

# The Impact of Restless Legs Syndrome on Various Dimensions of Life: Results of a Web-Based Patient Survey

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## INTRODUCTION

Restless Legs Syndrome (RLS) is a relatively common neurological disorder that is often unrecognized and misdiagnosed (Evidente and Adler, 1999; Milligan and Chesson, 2002). The condition is characterized by unpleasant sensations of the legs and an urge to move them for relief. Because these symptoms are intensified by inactivity, patients with RLS often have difficulty falling and staying asleep, resulting in reduced sleep duration and sleep quality as well as impairments in subsequent daytime performance. Long-term implications of RLS include psychological distress and diminished quality of life (Allen and Earley, 2001; Abetz et al., 2004; Allen et al., 2005).

## OBJECTIVE

The purpose of this study was to describe the impact of RLS on overall health status, sleep, psychological distress, work productivity, and other daily activities.

## METHODS

### Identification of Sample

A web-based survey was conducted within a multimillion-member panel of US adults.

Data collected February – May 2006.

Inclusion criteria:

- Aged  $\geq 18$  years
- Living in the US
- Responded "yes" to all 4 validated screening questions based on diagnostic criteria established by the RLS working group and the National Institutes of Health (Allen et al., 2003) as well as an additional question of frequency

- 1) Do you have, or have you sometimes experienced, recurrent, uncomfortable feelings or sensations in your legs while sitting or lying down?
- 2) Do you have, or have you sometimes experienced, a recurrent need or urge to move your legs while sitting or lying down?
- 3) Do these uncomfortable feelings or sensations, or urge to move, disappear/improve when you are active or moving around?
- 4) Are these uncomfortable feelings, or this urge to move, worse in the evening or at night, compared with the morning?
- 5) During the last 12 months, have these uncomfortable feelings or sensations in your legs, or the need to move your legs while sitting or lying down, happened to you on average for one or more nights/days per week?

### Impact Measured on Various Dimensions of Life

#### Symptom Severity

Patients were asked to rate the frequency and intensity of RLS symptoms during the past 12 months.

#### Health Status

- Medical Outcomes Study Short Form 12 Version 2 (SF-12 v2)
- Eight domains and two component scores
- Scored 0 to 100, lower scores indicate worse health status
- 0.5 SD has been viewed as a clinically important difference

#### Psychological Distress

- Center for Epidemiological Studies Depression Scale (CES-D)
- Scored 0 to 60, higher scores indicative of greater distress
- Scores greater than 15 are commonly considered indicative of depression or psychological distress (Radloff, 1977).
- Scores greater than 22 are considered indicative of severe distress.

#### Work Productivity/Activity

- Work Productivity and Activity Impairment – General Health Questionnaire (WPAI-GH).
- Four domains: absenteeism, presenteeism, work productivity loss, and activity impairment due to respondent's health.
- Work Limitations Questionnaire (WLQ).
- Four domains: time management, physical demands, mental-interpersonal demands, and output demands.
- WPAI and WLQ scored 0-100 with higher scores indicative of greater impairment.
- The WLQ also include an overall index score which provides an estimate of the percentage of productivity lost.

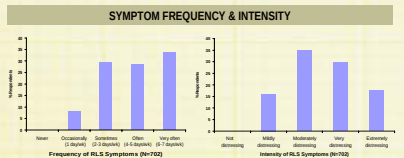
#### Sleep Quantity/Quality

- Medical Outcomes Study-Sleep Scale (MOS Sleep): 12 items
- Higher scores indicative of poorer sleep: disturbance, snoring, shortness of breath or headache, somnolence, sleep problems index II.
- Lower scores indicative of poorer sleep: adequacy, quantity, and optimal sleep.

#### ANCOVA Analysis

- Analysis of covariance (ANCOVA) models estimated for each health outcome including symptom severity (frequency, intensity and usual time of onset), age, gender and diagnostic status as additional predictors simultaneously.
- This tests whether frequency, intensity, and usual time of onset have an effect on the outcomes after removing the variance accounted for by the other variables.

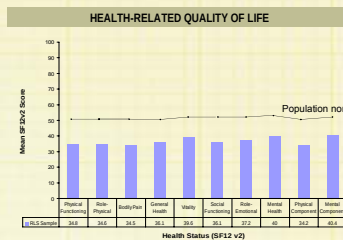
## RESULTS



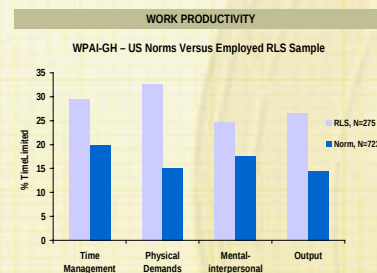
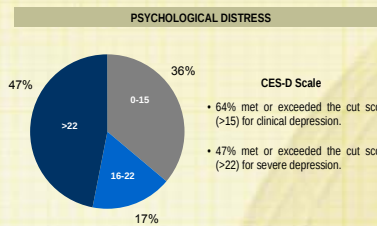
- Over 60% reported RLS symptoms at least 4-5 days per week
- Over 80% reported at least moderately distressing symptoms of RLS

| DEMOGRAPHICS                                   |                          |
|------------------------------------------------|--------------------------|
| <b>Table 1. Survey Sample Demographics</b>     |                          |
| Mean age (SD)                                  | N/702 (%)<br>54.8 (13.3) |
| <b>Gender</b>                                  |                          |
| Male                                           | 257 (36.6)               |
| Female                                         | 445 (63.4)               |
| <b>Race</b>                                    |                          |
| White                                          | 576 (82.1)               |
| Black/African American                         | 47 (6.7)                 |
| Hispanic                                       | 52 (7.4)                 |
| Other                                          | 16 (2.3)                 |
| Not answered                                   | 11 (1.6)                 |
| <b>Highest level of education</b>              |                          |
| High school or less                            | 131 (18.7)               |
| Some college or college degree                 | 444 (63.2)               |
| Some graduate work or graduate degree          | 127 (18.1)               |
| Currently employed (working for pay)           | 275 (39.2)               |
| <b>RLS Diagnosis and Treatment Information</b> |                          |
| Self-reported RLS diagnosis                    | 396 (56.4)               |
| Sought healthcare treatment for RLS symptoms   | 413 (58.8)               |
| Current prescription for dopamine agonist      | 81 (11.5)                |
| Currently taking insomnia/sleep medication     | 119 (17.0)               |
| Currently taking antidepressant                | 217 (30.9)               |

- 56% of the respondents reported an RLS diagnosis
- Less than 12% reported treatment with dopamine agonists.



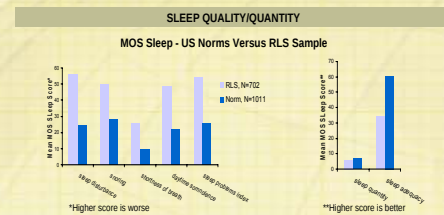
- Scores for the RLS sample were at least 1 standard deviation lower than the gender- and age-adjusted general population norms across all scales.
- Assuming a clinically important difference of at least 5 points, these differences suggest a substantial negative impact on health status.



- Compared to population norms, the RLS sample reported greater limitations in work productivity across all domains.
- The area of greatest impact was physical demands, with RLS respondents reporting limitations 32.7% of the time versus 15.1% of the time for US Norms.

| WORK LIMITATIONS                                       |             |              |                        |                     |
|--------------------------------------------------------|-------------|--------------|------------------------|---------------------|
| <b>Table 2. Work Limitations Questionnaire (N=275)</b> |             |              |                        |                     |
|                                                        | Absenteeism | Presenteeism | Work Productivity Loss | Activity Impairment |
| Mean (%)                                               | 9.6         | 36.9         | 9.9                    | 43.5                |
| SD                                                     | 20.6        | 26.4         | 20.6                   | 27.8                |

- Overall, working respondents with RLS reported missing 9.6% of their work time due to health (not necessary due to RLS).
- The largest scores (most impairment) were on the activity impairment (43.5%) and presenteeism (36.9%) scales.



- RLS sample reported poorer sleep quality across each domain compared to population norms (Hays et al., 2005), with differences of more than 16 points on 0- to 100-point scales.
- RLS respondents reported approximately 1 hour less sleep per night on average than those in the normative sample (6.0 hours versus 6.8 hours).

- ANCOVA ANALYSIS**
- Every SF12 v2 domain (i.e., physical functioning, general health, vitality), was independently and significantly impacted by RLS symptom intensity ( $p < 0.01$  for all); symptom frequency was predictive of most domains.
  - Symptom frequency and intensity were predictive of psychological distress.
  - All three symptom severity measures (intensity, frequency and time of onset) were predictive of sleep disturbance.
  - For work productivity and activity limitations, the results varied by subscale but symptom intensity was the most common predictor.

## CONCLUSIONS

The results of the survey indicate a significant and often overwhelming burden of RLS in health-related quality of life, psychological distress, work productivity/activity, and sleep quantity/quality, confirming and extending previous research regarding the burden of this neurological condition.

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