

Disability profile of outpatient in a service of physical medicine and rehabilitation in a high level hospital

Álvaro Lomelí-Rivas,* Omar A. Guzmán-Gurrola,**
Margarita G. Escalona-Castro,* Claudia R. Herrada-Chávez***

RESUMEN

Antecedentes. La medición de la discapacidad es una de las actividades fundamentales de cualquier unidad de rehabilitación. Hay muchos instrumentos que ofrecen una perspectiva individual del nivel de ejecución de las actividades de la vida diaria. El objetivo de este trabajo fue conocer el grado y tipo de discapacidad, medido con el índice de Barthel (BI), en una población ambulatoria de un servicio de medicina de rehabilitación. **Material y métodos.** Se recolectó información de los expedientes de pacientes atendidos en el Hospital Médica Sur durante 2013. Se registraron datos demográficos, diagnósticos de ingreso y los resultados del BI; se incluyeron los expedientes cuyos resultados fueron ≤ 99 , con la intención de conocer el grado de discapacidad y los dominios afectados. **Resultados.** Se incluyeron 1,257 expedientes (92.8%), de los cuales 515 fueron del sexo masculino y 742 del femenino. La media de la edad fue de 48.8 (± 17) años. Los pacientes mayores de 18 años con BI ≤ 99 fue de 279 (22.2%), de los cuales 106 fueron del sexo masculino y 173 del femenino. La media del grupo con discapacidad fue de 52 (± 18) años. La media del BI al inicio fue de 96.7 (± 9). Se encontró correlación significativa entre la edad con los dominios de aseo (+0.6), vestido (+ 0.5), ir al excusado (+ 0.4) y subir y bajar escaleras (+ 0.4). La población femenina con discapacidad es predominante y con proporción más grande que en mujeres sin discapacidad. Se encontraron cuatro dominios afectados con índice de correlación significativo. **Conclusión.** La prevalencia de discapacidad fue de 22%, los padecimientos que más discapacidad produjeron fueron de orden ortopédico y traumático.

Palabras clave. Evaluación de la discapacidad. Diagnóstico. Rehabilitación.

ABSTRACT

Background. The measurement of disability is one of the fundamental activities of any rehabilitation unit. There are many instruments that offer an individual perspective of the level of implementation of the activities of daily living. The aim of this work was to know the degree and type of disability as measured with the Barthel index (BI) in an outpatient population attending a rehabilitation medicine. **Material and methods.** Information from the records of patients treated at Medica Sur during 2013 was obtained. Demographic data, diagnoses and results of the BI were registered; the files which results were ≤ 99 , in order to know the disability degree and the affected domains were included. **Results.** We obtained 1257 records, of which 515 were males and 742 were females. The mean age was 49 (± 17) years. Evaluation resulted in 279 (22.2%) patients older than 17 years with BI ≤ 99 . The average age of the disability group was 52 (± 18) years. Significant correlation was found between the age with grooming (+ 0.6), dressing (+ 0.5), toilet use (+ 0.4) and stairs (+ 0.4) domains. The disabled female population is predominant and with a larger proportion than in women without a disability. **Conclusions.** The prevalence of disability was 22%, the conditions that produced more disability are orthopedic and traumatic conditions.

Key words. Disability evaluation. Diagnosis. Rehabilitation.

* Rehabilitation Medicine Clinic, Medica Sur Clinic Foundation. Mexico City, Mexico.

** Physical Medicine Unit of the Southern Region, Siglo XXI, IMSS, Mexico City, Mexico.

*** The Secretariat of Health, Mexico City, Mexico.

Correspondence:

Álvaro Lomelí-Rivas, MD, MSc.
Clínica de Medicina de Rehabilitación, Hospital Médica Sur.
Puente de Piedra, Núm. 150, Col. Toriello Guerra, C.P. 14050. Ciudad de México, México.
Tel.: (+5255) 5424-7224.
E-mail: alomelir@medicasur.org.mx

INTRODUCTION

The measurement of disability is one of the fundamental activities of any rehabilitation unit. There are many instruments that offer an individual perspective of the level of implementation of the activities of daily living. The most commonly used worldwide is the Barthel index (BI), which was designed in 1955, and published in 1965.¹ It was translated into the Spanish language and was validated in 1993. Thanks to the measuring instruments it is possible to know more objectively the degree of function deviation and human participation in people with disabilities. In Mexico, 5.1% of the total population has some type of disability;³ however, this is a general figure and of course that does not apply in all circumstances. This does not necessarily represent a reality, appreciation aspects are used in the national census questionnaires and, personnel trained in rehabilitation do not perform scales of disability measurement. The distribution of disability is also variable and depends on the age group, social, work, gender, region where it is made, etc. It is necessary to research the type and degree of disability in order to know the level of people's participation (level of involvement in a life situation), as referred by the International Classification of Function (ICF).⁴ On the other hand, the terms of impairment and disability are frequently confused and this can lead to errors in the current quantification of the population. The ICF clearly defines these terms.² In a rehabilitation medicine unit, it is very important to know the index of general and specific disability to reorient strategies and actions towards prevention and rehabilitation of the population with impairments and disabilities. Validated instruments that allow to know the status of function in relation to the activities of daily living are used for the measurement of disability. Some of the measuring instruments in addition to the BI are the Katz index, the Lawton and Brody index, and the Functional Independence Measure (FIM). Each one of them has certain characteristics that focus on certain types of patients, with advantages and disadvantages. All are positive, qualitative ordinals with a different sensitivity value of change and the type of personnel that may perform it. The FIM, for example, is carried out only by specialized staff, it is very precise and is sensitive to changes in a week, but will require several hours to apply it fully (100 items); while Katz has a sensitivity of change in a month, it may be done by any trained person and was designed for elders. The Lawton and the BI have very similar characteristics, the first one is instrumented, has a value of sensitivity to change in two weeks and trained personnel is required.

The BI as a measurement of disability was chosen for this study due to its characteristics.

Disability is not an isolated or permanent phenomenon, but on the other hand, is a dynamic process, which involves a large number of internal and external elements of the patient.² The difference in disability rates among a hospitalization and an outpatient service may be mainly due to the type of diseases or the stadium in which they are in the natural history of the disease. The need to know the rate of disability is to know which domains are most affected and focus them both on the diagnosis and treatment of disability. This research will also help determine if the BI is the proper instrument to be used on this type of population. The overall objective of this study was to know the degree and type of disability as measured with the BI in an outpatient population attending a service of rehabilitation medicine.

MATERIAL AND METHODS

Patients

The evaluated the records of patients attending the rehabilitation medicine clinic of Medica Sur Hospital, from January 1st to December 31th 2013. The inclusion criteria were age greater than 17 years, any gender, having full demographic data and at least one BI assessment. Medical records and data collection card were reviewed by medical researchers. The revision of each file was made by all the researchers and they scored the initial BI and the final BI. In case of a BI recorded ≤ 99 points, the file was chosen. We used an electronic database collection and a worksheet for the processing of results.

Statistics

Results were processed with central tendency measures, media and mode, and standard deviation as a statistical dispersion measure. The square xi test was used to compare proportions of populations. The *T* test was used to compare averages among groups. The probability of error accepted was 0.05. The level of correlation between two quantitative variables was obtained by Pearson test.

RESULTS

The percentage of people with disabilities that was found within the outpatient group was 22%. The average age of the outpatient population that attends the Rehabilitation Medicine Clinic was $47(\pm 18.6)$ years.

It is notorious the fact that the average of the population tends to deviate into adulthood, contrary to most centers of rehabilitation medicine in which the average age is lower. This may be due to the type of patients attending at of Medica Sur Hospital, where the number of pediatric patients is lower, partly because of the number of children that are per family. In the group of disability, there are more women than men and it has a significant difference ($p < 0.05$) (Table 1).

Patients attending Medica Sur live in the surrounding neighborhoods by 76%, therefore it is considered a Regional Hospital in the field of rehabilitation (Table 2). This is clearly understood because commuting of persons with disabilities is difficult in a proportional relationship to the distance. The three elements that are taken into consideration to attend a rehabilitation center are the type of disability and the level of resolution of the rehabilitation

Table 1. Distribution by age and sex of the population with disabilities.

| Age | Male | Female | Total |
|-------|------|--------|-------|
| 16-25 | 14 | 10 | 24 |
| 26-35 | 18 | 21 | 39 |
| 36-45 | 20 | 23 | 43 |
| 46-55 | 17 | 43 | 60 |
| 56-65 | 8 | 33 | 41 |
| 66-75 | 14 | 24 | 38 |
| > 75 | 15 | 19 | 34 |
| Total | 106 | 173 | 279 |

The proportion of women with disabilities is higher than those who do not ($p < 0.05$).

unit, the cost of transportation, and the time spent in go and return home. Five percent of patients come from other States of the Republic, of which the main two are the State of Mexico and the State of Morelos, both adjoining to Mexico City.

The result of the intensity of disability in outpatients with the BI (Table 3) tells us that the majority of patients have mild disabilities (92.8%) and only two patients have an extreme disability.

In the domains where a significant correlation was found between the levels of disability with age were those of toilet, dress, and go to the toilet and up and down stairs (Table 4). This means that older persons had rates higher than the younger. This may occur by the type of condition that originated the disability rather than by age. The question should be if it is due to that the elderly patient is more adaptive than the young.

In regards to morbidity that gave rise to the disability, the most frequent diseases are grouped generically, since individually the frequency was relatively low and with little significance, on the other hand already grouped give a more general idea of the type of disease. The conditions associated with disability in this study were grouped in generic form according to the International Classification of Diseases 10 (Table 5).

DISCUSSION

The prevalence of disability in the population of outpatient in rehabilitation medicine clinic in Medica Sur was 22% in the year of 2013. According to the Instituto Nacional

Table 2. Distribution of patients with disabilities in different municipalities of Mexico City.

| Municipalities | Frequency | Cumulative frequency | Percentage (%) | Cumulative percentage (%) |
|---------------------|-----------|----------------------|----------------|---------------------------|
| Tlalpan | 98 | 98 | 37.0 | 37 |
| Coyoacán | 69 | 167 | 26.0 | 63.0 |
| Xochimilco | 19 | 186 | 7.2 | 70.2 |
| Álvaro Obregón | 16 | 202 | 6.1 | 76.3 |
| Iztapalapa | 15 | 217 | 5.6 | 81.9 |
| Benito Juárez | 14 | 231 | 5.3 | 87.2 |
| Magdalena Contreras | 8 | 239 | 3.0 | 90.2 |
| Miguel Hidalgo | 5 | 244 | 1.9 | 92.1 |
| Iztacalco | 4 | 248 | 1.5 | 93.6 |
| Tláhuac | 4 | 252 | 1.5 | 95.2 |
| Venustiano Carranza | 4 | 256 | 1.5 | 96.7 |
| Cuauhtémoc | 3 | 259 | 1.1 | 97.8 |
| Gustavo A. Madero | 3 | 262 | 1.1 | 98.9 |
| Milpa Alta | 3 | 265 | 1.1 | 100.0 |
| Total | 265 | | 100.0 | |

You can see that 76% of the entire population with ambulatory disabilities was found in only 4 out of the 16 municipalities.

de Estadística y Geografía (INEGI) –Geography and Informatics National Institute– in 2010 Census, the prevalence of disability in the national population was 5%. It is expected that disability is going to find in one greater number in a specialized unit than in the general population; on the other hand, the measurement of disability in a rehabilitation center is done by specialized staff, while

Table 3. Distribution of the BI results sorted by degree of disability.

| Barthel index | Frequency (%) |
|---------------|---------------|
| 100 | 0 (0%) |
| 60-99 | 259 (92.8%) |
| 40-59 | 15 (5.4%) |
| 20-39 | 3 (1.1%) |
| 0-19 | 2 (0.7%) |
| Total | 279 (100%) |

The category is expressed in slight (60-99), moderate (40-59), severe (20-39) and extreme (0-19).

in a census people that record data are not specialized therefore their results are not as trust worthy. It is very likely that according to data from INEGI we are facing a problem of underreporting.

Our results agree with Moore, et al., where it is observed that women are more likely to suffer disability than men;⁷ this has been studied, and various hypotheses have been generated from the happening. It is also known that the longevity of men is usually shorter than women's, but they have a lower quality of life. This is interesting to know it because programs of rehabilitation medicine could prevent disability and improve the quality of life of patients; even though there are contradictory results concerning the effects of rehabilitation in the elderly, older people have greater opportunities to improve their quality of life when they receive rehabilitation compared to that of those who do not receive it.⁸

Medica Sur is a predominantly surgical tertiary hospital and where the kind of conditions that are addressed in

Table 4. The averages of the results of each activity.

| Activity | Normal score | BI \bar{x} | SD | (NS) - (BI \bar{x}) | % (NS) - (BI \bar{x}) |
|------------|--------------|--------------|-----|------------------------|--------------------------|
| Feeding | 10 | 9.3 | 1.9 | 0.7 | 7 |
| Bathing | 5 | 4.3 | 2.2 | 0.7 | 14 |
| Dressing | 10 | 8.3 | 2.7 | 1.7 | 17 |
| Grooming | 5 | 4.6 | 2.4 | 0.4 | 8 |
| Bowels | 10 | 9.9 | 0.8 | 0.1 | 1 |
| Bladder | 10 | 9.8 | 1.1 | 0.2 | 2 |
| Toilet use | 10 | 9.2 | 2.1 | 0.8 | 8 |
| Transfers | 15 | 12.7 | 3.2 | 2.3 | 15 |
| Mobility | 15 | 11.2 | 3.4 | 3.8 | 25 |
| Stairs | 10 | 6.3 | 3.2 | 3.7 | 37 |

The percentage of the difference between the maximum score for each activity and the average obtained in each domain is observed. The activities with the highest percentage in the difference are: transfers, dressing, mobility and stairs. BI \bar{x} = Barthel index media. SD: Standar deviation. (NS) - (BI \bar{x}) = Normal score – Barthel index media. % (NS) - (BI \bar{x}) = Percentage of (Normal Score – Barthel index media).

Table 5. Morbidity associated to disability.

| Diseases | Frequency | Cumulative frequency | Percentage (%) | Cumulative percentage (%) |
|-------------------------------|-----------|----------------------|----------------|---------------------------|
| Fractures | 65 | 65 | 23.30 | 23.30 |
| Contusions and sprains | 39 | 104 | 13.98 | 37.28 |
| Internal injuries of the knee | 26 | 130 | 9.32 | 46.60 |
| Root diseases | 25 | 155 | 8.96 | 55.56 |
| Soft tissue diseases | 23 | 178 | 8.24 | 63.80 |
| Osteoarthritis | 21 | 199 | 7.53 | 71.33 |
| Low back pain | 15 | 214 | 5.38 | 76.71 |
| Rotator cuff syndrome | 15 | 229 | 5.38 | 82.08 |
| Periferal neuropathies | 10 | 239 | 3.58 | 85.67 |
| Neck pain | 8 | 247 | 2.87 | 88.53 |
| Other | 32 | 279 | 11.47 | 100.00 |
| Total | 279 | | 100.00 | |

rehabilitation medicine have to do with suffering traumatic or resolved through surgery. Usually these conditions cause disability in the short to mid-term temporary type; for example, sequels of fractures, sprains and injuries, as well as the operations of spine disc, diseases or spine instability. Therefore, it is no stranger to the fact that the majority of patients who were treated in rehabilitation medicine have a mild disability. Within the domains of the BI results, the average obtained from the normal maximum score that every patient should have presented a low standard deviation, which indirectly indicates that there is much variation in the population that carry out the test. The percentage between the differences of the average with the maximum score is what makes relevant the result for some domains.

The main limits of this work are the retrospective method and the small number population included, therefore we need validated the results.

In conclusion, we found that the prevalence of disability between outpatient population that attends at rehabilitation medicine clinic of Medica Sur Hospital was 22% and, this condition was more prevalent among women.

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