

Life after Leprosy Treatment Discharge: Physical and Social Limitations

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This study has been carried out to verify the association between physical disability, activity limitation and social participation of people who had leprosy. This is an ecological analytical study, carried out from 2003 to 2014 in eleven cities belonging to the Epidemiological Surveillance Group of Taubaté-SP, Brazil. Individuals who had leprosy and were discharged after cure were evaluated through simplified neurological assessment, disability grade, activity limitation and social participation. Two hundred and ten people were assessed, with average age of 55.62 years. Among them, 72.86% individuals reported some health problem and the majority complained of pain. The prevalent operational classification for leprosy was multibacillary (70.48%). 156 individuals (75.29%) presented with physical disability, either in moderate or severe grade, and 60.48% had some level of activity limitation. The most frequent degree of social restriction (19.52%) was mild. There was strong correlation between social participation and activity limitation ($r=0.5798$; $p<0.0001$). To conclude, both physical disabilities as well as activity limitations were frequent in these persons. Activity limitation was significantly associated with multibacillary forms, physical disabilities, low educational level and pain. As for decreased social participation, the association was more evident among people who had family income less than three minimum wages, with visible physical damages and presence of severe pain.

Keywords: Leprosy; Disabled persons; People with disability; Activities of daily living; Social participation

Introduction

Leprosy is a chronic mildly contagious disease that, when diagnosed late, may result in neural damage and disabilities. Affected persons require specialized and continuous care, even after therapeutic drug discharge, in order to avoid deformities, vision impairment, physical disabili-

ties and incapacity (WHO 2015a, Britton & Lockwood 2004).

Brazil is the only country in America where leprosy is endemic; 31064 new cases were reported in 2014, and 26395 in 2015, 1,752 of them presented grade 2 – serious disabilities and deformity (WHO 2015a, WHO 2015b). The

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detection of new cases is high in several states, mostly related to low socioeconomic, educational and income conditions, as well as difficulties in healthcare access and lack of knowledge of the disease by the population, despite the existence of organized programs for its control (WHO 2015a, Brazil 2008, Monteiro et al 2014). In Brazil Leprosy requires mandatory notification; the Ministry of Health follows all epidemiological records and establishes policies in attempt to control its expansion.

It is well known that economic factors in the endemic area interfere with the health policies directed to the disease control, mainly in terms of health services organization. This means professional qualification, early diagnosis and proper treatment, the search for contacts, as well as the availability of services able to attend all levels of complexity, including physical rehabilitation. This comprehensive care would identify and treat the deficiencies before they develop into disabilities (WHO 2015b).

In São Paulo – a more industrialized and developed state – the prevalence rate is low (0.31/10,000 in habitants); nevertheless the diagnosis of leprosy is frequently late when it may have reached more advanced forms (multibacillary) and the percentage of people with severe physical disability (11.34%) is considered significantly high, implying physical and social impairments, which in general compromise the quality of life of these people before, during and after their treatment (São Paulo 2016).

Leprosy is considered a public health issue in some areas of the world, despite all global efforts to control or eradicate it. Worldwide 210 758 new cases were diagnosed in 2015 (3,2/100,000); out of them 14 059 already had a greater disability grade (grade 2). According to future projections on leprosy, 5 million people will become sick in

the world from 2000 to 2020, and 1 million out of them will develop a more severe disability (Brakel et al 2012).

It is important to emphasize that 14 million people who were treated with multidrug therapy (MDT) in the world are nowadays considered cured; nevertheless, in fact they suffer the burden of disability or stigma. In face of the several social, cultural and physical sequels caused by leprosy, one needs to understand how individuals experience their physical disability and the way it interferes with their social relations and daily living, which stresses the need of developing more research on this matter (Mantellini et al 2009).

In order to investigate those issues and to assist on clinical and epidemiological health interpretations, an international classification for functionality, disability and health was created and has been used in temporal monitoring of different populations. This classification brings a new view on the disabilities caused by illnesses, focusing more on the effects on peoples' lives rather than on their causes (either medical or biological). Besides, it comprehends also the interferences from the environment (physical, cultural, social and political), regarding aspects related to social inclusion, human valorization and co-responsibility (CIF 2008).

The World Health Organization (WHO) preconizes the use, in health services, of validated tools such as the Screening for Activity Limitation and Safety Awareness – SALSA, in order to identify the degree of social restriction, thus allowing a better understanding of the influence the disease has upon the individual, and to ease the elaboration of more efficient and profound therapeutic strategies (SALSA 2004).

In order to accomplish control actions, a new approach on the way of assessing people who had leprosy is needed. The use of those tools cited

above may stimulate them to express their feelings regarding the fear of disabilities and stigma, and how they affect daily activities, social participation and the insertion in the labor market and, as consequence, the quality of life (Monteiro et al 2014, Silva et al 2008). When people are allowed to express their opinion on a problem that affects them they become more accepting of their current health condition and more engaged in their treatment and self-care. Consequently a more appropriate assistance is achieved, thus providing an improvement of daily activities performance and social participation. The objective of this study is to determine the association between social, demographic and clinical characteristics, physical disability, activity limitation and social participation of people that had leprosy and were declared as cured after successful administration of MDT.

Methods

An ecological analytical study was carried out in 11 cities that are part of the Group of Epidemiological Surveillance in São Paulo State, Brazil. Participants were 210 individuals of both sexes, aged 15 years or more, who had undergone treatment for leprosy, had been considered cured and were already discharged from medication, from 2004 to 2013. The sampling selection was performed on the database of the Information System on Diseases of Compulsory Declaration. Individuals that showed cognitive impairment to answer the questionnaire were excluded.

The study was approved by the Ethical Committee of the University of Taubaté, under no. 526209, dated February 7, 2014, respecting the precepts of the Resolution No. 466/2012 of the National Health Council, which regulates the protocols of research with human beings. All participants have signed an Informed Consent Form.

Through database the subjects were contacted

and invited to participate in the research. Those who accepted attended to a previously scheduled meeting. Once signed the consent, they were gathered into groups formed by three and four people, in order to fulfill four different questionnaires applied by the researcher. Later on subjects were individually evaluated through a simplified neurological assessment, then received orientations and medical referral when needed. All data were collected from December 2014 to December 2015.

The questionnaires, once filled by the subjects during the group's meeting, allowed the characterization of the socio-demographic and clinical profiles, as well as information regarding social participation and limitation in daily activities. Each subject's clinical history on leprosy was obtained through the study of their individual medical record.

To evaluate neural impairment, the simplified neurological assessment and disability grade recommended by the Ministry of Health was used. The simplified neurological assessment addressed subject's complaints and clinical data through inspection, nerves palpation, muscle strength and sensibility testing – using Semmes-Weinstein monofilaments kit – on the recommended areas of hands and feet. For assessment of the eyes, a strand of 5 cm-length fine dental floss without flavor was used. The classification of the physical disability grade regarding eyes, hands and feet was performed according the WHO's criteria (WHO 2004). Grade zero (0) means muscle strength and sensibility preserved; grade 1 means muscle strength decreased without visible impairment and/or sensibility altered; and grade 2 means visible deficiencies caused by leprosy: inflammatory and anatomical alterations in the eyes and muscle atrophy in hands and feet (Brazil 2016).

SALSA - Screening of Activity Limitation and Safety Awareness is a scale created by the WHO (SALSA 2004) and validated in Brazil for use to assess the limitation activity range, but according to the user's perception. It is composed of questions on daily activities, addressing mobility, self-care, work and dexterity. SALSA questions were elaborated in order to be used on all patients with peripheral neuropathies, including diabetes mellitus and leprosy (Brazil 2008, 2010). The score varies from 0 to 80, thus divided: 0-24, no limitation; 25-39, mild limitation; 40-49, moderate limitation; 50-59, severe limitation; and 60-80, highly severe limitation (SALSA 2004).

Social participation was assessed by the use of the Participation Scale recommended by the Ministry of Health (Brazil 2008). Through an interview, 18 items were addressed to assess the individuals' perception on the main aspects of life, allowing to quantify the restrictions experienced by people affected by leprosy, due either to disability or other stigmatizing issue. Results were interpreted as follows: 0-12, no restriction; 13-22, mild restriction; 23-32, moderate restriction; 33-52, severe restriction; and, 53-90, extreme restriction (Brazil 2008).

Correlations between quantitative variables were measured by means of the non-parametric Spearman's correlation coefficient [16], ranging from -1 to 1. Values closer to -1 indicate a negative or inverse relation between the variables; values closer to 1, a positive association; and values closer to 0, lack of correlation. Cohen (1988) suggests the following classification of correlation coefficient: 0.1 to 0.29 – low; 0.30 to 0.49 – moderate; and greater or equal to 0.50 – high.

As for qualitative variables, their associations were assessed by the chi-square test (Pagano & Gauvreau 2004). For the cases that at least 20% of the table's cells of expected values were less than 5, the Fisher's exact test was applied. All analyses

were carried out through the use of the Statistical Software SAS 9.4 and SPSS 22.

Results

A total of 210 subjects participated in this study; 114 of them (54.29%) were males, with mean age of 55.62 years (SD=15.37), varying from 15 to 90 years. In relation to the social status, 117 individuals (55.71%) had a partner. As for insertion in the labor market, 112 individuals (53.33%) had a job; 76 (36.19%) were retired; 10 (4.76%) were unemployed and 12 (5.72%) received benefits from Social Security; 136 individuals (64.76%) received family income of one to two minimum wages, and 69 (32.86%) had their own residence. Regarding education level, 127 individuals (60.48%) had elementary school, 22 (10.48%) were illiterate – 17 out of those 22 were elderly.

The prevalent classification of leprosy was the multibacillary form, with 148 (70.48%) cases. In assessing clinical conditions, 153 individuals (72.86%) reported some health problem, and the most frequent were hypertension 46 (30.06%) and diabetes 37 (24.18%).

Most individuals, 107 (50.95%), reported mild to moderate pain, whereas 57 (27.14%) indicated intense or maximum pain. Regarding chemical dependence, the greater percentage was observed in alcohol use, 49 individuals (23.33%), and regarding cigarette consumption, the percentage was lower, 39 individuals (18.57%).

It can be observed in Table 1 that 156 individuals (74.29%) presented physical disability (grade 1 and grade 2). Regarding the SALSA scale scoring for activity limitation, the average was 32.05 (SD=12.78), considered mild, ranging from 17 (no disability) to 76 (very severe limitation). Most people, 127 individuals (60.48%), presented some level of limitation (score \geq 25), and in 27 (12.86%) its grade was severe and very severe.

Table 1 : Distribution of categorical variables for physical disability level (DL-WHO), classification of the Screening of Activity Limitation and Safety Awareness score, and restriction to the social participation of people after leprosy drug discharge from 2004 to 2013 (n=210). Vale do Paraíba Paulista, 2015.

Variables	n	%
Disability grade WHO 0	54	25.71
Disability grade WHO 1	68	32.38
Disability grade WHO 2	88	41.91
Activity Limitation		
No limitation (0 to 24)	83	39.52
Mild limitation (25 to 39)	73	34.76
Moderate limitation (40 to 49)	27	12.86
Severe limitation (50 a 59)	22	10.48
Extreme limitation (60 to 80)	5	2.38
Social Participation Restriction		
No restriction (01 to 12)	131	62.38
Mild restriction (13 to 22)	41	19.52
Moderate restriction (23 to 32)	19	9.05
Severe restriction (33 to 52)	16	7.62
Extreme restriction (53 to 90)	3	1.43

In relation to social participation, the average score was 12.80 (SD=12.55), considered a non-significant restriction, ranging from 0 to extreme-maximum restriction up to 60. Among the individuals who had restriction in social participation, mild restriction prevailed, with 41 individuals (19.52%); however, it was possible to observe an expressive number of people with severe and extreme restriction: 19 individuals (9.05%).

The association between activity limitation and socio-demographic and clinical characteristics of the individuals brought out some significant data (Table 2). A mild / moderate activity limitation was associated with low education level, multibacillary leprosy and the presence of pain. Individuals wearing adapted shoes had predominantly either a mild/moderate activity

limitation or severe / very severe limitation. It seems obvious that a strong association between physical disability and activity limitation is to be expected in the results. In fact, most of the individuals with physical disability grade 2, 67 individuals (76.14%) presented activity limitation from mild to very severe. However, 21 individuals (23.86%) with more severe disabilities did not present any limitation in their activities. Although not statistically significant, women presented less severe physical disability in comparison with men; however, most of them 127 (60.48%) had activity limitation. The 60+ age group and those that have reported income less than three minimum wage presented mild / moderate activity limitation.

When the variable restriction to social participation was associated with socio-demographic

Table 2 : Association between categorical variables for sociodemographic and clinical characteristics and the classification of the Screening of Activity Limitation and Safety Awareness (SALSA) score of people after leprosy drug discharge from 2004 to 2013 (n=210). Vale do Paraíba Paulista, 2015.

Variable	Salsa categorized scores						p-value
	No limitation		Mild/ moderate		Severe/ very severe		
	n	%	n	%	N	%	
Education level							0.0091*
Illiterate	4	18.18	13	59.09	5	22.73	
Elementary School	43	33.86	67	52.76	17	13.39	
High School	29	61.70	14	29.79	4	8.51	
College Degree	7	50.00	6	42.86	1	7.14	
Classification							0.0123*
Paucibacillary	31	50.00	29	46.77	2	3.23	
Multibacillary	52	35.14	71	47.97	25	16.89	
Presence of pain***							<0.0001*
No pain	29	63.04	16	34.78	1	2.17	
Mild and moderate	45	42.06	50	46.73	12	11.21	
Severe or maximum	9	15.79	34	59.65	14	24.56	
Wearing adapted shoes							0.0191*
Yes	5	20.00	13	52.00	7	28.00	
No	78	42.16	87	47.03	20	10.81	
Higher grade attributed in the post discharge							<0.0001*
0	37	68.52	17	31.48	0	0.00	
1	25	36.76	33	48.53	10	14.71	
2	21	23.86	50	56.82	17	19.32	
Gender							0.0550*
Male	53	46.49	50	43.86	11	9.65	
Female	30	31.25	50	52.08	16	16.67	
Age group							0.0880*
15 to 39	20	58.82	9	26.47	5	14.71	
40 to 59	32	38.10	42	50.00	10	11.90	
60+	31	33.70	49	53.26	12	13.04	
Family income***							0.4932**
Less than one minimum wage	3	27.27	6	54.55	2	18.18	
One to two minimum wages	50	36.76	67	49.26	19	13.97	
Three or more minimum wages	30	47.62	27	42.86	6	9.52	

*p-value obtained through chi-squared test.

**p-value obtained through Fisher's exact test.

***cat. = categorized

Table 3 : Association of categorical variables for sociodemographic and clinical characteristics with the restriction of social participation of people after leprosy drug discharge from 2004 to 2013 (n=210). Vale do Paraíba Paulista, 2015.

Variable	Social participation Salsa categorized scores						p-value
	No restriction		Mild/moderate		Severe & extreme		
	n	%	n	%	N	%	
Family income cat***							0.0180**
Less than one minimum wage	4	36.36	3	27.27	4	36.36	
One to two minimum wages	81	59.56	44	32.35	11	8.09	
Three or more minimum wages	46	73.02	13	20.63	4	6.35	
Presence of pain cat***							< 0.0001*
No pain	38	82.61	8	17.39	0	0.00	
Mild and moderate	72	67.29	26	24.30	9	8.41	
Severe or maximum	21	36.84	26	45.61	10	17.54	
Higher grade attributed in the post discharge							0.0088*
0	44	81.48	8	14.81	2	3.70	
1	37	54.41	21	30.88	10	14.71	
2	50	56.82	31	35.23	7	7.95	
Sex							0.1989*
Male	76	66.67	31	27.19	7	6.14	
Female	55	57.29	29	30.21	12	12.50	
Age group							0.1095*
15 to 39	22	64.71	8	23.53	4	11.76	
40 to 59	47	55.95	25	29.76	12	14.29	
60+	62	67.39	27	29.35	3	3.26	
Education level cat***							0.1208**
Illiterate	15	68.18	7	31.82	0	0.00	
Elementary School	72	56.69	38	29.92	17	13.39	
High School	33	70.21	13	27.66	1	2.13	
College Degree	11	78.57	2	14.29	1	7.14	
Classification							0.0649*
Paucibacillary	46	74.19	13	20.97	3	4.84	
Multibacillary	85	57.43	47	31.76	16	10.81	
Alcoholic consumption							0.0752*
Yes	37	75.51	8	16.33	4	8.16	
No	94	58.39	52	32.30	15	9.32	
Smoking							0.8836*
Yes	23	58.97	12	30.77	4	10.26	
No	108	63.16	48	28.07	15	8.77	

*p-value obtained through chi-squared test. *p-value obtained through Fisher's exact test. ***cat=categorized

and clinical characteristics (Table 3), results showed that the lower the family income, the greater the restriction in social participation. Curiously, individuals with severe-extreme restriction in social participation were those who had physical disability grade 1, whereas individuals with physical disability grade 2 presented mild/moderate restriction as the most prevalent. Among those that had severe or maximum pain, the restriction ranged from mild to extreme.

We observed better level of social participation among older people, whereas the age group from 40 to 59 years had a significant percentage of severe and extreme levels of restriction. Also among youths there was an expressive number with restriction in social participation 12 individuals (35.29%). Subjects belonging to the most frequent education level (elementary) were associated with mild/moderate restriction in social participation; 17 of them (13.39%) reached severe/extreme levels. Among people diagnosed as multibacillary leprosy the restriction grade in social participation ranged from mild/moderate (31.76%) to severe/extreme (10.81%).

The measurement of correlation between categorical variables activity limitation and restriction in social participation (Spearman's coefficient) showed a linear positive and strong correlation ($r=0.5798$; $p<0.0001$) between these variables.

Discussion

Globally the number of leprosy cases registered at end of 2016 was 171,948 with prevalence rate of 0.23 per 10,000 population, a decrease from that in 2015. The new case detection in the year, however, was 214,783, a marginal increase compared to 2015. These global figures are based on the reports filed by 143 countries from different regions of the world. What makes these figures incomplete is that approximately 17

countries from the African region, 24 countries from the Americas, and 2 countries from the southeast Asian region failed to send their data on leprosy (Rao & Suneetha 2018). It is significant to note that very little information is published about quality of life after the leprosy cases are released after successful completion of treatment.

Several studies describe the existence of some level of activity limitation among leprosy affected persons (LAP) who had overcome leprosy, this may range from 54% to 90% (Monteiro et al 2014, Nardi et al 2012, Reis et al 2013, Ikehara et al 2010). Others have observed that mild limitation was predominant, which is similar to the results from this study. Despite the less frequent percentage of people with severe and very severe limitation, it is worth mentioning the relevance of a more specialized view on care, through qualified professional team as well as the organization and provision of more complex services to attend the individual's real needs (Monteiro et al 2015, Nardi et al 2012, Reis et al 2013, Ikehara et al 2010).

Regarding social participation, it is necessary to know its range according to people's perception, in order to identify the interferences from the physical, cultural and social environments to support a proper intervention. Other studies found that the prevalent score for social participation was of no significant restriction; those who had some restriction presented mild to moderate levels (Bezerra et al 2015, Nardi et al 2011, Barbosa et al 2008).

Among the persons included in this study, the activity limitation ranged from mild to moderate, although the majority presented physical disability grades 1 and 2. This fact was even reinforced after the performance of the skin-neurological test, which showed that many individuals ignored their physical disabilities, mainly those related to sensitive and motor

impairment. Supposedly the lack of knowledge on their real condition may influence the self-perception on their activity limitation. Since the representations of the disease are not exclusive of medical knowledge, the meaning of the disease will depend on the subject's point of view (Batista et al 2014). However, studies performed in the Philippines and The Netherlands demonstrated that there is correlation between more severe physical disabilities and activity limitation (Slim et al 2010, Boku et al 2010).

In India, the National Leprosy Eradication Programme (NLEP) is the centrally sponsored health scheme of the Ministry of Health and Family Welfare, Government of India. Due to their efforts and with implementation of multidrug therapy, India has succeeded in reducing the prevalence rate of 57.8/10,000 in 1983 to "elimination as a public health problem" of less than 1/10,000 in December 2005 and even further down to 0.66/10,000 in 2016. Despite the successes, the fact remains that India continues to account for 60% of new cases reported globally each year and is among the 22 "global priority countries" that contribute 95% of world numbers of leprosy (NLEP 2015-16). It is understood that it has a large numbers of persons who have been successfully treated from disease but will have some residual problems.

It was evident that the low education level and the multibacillary form of leprosy both contribute to increase the limitation of activities and worse social participation. Both the lack of knowledge about the disease/self-care and the late diagnosis may contribute to the development of neural impairment, physical damages and social life decrease. Studies corroborate the results from this research, demonstrating that low educational level and the diagnosis in advanced forms of the disease may favor the activity limitation

and the impairment of social life (Nardi et al 2012, Ikehara et al 2010).

In another study, the presence of pain was reported by 54.7% participants – mostly in the back and knee - although not associated with activity limitation (Ikehara et al 2010). Nevertheless, in the present study, the report of pain was significant among the individuals, with expressive activity limitation; people who reported severe or maximum pain had also impairment in social participation.

Our study points that, although women present less physical disability when compared with men, their activity limitation and restricted social participation were predominant among them. Studies of Nardi et al (2012) have also demonstrated that women showed greater activity limitation, which is probably due to the fact that they seek health services more frequently than men do, thus leading to greater number of records. Having a wider range of activities – work, household, children – may also contribute to the self-awareness of their limitation; these hypotheses deserve deeper studies on gender health perceptions.

A study demonstrated that, as age increases, the activities limitation tends to increase as well, according to SALSA score, what is aligned with our findings (Ikehara et al 2010). A similar study showed that the higher prevalence of limitations on activities and socialization was found in the age group belonging to the productive phase of life, associated with the potential risk of disabilities due to the disease, which may lead to physical, social and emotional issues (Monteiro et al 2014).

Restriction in social participation suffers interference from family income, for individuals receiving less than three minimum wages have difficulty to participate of life in society, which

corroborates the findings of this research (Nardi et al 2011).

When comparing physical disability, activity limitation and social participation, it was expected that they would occur jointly: the more severe their grade of disability, the worse would be their performance in physical activities and social participation. However, in our study this correlation was not observed in all cases, as seen in the examples described below:

Case 1 – Man with severe grade of disability (foot drop, needing a foot-drop brace), with moderate activity limitation, had only mild restriction in social participation, due to the fact of being inserted in a self-care group with psychological monitoring, which allowed him to maintain a good familiar and social relationship, since the he also was a religious movement leader.

Case 2 – Woman without physical disability after treatment discharge, but presenting in the data collections every limitation and moderate restriction. According to her report, she was a hairdresser and the presence of spots on her face and forearms prevented her to work, especially during the summer, for being afraid that people would guess her diagnosis and repel her. For the same reason she visited the church only during winter, when her clothes would hide the “marks” left by leprosy. Such situation describes how strongly stigma and shame act on limiting a person's daily activities and social participation, despite the inexistence of a physical disability (Brazil 2008). A study showed that, under women's point of view, beauty is regarded almost as a socio cultural duty, constructed from the judgment of others, which demonstrates the dissatisfaction they may experience when living inside a body with different features from the ones socially accepted (Batista et al 2014).

Therefore, the assessment of a person's physical disability and the limitations of activity and social participation, in a qualitative approach, allow a broader view of each case and, as consequence, a more assertive following (Batista et al 2014).

The instruments used for assessing activity limitation, social participation and grade of disability of the person with leprosy are tools that allow health professionals to acquire a broader and deeper view on the real representation of the physical disability in people's lives. They also enable making care plans that go beyond physical condition, allowing an understanding of the real impact of the leprosy disease on the individuals' whole health after discharge from medication treatment (Bezerra et al 2015). The use of instruments to address these issues provided a more accurate grasp on the real impact of leprosy regarding all physical and psychosocial aspects individuals may have even after discharge from multidrug therapy. Such acknowledgement allows the development of actions that contemplate integral attention, providing a stronger bonding between user, health professionals and services and, at last, favoring the continuity of the assistance and a greater compliance in self-care.

Conclusion

The study showed that activity limitation was frequent among people after discharge from leprosy medication (60.48%), as well as moderate and severe physical disabilities (74.29%); on the other hand, social participation had not been so badly affected (19.52%).

In Brazil, the economic factor of the region influences the health policies aimed at endemic control, mainly in terms of the organization of services, in what concerns the qualification of the professionals, early diagnosis and appropriate treatment, control of the contacts, as well as the guarantee services at all levels of complexity, including physical rehabilitation.

Activity limitation was significantly associated with multibacillary leprosy, physical disabilities, low education level and the presence of pain. Low scores for social participation were statistically related to family income less than three minimum wages, visible physical damages and to the presence of severe pain. This study showed that physical disability itself does not necessarily imply in activity limitation or low social participation, since these variables depend also on the individual's own perception and cultural valuation of the disability. Therefore, one needs to aggregate qualitative studies that ultimately will assure the elaboration of more efficient and broader therapeutic plans for this special population.

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