



The prevalence of orthopedic disabilities in the district of Çay, Afyon, Turkey

Afyon'un Çay ilçesinde ortopedik özürlülerin sıklığı

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Amaç: Bu çalışmada, ortopedik özürlülerin tüm toplumdaki sıklığını belirlemek için örnek teşkil edebilecek bir bölgedeki özürlü kişilere ait veriler çıkarıldı.

Çalışma planı: Çalışma Afyon'un Çay ilçesinde iki aşamalı saha çalışması olarak yapıldı. İlk aşamada ön tarama ile bölgedeki tüm ortopedik özürlü bireyler belirlendi; daha sonra ortopedi ve travmatoloji uzmanları tarafından bu bireylerin sorgulamaları ve muayeneleri yapıldı. Gerekliğinde radyolojik incelemeye başvuruldu. Süreklilik gösteren ve kişide belirgin bir fonksiyon kaybına yol açan bir kas-iskelet sistemi patolojisi ortopedik özürlü olarak kabul edildi. Ortopedik özürlüler doğuştan, travmatik, serebral felç, poliomiyelit ve diğer nedenler olmak üzere beş gruba ayrıldı.

Sonuçlar: Toplam nüfusu 35,571 olan alanda ortopedik özürlü 189 kişi saptandı (53/10,000). Sakatlık görülme oranı erkeklerde kadınlara göre 1.8 kat fazla idi. Doğuştan hastalıklar en sık ortopedik özürlü nedeni olarak belirlendi (%25.9; 13.7/10,000); bunu travma (%23.8; 12.6/10,000), serebral felç (%21.7; 11.5/10,000), poliomiyelit (%10.1; 5.3/10,000) ve diğerleri (%18.5; 9.8/10,000) izlemekteydi. En düşük ortalama yaş (19±5) serebral felç grubunda bulundu; aynı zamanda, en fazla fonksiyon kaybına yol açan sakatlık nedeni idi. Poliomiyelitli grupta yaş ortalaması 29±7 bulundu. Özürlülerin %37'sinde dar ya da geniş kapsamlı bir cerrahi girişimle belirli bir iyileşme elde edilebileceği, %9'unda ise fizik tedavi ve protez-ortez gibi cihazlar ile fonksiyonlarda ve yaşam kalitelerinde belirgin iyileşme sağlanabileceği saptandı; buna karşın sadece %18'inin bir sağlık güvencesi vardı.

Çıkarımlar: Bulgularımız, ülkemizde ortopedik özürlü sıklığını ve sonuçlarını belirlemeye yönelik çalışmalara ışık tutabilir.

Anahtar sözcükler: Afyon; anormallik/epidemioloji; özürlü kişiler; nüfus araştırması; prevalans; halk sağlığı.

Objectives: Data were collected on disabilities from a sample population in order to estimate the prevalence of orthopedic disabilities in the general population.

Methods: A two-stage field study was conducted in Çay, a district of Afyon, Turkey. In the first stage, a list of all individuals with orthopedic disabilities was derived. Then, medical histories were elicited and examinations were made by a team of specialists of orthopedics and traumatology. Radiographic studies were made when necessary. Orthopedic disabilities were defined as any muscle or skeletal abnormality that was associated with a permanent functional loss and were classified as congenital, traumatic, cerebral palsy, poliomyelitis, and other causes.

Results: The overall population was 35,571, of whom 189 had orthopedic disabilities (53/10,000). The male-to-female ratio was 1.8. The most common cause was congenital diseases (25.9%; 13.7/10,000), followed by trauma (23.8%; 12.6/10,000), cerebral palsy (21.7%; 11.5/10,000), poliomyelitis (10.1%; 5.3/10,000), and others (18.5%; 9.8/10,000). The lowest mean age (19±5 years) was found in those with cerebral palsy, which was associated with the highest degree of functional loss. The mean age in patients with poliomyelitis was 29±7 years. It was found that 37% of the disabled could benefit from either a limited or extensive surgical intervention, and 9% could have significant improvement both in functional ability and life quality through physical therapy or the use of a prosthesis/orthosis. Only 18% were under the coverage of a health insurance, though.

Conclusions: The data of this study may throw some new light on the prevalence and implications of orthopedic disabilities in Turkey.

Key words: Afyon; abnormalities/epidemiology; disabled persons; population surveillance; prevalence; public health.

World Health Organization has reported that, disability rate is 10% for developed countries and 12% for underdeveloped countries. According to these rates it is accepted that 6-7.5 million disabled exist in Turkey. Determination of number of disabled with respect to disability group is a prerequisite for studies aiming to determine and solve the problems of disabled. While studies are ongoing on this subject, there is no database currently in Turkey. ⁽¹⁾

In this study in order to estimate the prevalence of orthopedic disabilities that leading to severe functional impairment of musculoskeletal system, it was aimed to reveal data from a sample population of our community.

Patients and method

Study was conducted in Çay district of Afyon, including villages and suburbs. This field study was made in two stage. In the first stage, district was divided into 10 geographic regions. In each region, individuals with orthopedic disability determined and registered by health center personnel of the region. In the second stage of the study which conducted by a team of specialists of orthopedics and traumatology, all disabled individuals determined in the first stage were asked to fill a questionnaire consisting prenatal, natal and postnatal histories. Then orthopedic examinations of all the disabled were made. Radiographic studies were made when necessary.

In our study, orthopedic disabilities were defined as any muscle or skeletal abnormality that was associated with a permanent functional loss. Orthopedic problems not leading to functional loss such as asymptomatic pes planus, minimal hip dysplasia in an adult; and completely recovered cases from a disease through medical or surgical treatment were not included in the study. Cases were divided into five groups according to orthopedic disability cause: Congenital, traumatic, cerebral palsy (CP), poliomyelitis and others. Individuals were also classified with respect to age, sex and social security.

Results

The community which was screened, consisted of 35571 individuals. Total number of individuals with orthopedic disability was 189 (53/10.000). The most common orthopedic disability cause was con-

genital diseases (13.7/10.000). Other disability causes were defined as trauma (12.6/10.000), CP (11.5/10.000), poliomyelitis (5.3/10.000) and other (9.8/10.000) (Table 1).

Congenital disabilities with respect to their prevalence were lined up as follows: Syndactyly (n=11), developmental dysplasia of hip (n=9), pes equinovarus (n=7), obstetrical palsy (n=5), meningomyelocele (n=3), kyphoscoliosis (n=3), muscular dystrophy (n=3), peroneal paralysis (n=2) and other (n=6).

Traumatic disabilities were defined as: Malunion (n=13), amputation (n=9), contracture (n=7), paresy-paralysis (n=5), arthrosis (n=4), nonunion (n=4), and ankylosis (n=3).

Patients with CP were grouped as spastic, dyskinetic, mixed (spastic-dyskinetic) and ataxic. Spastic group was also subdivided into 4 groups. Of the 28 spastic cases, 2 were monoplegic, 10 hemiplegic, 8 paraplegic and 8 quadriplegic.

Sequela of poliomyelitis was encountered in 19 individuals. In this group average age was 29 ± 7 and the youngest was 22 years old.

In the group named "other", 7 disabled due to septic arthritis or osteomyelitis sequela, 6 rheumatoid arthritis/ankylosing spondylitis, 5 brain hemorrhage, 4 gunshot wounds and 3 cases due to burn were detected.

The number of disabled whom bedridden or dependent to wheelchair was 11. Dependence was due to CP in 9, spine trauma in 1 and meningomyelocele in 1. The ratio of dependent disabled to whole disabled was found to be 6% and the prevalence was 3/10.000.

It was found that, it could possible to get some benefit in 70 disabled from either a limited or extensive surgical intervention and 17 disabled could have significant improvement both in functional ability and life quality through physical therapy or the use of a prosthesis/orthesis. Only 34 disabled (18%) were under the coverage of a health insurance.

Discussion

In determination of health problems, it is very important to reveal the data of target population.

Constitution of the necessary infrastructure for treatment, rehabilitation and supporting physio-socially the disabled thereby integrating them to society is under responsibility of country's health professionals. Reliable data should be provided to achieve this object. In Turkey we couldn't find any epidemiologic screening study about orthopedic disabilities of a community in a particular geographic region. In a report that sent to UN in 1993 by State Planning Organization, it has been reported that the amount of individuals with orthopedic disability was 770.000 and the ratio of this to population was 1.4%.^[1]

In Turkey, studies which aimed to determine the prevalence of orthopedic disabilities have focused on a particular age group; mostly consisting chil-

dren, adolescents or students.^[2-6] Therefore, these studies represent epidemiologic data of that age groups and not the whole population. Although in our country Saltık et al have investigated prevalence of orthopedic disabilities of whole population in a particular region, this study includes all disabilities (deafness, blindness, orthopedic disability etc) and is based on sampling technique. In this study disability rates were calculated approximately by screening 13% of the target population. Our study differs from others because it includes individuals of all age groups in the region and screening of all the settlement.

In studied region, orthopedic disability prevalence was found to be 53/10.000. Most common cause of orthopedic disability was congenital

Table1. Prevalance of orthopedic disabilities in Çay district

Group	Disability	Number	%	Prevalance (0/000)
Congenital Disabilities (%25,9)	Syndactyly	11	5.8	3.0
	Developmental Hip Dysplasia	9	4.8	2.5
	PEV	7	3.7	1.9
	Obstetrical palsy	5	2.7	1.4
	Meningomyelocele	3	1.6	0.8
	Kyphoscoliosis	3	1.6	0.8
	Muscular dystrophy	3	1.6	0.8
	Peroneal paralysis	2	1.1	0.5
	Other	6	3.2	1.6
	<i>Total</i>		49	25.9
Traumatic Disabilities (%23,8)	Malunion	13	6.9	3.6
	Amputation	9	4.8	2.5
	Contracture	7	3.7	1.9
	Paresis/Paralysis	5	2.7	1.4
	Arthrosis	4	2.1	1.1
	Nonunion	4	2.1	1.1
	Ankylosis	3	1.6	0.8
	<i>Total</i>		45	23.8
CP (%21,6)	Spastic	28	14.8	7.8
	Dyskinetic	9	4.8	2.5
	Mixed	3	1.6	0.8
	Ataxic	1	0.5	0.2
	<i>Total</i>		41	21.7
Other (%)	Septic Arthritis/Osteomyelitis	7	3.7	1.9
	RA/AS	6	3.1	1.6
	Cerebral Hemorrhage	5	2.7	1.4
	Gun Shot Wound	4	2.1	1.1
	Burn	3	1.6	0.8
	Unclassified	10	5.3	2.8
	<i>Total</i>		35	18.5
Poliomyelitis (%10)	–	19	10.1	5.3
<i>Total</i>		189	100.0	53.0

diseases. Of the 19 patients whom have orthopedic disability due to poliomyelitis mean age was 29 ± 7 and the youngest patient was 22 years old. So, this indicates poliomyelitis has been eradicated in the region. In all groups higher disability rates were found in males when compared to females. While male/female ratio was 2.3 in disability due to poliomyelitis, this ratio was 2.1 in CP, 1.7 in congenital disabilities and 1.2 in traumatic disabilities. As 6% of all disabled bedridden, 81% of these were due to CP. Among congenital disabilities, syndactyly and developmental hip dysplasia were the most common and this could be explained by frequency of marriages between closed relatives in the district.

In our country, studies on orthopedic disability prevalence are generally cross sectional studies. Serin et al ^[2] was found orthopedic disability prevalence to be 6.8% in middle and high school students. Such a high rate is a result of inclusion of relatively frequent problems of that age group such as pes planovalgus and toeing in deformity, accepting them as disability. In our study such orthopedic problems leading to minimal functional impairment were not evaluated as disability.

Günel et al using military hospital records in Eskişehir region estimated the orthopedic disability ratio of young males as 153/100.000.

Saltık et al by using group sampling technique have reported that prevalence of all disabilities in Edirne to be 2.28% and orthopedic disabilities constitute 53.8% of all disabilities. According to this in that region orthopedic disability prevalence is 1.2%.

It is difficult to determine the prevalence of orthopedic disabilities because of cases with locomotor system impairment involve many discipline (orthopedics, neurology, neurosurgery). For example, like in CP, while the main pathology involves another system, locomotor system impairment may dominate. Articles about disability prevalence are not so many in the world, as in our country.^[8-10] Mittal et al surveyed 50055 individuals by home visits to screen congenital orthopedic anomalies and found the prevalence of club foot 9/10.000 and syndactyly 3.8/10.000. In our study, disability ratio was found to be 3/10.000 in syndactyly, 2.5/10.000 in developmental hip dysplasia and 1.96/10.000 in club foot. Disler et al^[9] screened 2072 individuals of

black population in South Africa and have found the disability proportion concerning locomotor system was 18.3%. They reported that disability was associated with congenital disorders in 23.7%, trauma in 31.6%, poliomyelitis in 21.7% of the cases and among disabled 15.8% were bedridden. Disler et al ^[10] conducted a study in a district of South Africa with poor socioeconomic level and trauma and poliomyelitis reported as major disability causes.

In a screening study conducted in a rural area of Tailand, prevalence of locomotor system disabilities was found to be 3% and this ratio was higher in males and elderly. Main disability causes defined as poliomyelitis, congenital malformations, traumatic amputations and CP.^[8]

In Kandahar, a city of Afghanistan which health infrastructure collapsed after 19 years of civil war, according to 1997 data; trauma (5.9%), poliomyelitis (3.1%), and congenital disabilities (1.7%) were defined as main disability causes.^[12]

In our study it was observed that major cause of orthopedic disability was CP and congenital diseases in young age group and trauma in middle-advanced age group. It is clear that orthopedic disability prevalence is higher in males compared to females and traumatic disabilities constitutes an important part. In our study, rate of disability due to poliomyelitis (10%) is quite low compared to some regions in the world. While the most common orthopedic disability cause in the studied district was congenital diseases, CP was the most severe.

It was determined that patients encountered severe problems with their treatment because of having lower income and only 34 (18%) were under the coverage of a health insurance. On the other hand it was determined that an operation in 70 cases (37%), physical therapy, prosthesis or orthosis in 17 cases (9%) was needed. Based on these data, it can be stated that in most of the disabled by medical or surgical intervention disability could be removed either entirely or partly.

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