did not adequately protect the rights of the disabled	35	55.6
They had experienced mobbing (psychological violence) at work	37	58.7
They worked at jobs which did not require a specific skill set	35	55.6
The disabled quotas for hiring were insufficient	25	39.7

Table 6. Problems of the accessibility and social problems of disabled health care workers (n:63).

Problems	n	%
Accessibility		
The structures at the hospital like stairs and lifts are not appropriate for the disabled	40	63.5
The computers, desks, tables and chairs at the hospital are not appropriate for the disabled	43	68.3
The transport vehicles, sidewalks and roads to the hospital are not appropriate for the disabled	49	77.8
There were no disabled ramps at the units they worked	18	28.6
There were no disabled toilets at the units they worked	36	57.1
Social		
They experienced prejudice at the hospital	9	14.3
Disabled people are at a disadvantage when they are being hired	43	68.3
They have felt discriminated against by management	8	12.7

Table 7. A comparison of the basic fields and degrees of difficulty experienced by the disabled healthcare workers from studies in Turkey and Zambia.

Basic fields	Degrees of difficulty (%)		
	Those who had some difficulty and more	Those who expressed difficulty and more	Those who could not engage in the activity at all
	Our/Turkey*/Zambia**	Our/Turkey*/Zambia**	Our/Turkey*/Zambia**
Sight	5.5/ 9.1/ 4.7	0.3/ 2.2/ 2.6	0.3/ 0.3/ 0.5
Hearing	1.5/ 10.5/ 3.7	0.0/ 2.3/ 2.3	0.0/ 0.2/ 0.5
Mobility	8.6/ 14.9/ 5.1	0.9/ 6.0/ 3.8	0.0/ 1.4/ 0.8
Cognitive skills	13.0/ 13.1/ 2.0	2.1/ 2.7/ 1.5	0.0/ 0.3/ 0.3
Personal hygiene	0.3/ 4.7/ 2.0	0.3/ 2.2/ 1.3	0.3/ 1.0/ 0.4
Communication	2.4/ -/ 2.1	0.3/ -/ 1.4	0.0/ -/ 0.5

*: (TÜİK, Health Survey)
 **: (United Nations Washington Group on Disability Statistics. Understanding and Interpreting Disability as Measured Using the WG Short Set of Question. Washington Group Position Paper)

study of health care workers with disability, 73.7% of the participants were found to have low educational status, and that 82.6% had children.¹¹ In a study in Europe in which four countries participated, the frequency of staff with disability was higher in the group with lower educational backgrounds.¹³ These results are compatible with ours.

The prevalence of workers with disability we observed in our study is also compatible with results from research encompassing all American workers (19.5%), and studies from various European countries like Denmark, Finland, Ireland and Holland (14-24%).^{13,17}

In our study, the major area of disability was found to be cognitive disabilities. According to the Disabled Personnel Statistics for 2018, the highest prevalence of disability in the public sector was physical mobility. However, when the data is analyzed carefully, it appears that many of the workers with disability were within the unclassifiable groups.¹⁴ This situation led us to believe that the questions used by the Statistics group for the determination and definition of disability were insufficient. The brief set of questions prepared by the Washington Disability Statistics Group was first used in a study in Zambia where the highest prevalence of disability was locomotive ability and problems with sight were second.⁸ This result is compatible with TÜİK data but incompatible with our findings. In a study in Netherlands of the disabled, the highest prevalence of disability was found to be cognitive disabilities.¹⁸ This result is compatible with our findings.

According to the Zambian sample study, the prevalence of the first group with disability was 14.5%, the second was 8.5%, the third group with disability was 2.4%, and the fourth group was 6.1%.⁸ When compared to our results, our first and fourth groups' percentages were higher than the Zambian ones; and

the percentages for our second and third groups with disability was lower. The perception of disability in Zambia may change according to many factors such as geography, culture and personal characteristics. One of the common responses between groups with disability 1 and 4 is the answer: "I have slight difficulty" in which the concept of "slight" may vary from person to person. These results are indicative of the advantages of having four different cut-off points in determining disability.

A comparison of the basic fields and degree of difficulty experienced by the healthcare workers with disability from studies in Turkey and Zambia has been provided in Table 7.

According to the results of a study of 2 247 workers with disability in Germany, 45% suffered muscular and skeletal disorders, 2% had hypertension, 5% had a history of work-related accidents and 19% had cardiac and circulatory diseases.¹⁹ Compared to the German study's results, we observed that the frequency of muscular skeletal disorders and hypertension were higher, and that the prevalence of cardiac and circulatory system illnesses was lower. In a study in Slovenia of disabled health care workers, it was observed that 40.0% of the workers suffered from cardiac and circulatory problems.¹¹ This frequency was much higher than the results we observed in our study.

Many studies have indicated that the back and shoulder problems experienced by healthcare workers are mainly due to lifting the patients and can cause disabilities.²⁰⁻²³

The job satisfaction ratio we observed was higher than research conducted in different sectors investigating the job satisfaction of workers with disability in Denmark (25%), Finland (20%), Ireland (14%) and Holland (12%).¹³ The individual factors affecting job satisfaction are character, faith and values, expectations, the socio-cultural environmental effects, experience, age, period of service, gender, educational status, and intelligence. The organizational factors include points like the difficulty range, structure, and the social standing and importance of the job, the organizational culture and climate, salaries, promotions, status, rewards, social options, working conditions, job gratification, loyalty, supervisors, job safety and the possibility for advancement.²⁴ There are many factors mentioned in the literature which influence job satisfaction. In addition to all of these factors, the fact that the expectations and threshold for disabled workers job satisfaction are low in our country may have contributed to the reason why our results were high.

In research conducted in Turkey "A Study to Measure the Discrimination faced by the Handicapped" and in another study, the difficulties the disabled

encountered were determined to be: pay inequality, obstacles preventing promotions, inadequate working conditions, being at a disadvantage during the hiring process, working in jobs that do not necessitate any skill sets (menial labor), social isolation, discrimination from the employers, and the physical difficulties in getting to and from work. These results were compatible with those in our study.²⁵⁻²⁶

According to the data from TÜİK, the most important reason why workers with disability quit their jobs is that the conditions cannot accommodate their disability and an increase in their health care problems.²⁷ Our results also show that most of the disabled workers experience more health problems because they are working. The TÜİK data states that workers with disability experience these factors in their workplace, the fact that the working hours do not accommodate their disabilities, the presence of physical obstacles in the workplace and in their routes, and difficulties they face in order to get permission for their own treatment.²⁷ These findings were similar to ones we determined in our study. According to the data from TÜİK, approximately 20-30% of disabled workers indicated a need to take more frequent breaks while working and preferred to work on a part-time basis; in our study, the majority of workers with disability professed the same desire.²⁷ In a study in Italy, workers with disability claimed that their working hours were too long and that they were open to the possibility of flexible working hours.²⁸

In our study, we observed that one out of three health care workers with disability expressed the idea that when compared to men, disabled women faced more discrimination in the workplace. This result was compatible with the findings of a study in Italy in which it was observed that the discrimination experienced by women both because of their gender and their disabilities, had a cumulative effect.²⁸

Study Limitations

There are some limitations to our study. When the literature was examined, we did not encounter any study of health care workers with disability in Turkey. The number of such studies internationally is also quite limited. Similar to problems experienced worldwide, we too had difficulties in defining and determining disabilities. The questions and forms prepared in order to pinpoint disabilities have not yet been standardized on an international basis. The most comprehensive of criteria available today is the brief set of questions prepared by the Washington Disabilities Statistics Group.⁸ Nevertheless, this set consists of four cut-off points and there is no data which indicates which point is more correct. In addition, the difficulty degrees for each question may be based on personal perceptions.

Since the workload of health care workers is very heavy, and because the questionnaires were conducted during working hours, this may have contributed to low rate of participation in our survey. The fact that the results were based on the declarations of the participants is another limitation of our study. Finally, the study was conducted in a single city's hospitals; primary health care centers and secondary health care centers were not included.

CONCLUSION

In conclusion, when compared to the other groups, the prevalence of health care workers with disability were found to be higher among older people, females, those married and with children, with educational status of a university degree or below, doctors, those worked in clinical sciences, and within the medium income range. Most of the health care workers with disability had cognitive impairment, the main health concerns were cardiac and circulatory system disorders, and the most common complaints resulting from working conditions were of fatigue and muscular and joint pain. In addition, health care workers with disability stated the breaks between working hours were inadequate, they desired to work on a part-time basis, the legal regulations were insufficient, they were exposed to mobbing, they were put to work at tasks which did not necessitate any skills, the workplace environment was unsuitable, during commutes to work they experienced major difficulties in transportation because the vehicles and routes did not accommodate disabilities, and that they were at a disadvantage when it came to hiring processes.

There is a necessity for a joint international definition of disability and a comprehensive form needs to be prepared encompassing these points to enable the determination of what constitutes a disability. Once these forms are prepared, standardized and implemented internationally the detailed difficulties experienced by disabled workers may be extrapolated and interventions should be implemented. In addition, improvements have to be put into application concerning the flexibility of working hours, an increased number of breaks, prevention of mobbing and being forced to do tasks necessitating menial labor, transportation both to-and-from and within the hospital, and the workplace conditions should accommodate the needs of the disabled work force.

We found that, how many workers with disability are working and what are their problems. Further studies are needed for international and cross-sectoral comparisons. In-depth interviews should be conducted in workers with disability.

* Author Contributions

Metin Pıçakçıefe contributed equally to this work; Metin Pıçakçıefe designed research; Metin Pıçakçıefe, Volkan Akkaya and Erkan Erbaş performed research; Metin Pıçakçıefe, Volkan Akkaya and Erkan Erbaş

contributed new reagents/analytic tools; Metin Pıçakçıefe analyzed data; Metin Pıçakçıefe, Volkan Akkaya, and Erkan Erbaş wrote the paper. All authors read and approved the final version of this manuscript.

*The authors declare that there are no conflicts of interest.

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