Rev Bras Psiquiatr. 2011;33:323-331



ELSEVIER

RBP Psiquiatria
Revista Brasileira de Psiquiatria
Volume 33 • Número 4 • Dezembro/2011
Official Journal of the Brazilian Psychiatric Association



ORIGINAL ARTICLE

Concession of sickness benefit to social security beneficiaries due to mental disorders

Adriana Kelmer Siano,[1] Luiz Cláudio Ribeiro,[2] Mário Sérgio Ribeiro[1]

[1] Department of Medical Clinics, Universidade Federal de Juiz de Fora (UFJF), Juiz de Fora, MG, Brazil
[2] Department of Statistics, Universidade Federal de Juiz de Fora (UFJF), Juiz de Fora, MG, Brazil

Received on May 11, 2010; accepted on November 21, 2010 (ahead of print by SciELO; May 2011)

DESCRIPTORS:
Mental disorders;
Disabled persons;
Social security;
Diagnosis;
Evaluation of results of therapeutic interventions.

Abstract
Objective: Assess the odds of having an initial claim for statutory sickness benefit awarded (ascribed to mental disorder as the main registered diagnosis), in relation to institutional, clinical, sociodemographic and welfare factors in Juiz de Fora-MG, Brazil. *Method*: Two models of logistic regression, taking into account the categories of the medical examiners, were built with the aim of characterizing the relative weight of several variables affecting the medical conclusion. *Results*: The factors more strongly related to an award of benefit were claimants assessed by a physician without a specialization in psychiatry; with a diagnosis of psychosis; up to 29 years of age; with other non-psychiatric (musculoskeletal and cardiovascular) co-morbidities; registered with the national insurance system as employed; and male. *Discussion*: In both models, examiners with a specialization in psychiatry were associated with a lower likelihood of award of benefit. This suggests that examinations undertaken by doctors having a specialty related to the diagnosis supporting the sickness benefit claim are stricter than those undertaken by non-specialists. *Conclusion*: The results suggest that benefit award odds were associated with the specialty of the examiner, medical diagnosis, age, gender and claimant category.
©2011 Elsevier Editora Ltda. All rights reserved.

This article is derived from the Master Degree dissertation entitled: 'Influence of sociodemographic, clinical and institutional factors on the concession of benefits due to work disability, to claimants with mental disorders, by the medical examinations sector of the national insurance system (INSS) in Juiz de Fora-MG. The work was awarded the 'Profesor Ulysses Vianna Filho Prize' by the Brazilian Psychiatry Association, in 2009.

Corresponding author: Mário Sérgio Ribeiro, MD, PhD; Rua Severino Meireles, 325/902; 36025-040 Juiz de Fora, MG, Brazil;
Phone: (+55 32) 3211-3833; Email: mariosribeiro@acessa.com

1516-4446 ©2011 Elsevier Editora Ltda. All rights reserved.

DESCRITORES:
Transtornos mentais;
Pessoas com deficiência;
Previdência social;
Diagnóstico;
Avaliação de resultado de intervenções terapêuticas.

Chance de deferimento de requerimentos de auxílio-doença a segurados do Instituto Nacional do Seguro Social com transtornos mentais

Resumo
Objetivo: Avaliar a chance de deferimento em relação a fatores institucionais, clínicos, sociodemográficos e previdenciários em exames periciais iniciais de requerentes de auxílio-doença com registro de algum transtorno mental como diagnóstico principal em Juiz de Fora-MG. *Método*: Considerando as categorias de peritos médicos avaliadores, foram construídos dois modelos de regressão logística buscando caracterizar o peso relativo de diversas variáveis sobre a conclusão médico-pericial. *Resultados*: Os fatores que se mostraram fortemente associados a maior chance de deferimento foram: segurado avaliado por perito médico sem especialidade em psiquiatria; com diagnóstico de psicoses; na faixa etária de até 29 anos de idade; com outras comorbidades clínicas que não as psiquiátricas, osteomusculares e cardiovasculares; vinculado ao INSS como empregado; e do sexo masculino. *Discussão*: Nos dois modelos estudados, os peritos médicos especialistas em psiquiatria se associaram a menor chance de deferimento. Isto sugere que profissionais especializados na área relativa ao diagnóstico dos segurados sejam mais rigorosos em suas avaliações periciais que os peritos não especialistas. *Conclusão*: Os resultados sugerem que a chance de deferimento esteve associada à especialidade do perito médico examinador, ao diagnóstico, idade, sexo e categoria de segurado.
©2011 Elsevier Editora Ltda. Todos os direitos reservados.

Introduction

Clearly conceived to act as an insurance system,[1] sickness benefit is a welfare/cash benefit paid by the Brazilian National Insurance Institute (*Instituto Nacional do Seguro Social,* INSS) to those who, because of a health problem, are temporarily incapable of performing their work activities — *sine qua non* this being the deciding condition for claimants to have their benefit claim awarded.[1-3] The last few decades have witnessed a significant rise in the number of work disability-related sickness benefits awarded, with the consequent economic impact on the country.[4,5] Although not one quantitative study on this problem has been found, according to INSS data, 575,742 instances of sickness benefit were awarded in 1988, a figure which increased to 1,860,695 in 2005 and 2,188,671 in 2006.[6,7]

As from 2005, the INSS implemented administrative changes that should reduce the awarding of sickness benefits[8]: (1) implementation of the office of career INSS medical examiner, with the public selection of three thousand doctors, aiming to replace provisional, *ad hoc* and fee-for-services examiners; (2) creation of the Estimated Insurance Coverage (*Cobertura Previdenciária Estimada,* COPES), which aims to reduce waiting lists by elimination of intermediate medical examinations and through the establishment of deadlines for payment of benefits, according to the expected length of time necessary for the claimant to be deemed fit to work again; (3) the creation of the Postponement Request (*Pedido de Prorrogação,* PP), which allows the claimant to request longer recovery periods. In spite of all these changes, the number of instances of sickness benefit awarded in 2007 and 2008 was still high: 1,825,508 and 1,806,727, respectively.[7]

Research on the number and cost of work disability-related benefits is not an exclusively Brazilian phenomenon,[9-13] and studies seeking associated factors can be found in the international literature.[3-5,14-17] As for the clinical implications that may justify classification as 'unfit for work', some studies have pointed to the relevance of the following diagnostic categories: musculoskeletal, cardiovascular and mental disorders.[3,11,15-18]

The World Health Organization (WHO) has highlighted the economic impact of mental disorders, and the need for more research into their high indirect costs, which are due to the fall in productivity resulting from the prolonged spells of disability that these disorders entail.[19] Prince et al. reported some 2005 WHO data, which showed that neurological/psychiatric disorders account for 31.7% of all years lived with disability.[20]

Other studies have highlighted that, because of the subjective aspects involved, mental disorders represent one of the most complex situations dealt with by experts working with incapacity claims.[2,21-23] This situation may not only accentuate conflicts as a result of a diversity of interpretation, but final decisions on work disability may be equivocal too. The increase in the number of claimants with a registered mental disorder as their main diagnosis at the initial medical examination,[3] may lead to the possibility of inadequate granting of benefits. The direct costs (related to the payment of the benefits) and the indirect ones (due to the individual's having to withdraw from the labor market) justify the need to assess factors associated with inequalities in the awarding of benefit.

The aim of this study was to assess the odds of having an initial claim for statutory sickness benefit awarded (where a mental disorder was registered as the main diagnosis at the initial medical examination), in relation to institutional, clinical, sociodemographic and welfare factors. Establishing these factors is likely to make a substantial contribution to the possibility of reducing excessive grants of benefit.

Method

This retrospective study searched a databank provided by the Brazilian National Insurance Information and Technology Administration (*Empresa de Tecnologia e Informações da Previdência Social*, DATAPREV), which contains institutional, sociodemographic, clinical and welfare variables concerning the sickness benefits granted after initial medical examinations undertaken in two agencies of the Juiz de Fora INSS Executive Management (*Gerência Executiva de Juiz de Fora*, Gex/JF), between July 2004 and December 2006. The Largo do Riachuelo and São Dimas agencies may be considered representative of Brazilian agencies of medium-sized cities; besides, they have the advantage of having been digitalized before the period analyzed.

As described elsewhere,[8,24] all medical examinations having, as their main diagnosis, a group F condition (mental and behavioral disorders) as listed in the tenth edition of the International Classification of Diseases (ICD-X), were considered in this study.

Taking into account the changes in welfare legislation and the categories of the medical examiners – related to their professional links to the INSS – the assessed period was subdivided thus: (1) from July 2004 to July 2005, comprising the 13 study months prior to the implementation of COPES, involving INSS examiners admitted before 2005 ('old examiners'), those admitted after 2005 ('recent examiners')* and *ad hoc*/fee-for-services examiners; (2) from August 2005 to November 2005, the first four months after implementation of COPES, including 'old examiners', 'recent examiners' and *ad hoc*/fee-for-services examiners; (3) from December 2005 to April 2006, the final five months of COPES, prior to the implementation of PP, involving 'old examiners' and 'recent examiners'; and (4) from May 2006 to December 2006, encompassing the eight study months after the implementation of PP, with 'old examiners' and 'recent examiners'.

For comparison of the three core institutional variables of this study — medical examiner category, INSS agency and study period — 'old examiners' were considered as the typical examiner group, because it was the only one undertaking examinations throughout the study period. The Largo do Riachuelo INSS agency, whose clientele is composed of Juiz de Fora residents, was chosen as the typical INSS agency. Because it antedated changes in the legislation and in the composition of the INSS examiner staff, the first period studied was considered to be the typical one.

The 11,236 registers of the databank were statistically analyzed with SPSS 14.0 software (series number 9656438). Descriptive and exploratory analyses, bivariate analyses[8,24] and result stratification showed an interactive effect among the three core institutional variables. These interactions were considered in the logistic regression models used to show the relative weight of the institutional, sociodemographic, clinical and welfare variables on the outcome variable, that is, 'the outcome of the benefit-related medical examination'. Once the *ad hoc*/fee-for-services examiners were present, only during the first and second periods, two models were defined in order to represent each of the realities identified: Model 1, to represent the first two study periods and the three categories of medical examiners; and Model 2, applicable to all four periods but excluding the examinations performed by the *ad hoc*/fee-for-services examiners.

The logistic regression models were built by the Enter method, including: (1) the core institutional variables (medical examiner category, INSS agency and study period); (2) the medical examiner's specialty; (3) sociodemographic variables (age range and gender); (4) clinical variables (main and secondary diagnoses); and (5) welfare-related variables (claimant category and the median** of their INSS affiliation and contribution period).

Each variable used in the two models was included in an *a priori* order related to the expected weight of its influence on 'the outcome of the benefit-related medical examination', according to the work experience of the main author of this study on welfarerelated medical examinations: category of medical examiner → INSS agency → study period → specialty of the medical examiner → main diagnosis → age range → secondary diagnosis → category of claimant → gender → contribution period → affiliation period.

In an attempt to represent the reality observed in the results of the stratified analyses concerning the benefit-related medical conclusion and regarding the variables, three interactions among the institutional variables were included in the models: 'examiner category versus INSS agency', 'examiner category versus period', and 'INSS agency versus period'. These interactions were included in the models immediately after the isolated institutional variables***.

It was previously established that the institutional variables would be included and considered in the models, regardless of their statistical significance on bivariate analyses and on the final models. For the other variables, we used, as the entry criterion in each model, the classical statistical significance on bivariate analyses ($p \leq 0.05$ on Pearson's chi-square test); and their retention in the final models required a p-value ≤ 0.05 in each model.

For the institutional variables, the categories considered typical (the 'old examiners', the Largo do Riachuelo INSS agency, and the 'first period') were taken as reference categories in each model. For the variable 'specialization of the medical examiner', the reference category was 'psychiatry', as the medical specialty best trained to deal with mental disorders. For the other variables, the reference category was considered that which a higher awarding rate on bivariate analysis, that is: (1) giving 'psychoses' as the main diagnosis; (2) age range 'up to 29 years'; (3) 'other clinical pictures' as secondary diagnosis; (4) 'employed' as claimant category;

* Some of the 'new examiners' started their activities in the Gex/JF in July 2005, just before COPES implementation.

** Once the analysis of these variables showed a positive asymmetric distribution of its values, we opted for the use of the median as reference, because it better represented the trends for affiliation and contribution times.

*** If these interactions among the institutional variables had not been added to the models, we would have lost the opportunity of assessing the weight of the observed results on the stratifications For example: had we taken only the variables 'examiner category' and 'place of examination' into account, we would have been limited to assessing the interaction between the São Dimas INSS agency and 'old examiners' (reference category) but not the interaction with the other examiners, who, in turn, would have been assessed only in their interaction with the Largo do Riachuelo INSS agency (reference category).

(5) 'male' gender; (6) 'above median' contribution time; and (7) 'above median' affiliation time.

The study was submitted to and approved by the Research Ethics Committee of the Universidade Federal de Juiz de Fora (CEP/UFJF, protocol number 041/2007). There was no conflict of interest in the development of this study.

Results

Table 1 presents a description of the group of medical examinations included in this study and the results of bivariate analysis in relation to the three core institutional variables considered (medical examiner category, INSS agency and study period), showing only the six variables that met inclusion criteria for the two models.

The final models (1 and 2) were composed of the following variables and interactions: examiner category, INSS agency, study period, examiner category vs. INSS agency, examiner category vs. period, INSS agency vs. period, examiner specialty, main diagnosis, age range, secondary diagnosis, claimant category and gender.

Table 2 shows claimants seen at the São Dimas INSS agency by *ad hoc* /fee-for-services examiners during the second study period; by examiners from non-psychiatric specialties; and by examiners not registered as specialists in the Disability Benefit Management System (*Sistema de Administração de Benefícios por Incapacidade*, SABI) were significantly more likely to be awarded a benefit (OR ranging from 1.82 to 4.58). The other variable categories included in this model, which resulted in significant difference were associated with lower odds of benefit concession, with OR ranging from 0.04 (with anxiety disorders as main diagnosis) and 0.68 (*ad hoc*/ fee-for-services examiners).

Likewise, in Model 2 (Table 3), the circumstances associated with a higher likelihood of award of benefit, with OR ranging from and 4.95, were nearly the same: São Dimas INSS agency; second study period; examiners from other specialties different from psychiatry; and examiners without a specialty register. The other variable categories showing a significant difference on Model 2 were associated with a lower likelihood of award, with OR ranging from 0.13 (anxiety disorders as main diagnosis) to 0.82 (age range of 30-49 years).

Discussion

The likelihood of benefits being awarded was significantly higher for males and for the 'up to 29 years' age range. Although no evidence for an association between gender and the awarding of mental disorder-related sickness benefit has been found in the literature, the results for age are in accordance with Mycletun et al.,[12] who identified an interaction between younger age and awarding of benefits ascribed to mental disorders.

The 'employed' claimant category was strongly predictive of the awarding of sickness benefit, with higher odds than for the other INSS claimant categories. Actually, the legislation on benefitrelated medical examinations for the awarding of sickness benefit does not distinguish claimants based on their links to the INSS – neither by their period of affiliation nor by their contribution record – once the probation period is over. Otherwise, these results point to the possibility that the work status of sickness benefit claimants did influence the examiners' conclusions: medical complaints from claimants in other categories may not be valued as highly by the examiners as those manifested by traditionally employed claimants. On one hand, it is usually supposed by the medical INSS examiners that many claimants in other categories do not actually carry out the occupation stated, which could indicate that such claimants would be seeking alternative income sources, without being actually unfit for work. On the other hand, it is possible that the subjectivity involved in the examiners' conclusions[22] may be penalizing these claimants working in the informal labor market. The same dynamics may be occuring in the case of the significantly lower benefits granted to women: it is noteworthy that even though it is expected that women constitute the majority of 'home workers', since this difference was sustained in both models.

Taking the diagnosis of psychoses as reference, the odds in favour of granting benefit decreased in the following order: disorders due to the use of psychoactive drugs, minor mood disorders, other mental disorders and anxiety disorders. Okpaku et al. have reported that sickness benefit claimants diagnosed with psychoses or mood disorders were more likely to receive a benefit compared with those diagnosed with anxiety.[23] Scott et al. showed that mood disorders were more closely associated with disability than anxiety disorders and disorders related to the use of psychoactive substances, with even milder mood disorders being more disabling than anxiety disorders.[25] Such results indicate that the examiners are correctly acting as gatekeepers,[1] prioritizing access for claimants with more severe mental disorders.

As for comorbidities, Prince et al. highlighted the importance of mental disorders as risk factors for the development of transmissible and non-transmissible diseases, and as contributors to accidental and non-accidental damage; on the other hand, those authors stated that several clinical pathologies could increase the risk of mental disorders or prolong their episodes.[20] Moussavi et al. found significantly higher prevalence rates of depression among patients with chronic clinical diseases such as arthritis, angina and diabetes, with depression being associated with clinical deterioration.[26] Other studies have emphasized that co-ocurring clinical comorbidities and psychiatric comorbidities are more disabling than any clinical or psychiatric disease in without any comorbidity.[25,27,28] In accordance with this observation, our results showed that the absence of a comorbidity was significantly associated with a lower likelihood of benefit being granted, compared with the presence of any comorbidity.

Throughout its history, the performance of the INSS examiners has been influenced by sociopolitical factors that resulted in more or less severe tightening of the benefit award process. In the last few years, however, the progressive decrease in the number of awards suggests that more stringent criteria for the assessment of work disability have prevailed. Considering that in both models examiners with a specialization in psychiatry were responsible for granting a significantly lower number of benefits, our results suggest that examinations undertaken by doctors with a specialization related to the diagnosis supporting the sickness benefit claim are stricter than those undertaken by non-specialists.

The results indicate that the fall in awarding rates from the first to the fourth period (see Table 1) cannot be solely attributed to the taking on of the 'recent examiners' or to

Table 1 Description of the group and bivariate analysis considering the three key institutional variables

Variable	INSS agency		Medical examiner category			Study period				Total
	Riachuelo	S. Dimas	Old	Recent	*Ad hoc*	1st	2nd	3rd	4th	
Comorbidities recorded	p < 0.001			p < 0.001			p < 0.001			
Psychiatric	36.4	28.5	24.1	46.8	25.7	24.5	37.3	35.1	40.0	33.6
Musculoskeletal	17.7	21.0	23.7	13.5	17.7	21.1	17.8	20.3	16.3	18.9
Cardiovascular	29.5	30.5	32.3	25.6	35.1	32.6	27.8	29.6	28.2	29.8
Other clinical comorbidities	16.4	20.0	19.9	14.1	21.5	21.8	17.2	15.0	15.5	17.7
Total records (n)	**1.755**	**954**	**1.307**	**1.114**	**288**	**857**	**400**	**533**	**901**	**2.709**
Diagnoses main	p < 0.001			p < 0.001			p < 0.001			
Disorders due to use of psychoactive drugs	6.1	5.9	6.3	5.5	7.6	6.6	6.0	5.2	6.0	6.0
Psychoses	4.6	3.6	4.0	4.0	7.2	5.8	4.5	3.4	3.6	4.3
Major mood disorders	15.1	8.4	11.3	13.4	15.2	11.7	13.6	13.4	12.5	12.6
Minor mood disorders	38.1	41.9	42.9	37.3	34.6	37.7	43.1	41.3	38.8	39.6
Anxiety disorders	33.1	36.9	33.2	36.1	32.5	35.4	30.8	34.0	35.4	34.5
Other mental disorders	2.9	3.3	2.3	3.8	2.9	2.9	2.0	2.7	3.6	3.1
Gender	p = 0.003			p = 0.1			p = 0.1			
Female	65.8	68.5	66.2	67.7	64.6	65.1	66.6	68.4	67.0	66.8
Male	34.2	31.5	33.8	32.3	35.4	34.9	33.4	31.6	33.0	33.2
Age-group	p = 0.6			p = 0.4			p < 0.001			
Up to 29 years	9.6	10.3	9.3	10.2	11.5	10.4	10.9	10.3	9.0	9.9
From 30 to 39 years	21.4	22.1	21.5	21.4	24.1	23.2	24.2	20.6	20.5	21.7
From 40 to 49 years	38.7	38.6	39.6	38.4	35.4	38.6	39.2	36.9	39.4	38.7
From 50 to 59 years	26.0	25.0	25.2	26.0	26.0	24.1	22.6	27.7	26.5	25.6
Over 59 years	4.2	4.1	4.4	4.0	3.0	3.6	3.1	4.5	4.6	4.1
Claimant category	p < 0.001			p < 0.001			p < 0.001			
Unemployed	32.7	27.5	30.2	31.7	28.6	30.0	29.1	30.3	32.0	30.7
Employee	13.8	15.4	14.4	13.6	18.2	17.6	18.2	14.0	11.4	14.4
Household employee	9.7	10.1	9.3	10.6	8.4	7.4	10.4	11.7	10.3	9.8
Self-employed	40.3	42.8	42.3	40.0	42.5	42.4	39.1	40.6	41.4	41.2
Other categories	3.6	4.3	3.8	4.1	2.4	2.6	3.3	3.4	5.0	3.8
Medical examiner's specialty	p < 0.001			p < 0.001			p < 0.001			
Psychiatrist examiner	9.4	0	9.4	3.6	0	5.0	3.7	7.5	6.3	5.9
Another specialty	48.1	9.9	22.3	46.0	28.2	34.1	49.6	35.3	28.2	33.9
Non-specified specialty	42.6	90.1	68.3	50.4	71.8	60.9	46.7	57.2	65.4	60.2
Medical examination conclusion	p = 0.7			p < 0.001			p < 0.001			
Incapable	63.9	63.6	71.8	53.8	77.1	81.9	76.6	61.2	49.5	63.8
Capable	36.1	36.4	28.2	46.2	22.9	18.1	23.4	38.8	50.5	36.2
Total records (n)	7.058	4.178	5.014	5.264	958	2.961	1.421	2.229	4.625	11.236

Table 2 Model 1*: odds ratio for benefit concession, with confidence intervals and p-values for the different factors, during the first and second periods, with *ad hoc*/fee-for-services examiners

Variable/interaction	Odds ratio	Confidence interval	p-value
Old examiners	1		
Recent examiners	1.3439	0.82-2.20	0.2384
Ad hoc/fee-for-services examiners	0.6795	0.52-0.89	0.0049
Largo do Riachuelo agency	1		
São Dimas Agency	4.5798	3.20-6.55	< 0.0001
Before estimated insurance coverage (copes) implementation – 1st period	1		
Between COPES and the Postponement Request (PP) – 2nd period	1.1257	0.82-1.55	0.4696
Old examiners in the Largo do Riachuelo agency	1		
Recent examiners in the São Dimas Agency	0.1703	0.10-0.29	< 0.0001
Ad hoc/fee-for-services examiners in the São Dimas Agency	0.208	0.13-0.35	< 0.0001
Old examiners in the 1st period	1		
Recent examiners in the 2nd period	0.4746	0.27-0.82	< 0.0001
Ad hoc/fee-for-services examiners in the 2nd period	3.1317	1.52-6.45	0.002
Largo do Riachuelo agency in the 1st period	1		
São Dimas Agency in the 2nd period	0.4265	0.26-0.69	0.0006
Psychiatrist examiner	1		
Examiner with another specialty	1.8235	1.28-2.60	0.0009
Examiner with non-specified specialty	2.0712	1.41-3.04	0.0002
Psychoses	1		
Disorders due to use of psychoactive drugs	0.1144	0.04-0.34	0.0001
Major mood disorders	0.3874	0.13-1.13	0.0826
Minor mood disorders	0.0797	0.03-0.22	< 0.0001
Anxiety disorders	0.0346	0.01-0.10	< 0.0001
Other mental disorders	0.0423	0.01-0.13	< 0.0001
Up to 29 years of age	1		
From 30 to 49 years of age	0.5733	0.41-0.81	0.0017
Over 50 years of age	0.4509	0.31-0.66	< 0.0001
Other clinical co-morbidities	1		
Without a record of comorbidities	0.4182	0.27-0.65	0.0001
Psychiatric comorbidities	1.0579	0.61-1.84	0.8425
Musculoskeletal comorbidities	0.6198	0.36-1.07	0.0855
Cardiovascular comorbidities	0.6527	0.39-1.08	0.0984
Employee	1		
Unemployed	0.2357	0.17-0.33	< 0.0001
Household employee	0.2737	0.18-0.41	< 0.0001
Self-employed and other categories	0.2107	0.15-0.29	< 0.0001
Male gender	1		
Female gender	0.4964	0.40-0.61	< 0.0001

* The logistic regression models were built by the Enter method.

the introduction of normative changes. It' is possible that changes which have occurred in the past few years in the INSS disability-related medical examinations sector have resulted in concrete changes in a practice hitherto consolidated, one that lasted until 2005.

In spite of the impact of these changes on the Welfare State — a reduction in disability benefit concessions, after years of progressive increases — such changes challenge the conceptions of claimants, who still file a sickness benefit claim for reasons that more often than not extrapolate the relationship between disease and ability to work. Although the medical examiner is frequently seen by claimants as a professional whose job is to deny a benefit, it is necessary to acknowledge that, once the legal requirements for an award of sickness benefit are met, awarding the benefit is less complex than denying it, since: (1) in denying the claim, the examiner is exposed to

Table 3 Model 2*: odds ratio for benefit concession, with confidence interval and p-values, for the several factors in the four periods without *ad-hoc*/fee-for-services examiners

Variable/interaction	Odds ratio	Confidence interval	p-value
Old examiners	1		
Recent examiners	1.1755	0.76-1.81	0.4632
Largo do Riachuelo agency	1		
São Dimas Agency	4.9519	3.58-6.85	< 0.0001
Before estimated insurance coverage (copes) implementation – 1st period	1		
Between COPES and the Postponement Request (PP) with *ad hoc*/fee-for-services examiners – 2nd period	1.6979	1.23-2.34	0.0012
Between COPES and PP without *ad hoc*/fee-for-services examiners – 3rd period	0.7233	0.56-0.93	0.011
After PP implementation – 4th period	0.3514	0.28-0.44	< 0.0001
Old examiners in the Largo do Riachuelo agency	1		
Recent examiners in the São Dimas Agency	0.7039	0.57-0.87	0.0015
Old examiners in the 1st period	1		
Recent examiners in the 2nd period	0.3003	0.18-0.51	< 0.0001
Recent examiners in the 3rd period	0.4115	0.25-0.67	0.0003
Recent examiners in the 4th period	0.5492	0.35-0.87	0.0106
Largo do Riachuelo agency in the 1st period	1		
São Dimas Agency in the 2nd period	0.179	0.12-0.28	< 0.0001
São Dimas Agency in the 3rd period	0.1917	0.13-0.28	< 0.0001
São Dimas Agency in the 4th period	0.2386	0.17-0.34	< 0.0001
Psychiatrist examiner	1		
Examiner with another specialty	2.6663	2.17-3.27	< 0.0001
Examiner with non-specified specialty	1.8496	1.51-2.26	< 0.0001
Psychoses	1		
Disorders due to use of psychoactive drugs	0.3988	0.27-0.59	< 0.0001
Major mood disorders	0.7545	0.53-1.09	0.1284
Minor mood disorders	0.1873	0.13-0.26	< 0.0001
Anxiety disorders	0.1255	0.09-0.18	< 0.0001
Other mental disorders	0.1728	0.12-0.26	< 0.0001
Up to 29 years of age	1		
From 30 to 49 years of age	0.8203	0.69-0.98	0.0249
Over 50 years of age	0.7166	0.59-0.87	0.0005
Other clinical comorbidities	1		
Without a record of comorbidities	0.4405	0.34-0.58	< 0.0001
Psychiatric comorbidities	0.8509	0.62-1.17	0.3156
Musculoskeletal comorbidities	0.514	0.37-0.72	0.0001
Cardiovascular comorbidities	0.6195	0.45-0.85	0.003
Employee	1		
Unemployed	0.3111	0.26-0.37	< 0.0001
Household employee	0.2515	0.21-0.31	< 0.0001
Self-employed and other categories	0.2697	0.23-0.32	< 0.0001
Male gender	1		
Female gender	0.6241	0.56-0.70	< 0.0001

* The logistic regression models were developed by the Enter method.

the various consequences of the claimant's non-conformism; (2) the examiner, as a fellow human being, is fully aware of the difficulties that may arise because of the absence of an expected income source,[29] more often than not the only income source for that citizen and their family; and (3) undoubtedly — often through personal experience — the examiners recognize that in some cases, working conditions exact a toll, and may threaten the workers' health. Notwithstanding, according to the welfare legislation, such considerations are not the subject of the medical examination, the latter focusing on the analysis of the work disability, based on technical, administrative and legal norms.[3,8,24] Such aspects grow in complexity in an environment in which fraud is potentially present. Examiners try to deal with their doubts every day, faced with a succession of painstaking assessments that require immediate decisions to be reached, in a short space of time.

Because the national insurance system frequently faces labor and social demands, and is held responsible for ills of different origins, we consider that this institution should: (1) liaise with competent organs to remedy the shortage of specialized care and/or the inadequacy of working conditions, thus reducing the demand for welfare benefits; and (2) propose discussions concerning a labor and welfare legislation review, particularly of instruments that unjustly favor a minority, while failing to benefit citizens in need. Leaving the burden of rejecting those who do not meet the criteria which would grant access on medical grounds to the benefit sought on the shoulders of the medical examinations sector of the national insurance system is not appropriate, since it unduly favors some who are dishonest and fails to differentiate these from the others who believe that they are merely seeking their rights. Such rights, however, demand the observance of certain duties, which, in turn, must be the target of institutional control.

The main limitation of this study is the use of a secondary data bank. Even though a primary analysis of its consistence was performed, it is not possible to guarantee the thoroughness of its quality. The variables selected for the study were chosen by the authors, based on the work experience of the main author as a medical expert with the INSS. However, some of them (e.g. the indicators of previous benefit) had not been recorded for a large percentage of the registrations, which rendered their analysis unfeasible. The chosen method and the high number of registrations evaluated were adequate for an exploratory assessment of the factors associated with awarding of benefits.

Conclusion

The aim of this study was to assess the odds of having an initial claim for statutory sickness benefit awarded (ascribed to mental disorder as the main registered diagnosis on the initial medical examination), in relation to institutional, clinical, sociodemographic and welfare factors. Finding these factors is, in itself, a substantial contribution to the possibility of reducing the unduly granting of benefit.

The results of this study indicate that the odds in favour of the awarding of benefit were associated with the specialty of the examiner, medical diagnosis, age, gender and claimant category. As for the three core institutional variables evaluated here, the results suggest that they cannot be independently taken as predictors of different patterns of medical conclusion. Considering these results and the limitations exposed above, the authors suggest the undertaking of follow-up studies to further explore these findings in greater depth.

Acknowledgements

We thank our colleagues Marco Antônio Aguirre de Souza and Aline Evangelista Santiago for their invaluable collaboration during the initial stages of the work that originated this article.

Disclosures

Adriana Kelmer Siano
Employment: Universidade Federal de Juiz de Fora (UFJF), Brazil.

Luiz Cláudio Ribeiro
Employment: Universidade Federal de Juiz de Fora (UFJF), Brazil.

Mário Sérgio Ribeiro
Employment: *Universidade Federal de Juiz de Fora (UFJF), Brazil.*

* Modest
** Significant
*** Significant: Amounts given to the author's institution or to a colleague for research in which the author has participation, not directly to the author. For more information, see Instructions for Authors.

References

1. Marasciulo ACE. Avaliação de desempenho do programa de benefícios por incapacidade do Instituto Nacional do Seguro Social, gerência de Florianópolis, SC, 2000-2002 [thesis]. São Paulo; 2004.
2. Gonzaga P. Perícia médica da previdência social. 4th ed. São Paulo: LTr; 2006.
3. Siano AK, Ribeiro LC, Santiago AE, Souza MAA, Ribeiro MS. Relevância dos transtornos mentais entre as perícias médicas de requerentes de Auxílio-doença na Gerência Executiva do Instituto Nacional do Seguro Social de Juiz de Fora - Minas Gerais. HU Revista. 2008;34(04):235-42.
4. Cechin J, Giambiagi F. O aumento das despesas do INSS com o Auxílio-doença. Boletim de Conjuntura do IPEA. Rio de Janeiro: IPEA; 2004. p.81-90.
5. Mora M. Auxílio-doença: contribuição para um diagnóstico. Boletim de Conjuntura do IPEA. Rio de Janeiro: IPEA; 2007. p.89-100.
6. Brasil. Anuário Estatístico da Previdência Social 2005 -Suplemento Histórico (1980-2005). Brasília: Ministério da Previdência Social / DATAPREV; 2005. p.56-8.
7. Brasil. Anuário Estatístico da Previdência Social 2008. Brasília: Ministério da Previdência Social / DATAPREV; 2008. p.19.
8. Siano AK, Ribeiro LC, Santiago AE, Ribeiro MS. Influência de Alterações Normativas da Previdência Social Sobre o Perfil de Concessão de Auxílio-doença Relativo a Transtornos Mentais. Aprovado para publicação na Revista Ciênc saúde coletiva. 2009. Available from: URL: http://www.abrasco.org.br/cienciaesaudecoletiva/artigos/artigo_int. php?id_artigo=2878
9. Elders LA, Burdorf A, Ory FG. Ethnic differences in disability risk between Dutch and Turkish scaffolders. J Occup Health. 2004;46(5):391-7.
10. Ford FM, Ford J. Non-attendance for Social Security medical examination: patients who cannot afford to get better? Occup Med (Lond). 2000;50(7):504-7.
11. Moncrieff J, Pomerleau J. Trends in sickness benefits in Great Britain and the contribution of mental disorders. J Public Health Med. 2000;22(1):59-67.
12. Mykletun A, Overland S, Dahl AA, Krokstad S, Bjerkeset O, Glozier N, Aarø LE, Prince M. A population-based cohort study of the effect of common mental disorders on disability pension awards. Am J Psychiatry. 2006;163(8):1412-8.
13. Shiels C, Gabbay MB, Ford FM. Patient factors associated with duration of certified sickness absence and transition to long-term incapacity. Br J Gen Pract. 2004;54(499): 86-91.

14. Quadagno J. Incentives to disability in federal disability insurance and supplemental security income. Clin Orthop Relat Res. 1997(336):11-7.
15. Boff BM, Leite DF, Azambuja MI. Morbidade subjacente à concessão de benefício por incapacidade temporária para o trabalho. Rev Saude Publica. 2002;36(3):337-42.
16. Sampaio RF, Silveira AM, Parreira VF, Makino AT, Mateo MM. Análise das aposentadorias por incapacidade permanente entre os trabalhadores da Universidade Federal de Minas Gerais no período de 1966 a 1999. Rev Assoc Med Bras. 2003;49(1): 60-6.
17. Silveira DBB, Monteiro MS. Morbidade entre trabalhadores de uma instituição de saúde. Saúde debate. 2004;28(68): 206-11.
18. Moura AAG, Carvalho EF, Silva NJC. Repercussão das doenças crônicas nãotransmissíveis na concessão de benefícios pela previdência social. Ciênc Saude Coletiva. 2007;12(6): 1661-72.
19. Organização Mundial da Saúde - OMS. Relatório sobre a saúde no mundo - 2001: Saúde Mental: nova concepção, nova esperança. Geneva; 2001.
20. Prince M, Patel V, Saxena S, Maj M, Maselko J, Phillips MR, Rahman A. No health without mental health. Lancet. 2007;370(9590):859-77.
21. Leo RJ, Del Regno P. Social security claims of psychiatric disability: Elements of case adjudication and the role of primary care physicians. Prim Care Companion J Clin Psychiatry. 2001;3(6):255-62.
22. Melo MPP, Assunção AÁ. A decisão pericial no âmbito da previdência social. Physis (Rio J). 2003;13(2):343-65.
23. Okpaku SO, Sibulkin AE, Schenzler C. Disability determinations for adults with mental disorders: Social Security Administration vs independent judgments. Am J Public Health. 1994;84(11):1791-5.
24. Siano AK, Ribeiro LC, Santiago AE, Ribeiro MS. Análise descritiva de exames periciais iniciais de segurados do Instituto Nacional do Seguro Social apresentando transtornos mentais. HU Revista. 2009;35(01):25-34.
25. Scott KM, McGee MA, Wells JE, Oakley Browne MA. Disability in Te Rau Hinengaro: the New Zealand Mental Health Survey. Aust N Z J Psychiatry. 2006;40(10):889-95.
26. Moussavi S, Chatterji S, Verdes E, Tandon A, Patel V, Ustun B. Depression, chronic diseases, and decrements in health: results from the World Health Surveys. Lancet. 2007;370(9590):851-8.
27. Glozier N. Mental ill health and fitness for work. Occup Environ Med. 2002;59(10):714-20.
28. Watkins KE, Wells KB, McLellan AT. Termination of social security benefits among Los Angeles recipients disabled by substance abuse. Psychiatr Serv. 1999;50(7):914-8.
29. Cassis I, Dupriez K, Burnand B, Vader JP. Quality of work incapacity assessment in the Swiss disability insurance system. Int J Qual Health Care. 1996;8(6):567-75.