

# Work absenteeism in irritable bowel syndrome (IBS): measuring days versus hours missed

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## ABSTRACT

**Objective:** To compare the accuracy of two work absenteeism measures (days missed and hours missed) for use in economic evaluations of IBS

**Methods:** 135 IBS patients recruited from five US gastroenterology practices completed the Work Productivity and Activity Impairment questionnaire for IBS (WPAI:IBS), which assesses absenteeism with hours missed, and also completed questions about days and partial days of work missed. Days and partial days were considered to be the equivalent of 8 hours and 4 hours, respectively

**Results:** 125 patients were employed, had complete data, and were included in the analysis. A total of 6.4% of patients reported missing days from work due to IBS in the previous 7 days, with an overall absenteeism rate of 1.8%; 28.0% of patients reported missing hours of work, with an overall absenteeism rate of 4.3%. Among those reporting hours missed, 42.9% missed less than 3 hours, 34.3% missed 3 to 5 hours, and 22.9% missed 8 to 30 hours. When days missed was used to measure absenteeism, 77.2% of patients missing hours and 60.7% of time missed due to IBS were not counted; when hours missed was reported, all patients reporting days missed were counted. Combining partial days missed with days missed increased the correspondence between those reporting days and hours missed, but considerably overstated absenteeism because partial-day absences were often less than 4 hours. Previous validation of the WPAI:IBS hours missed measure of absenteeism relative to measures of disease severity, verbatim responses and retrospective diaries, corroborates the inaccuracy of the days missed measure

**Conclusions:** Hours missed from work, not days missed, is a more accurate measure for capturing the partial-day absences characteristic of IBS patients. Other chronic disorders like IBS may exhibit a similar pattern of widespread absences of short duration, and that absenteeism may go undetected when days missed is the measure of absenteeism

## BACKGROUND

- Irritable bowel syndrome (IBS) is a chronic, episodic gastrointestinal motility and sensory disorder that has a significant negative impact on patients' quality of life and well-being<sup>1,2</sup>
- A number of studies have highlighted the substantial socioeconomic consequences of IBS, including the direct costs of medical care and indirect costs due to lost work productivity<sup>2,3</sup>
- Work absenteeism is relatively high among patients with IBS, and this represents a considerable financial burden for both patients and employers<sup>4-6</sup>
- Many published studies may have understated IBS-related absenteeism because the standard measure used – 'days missed' – may be insensitive to the partial-day absences that are associated with IBS<sup>7</sup>
- The findings of a recent study that used 'hours missed' as a measure of absenteeism in IBS patients suggest that IBS-related absenteeism may be higher and more widespread than previously thought<sup>8</sup>
- This analysis was conducted to compare two work absenteeism measures (days missed and hours missed) to identify the most accurate measure for use in economic evaluations of IBS

## METHODS

### Subject enrollment and study design

- Patients with IBS were enrolled from five US gastroenterology outpatient practices
- Currently employed patients who met Rome II IBS diagnostic criteria were eligible to participate<sup>9</sup>
- Patients completed a questionnaire that included the following sections: demographics and disease severity; the Work Productivity and Activity Impairment questionnaire, IBS version (WPAI:IBS);<sup>7</sup> the Work Limitations Questionnaire;<sup>10</sup> debriefing and Dimensions of Daily Activities; and a retrospective diary
- A full description of the study methods has been reported previously<sup>7</sup>

### Absenteeism

- Absenteeism due to IBS was measured in two ways:
  - hours missed due to IBS and hours worked, derived from the WPAI:IBS
  - days and partial days missed due to IBS and days worked, from questions in the debriefing and Dimensions of Daily Activities section
- Rates of absenteeism were calculated by dividing the hours missed by the sum of hours missed and worked
- Partial-day absences reported in the debriefing section were considered as half-day absences

## METHODS (cont'd)

- A full working day was considered to be the equivalent of 8 hours, and a partial day was considered to be the equivalent of 4 hours
- For the purposes of this analysis, rates of absenteeism were reported as the average for the population and not as the average of the individuals' absenteeism rates, as is typical in the scoring of the WPAI:IBS

## RESULTS

### Patient characteristics

- A total of 135 patients were enrolled
- The patients had all types of IBS: 39% had alternating IBS, 29% had IBS with diarrhea and 27% had IBS with constipation. Only 5% of patients reported normal bowel pattern (although they met diagnostic criteria for IBS)
- Demographics and clinical characteristics of the enrolled subjects are shown in Table 1. Most patients were female (91%) and the mean age was 45.4 years
- Of the 135 patients, 133 were employed. Complete data (days and hours worked and missed from work) were available for 125 patients and were included in the analysis

**Table 1. Demographics and clinical characteristics of patients at baseline.**

Characteristic	Total (n=135)
Age (years; mean ± SD*)	45.4±12.1
Gender (% female)	91
Education (% some college)	70
Occupation (% white-collar)	88
Type of IBS (%)	
Alternating constipation/diarrhea	39
Diarrhea	29
Constipated	27
Normal bowel pattern	5
Time since IBS diagnosis (years; mean ± SD*)	13.7±11.7

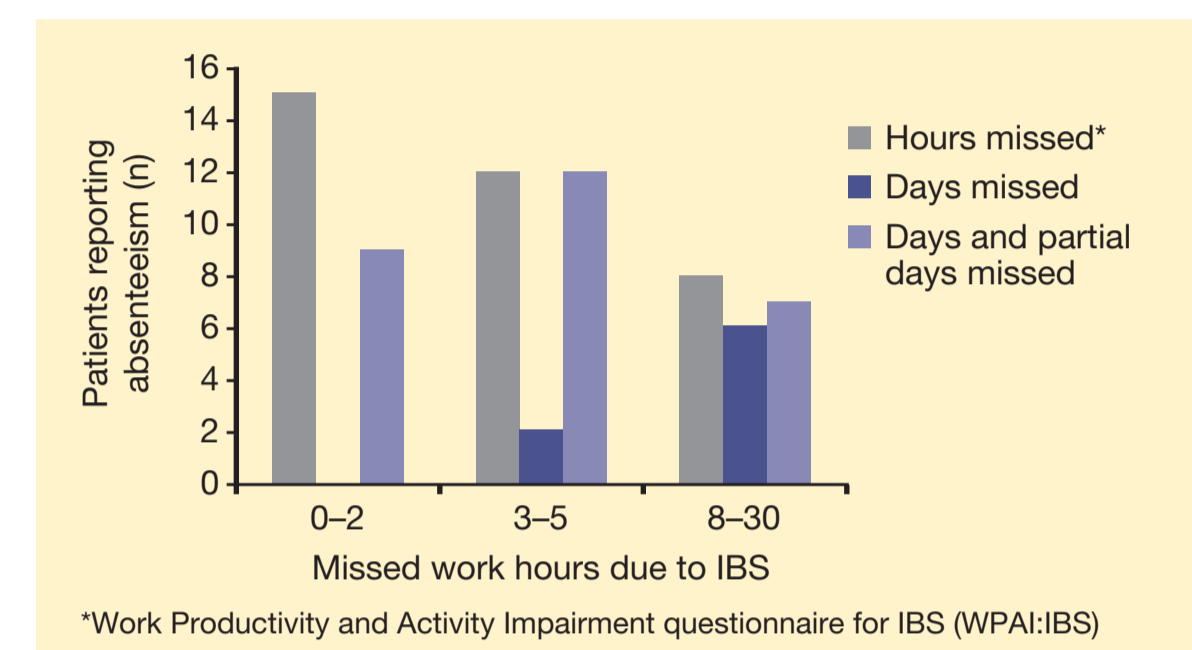
\*SD = standard deviation

### Absenteeism due to IBS

- Absenteeism due to IBS by type of measure (i.e. hours missed, days missed and days and partial days missed) is summarized in Table 2
- When 'hours missed' was used as the measure of IBS-related absenteeism, 35 (28.0%) patients reported absenteeism in the previous 7 days
  - a total of 182.8 hours missed and 4,109.8 hours worked were reported when using the 'hours missed' measure, giving an absenteeism rate of 4.3%
- When 'days missed' was used as the measure of IBS-related absenteeism, eight (6.4%) patients reported absenteeism from work in the previous 7 days
  - a total of 9 days (equivalent to 72 hours, assuming an 8-hour day) of missed work and 500 days worked were reported when using the 'days missed' measure, giving an absenteeism rate of 1.8%
- When 'days and partial days missed' was used as the measure of IBS-related absenteeism, 30 (24.0%) patients reported absenteeism in the previous 7 days
  - a total of 264 hours missed and 4,000 hours worked were reported when using the 'days and partial days missed' measure, giving an absenteeism rate of 6.2%
- Figure 1 shows the number of patients reporting absenteeism in hours and days (and combined days as well as partial days), according to the hours of work missed
- The majority of patients who reported IBS-related absenteeism during the previous 7 days (77.1%) missed 5 hours or fewer
- Only 2/27 patients who reported missing ≤5 hours reported any 'days missed'

## RESULTS (cont'd)

- None of the patients who missed ≤2 hours reported any 'days missed'
- When data from patients reporting days and partial days missed were combined, the number of patients reporting 3–5 hours of absenteeism was the same as with the WPAI:IBS 'hours missed' measure of absenteeism. However, the number of patients reporting the least amount of absenteeism (≤2 hours) was again undercounted
- When the amount of reported absenteeism was 8 hours or more in the previous 7 days (which occurred infrequently), there appeared to be a better correlation between the 'days missed' and 'hours missed' measures



**Figure 1. Missed work hours due to IBS.**

- When 'days missed' was used to measure absenteeism, 77.2% of patients missing hours and 60.7% of time missed due to IBS were not included in the analysis
- However, when 'hours missed' was used, all patients reporting days missed were included in the analysis

## CONCLUSIONS

- IBS-related work absenteeism is an important indicator of a patient's functional ability and is likely to have significant economic consequences for the patient and his/her employer
- This analysis showed that the standard measure of absenteeism – days missed from work due to IBS – greatly understated the rate of absenteeism in the previous 7 days
- More than three-quarters of IBS patients missed up to 5 hours from work in the previous 7 days, but most of these patients were not included in the analysis when 'days missed' was the measure of absenteeism
- Overall, 60.7% of IBS absenteeism was not included when 'days missed' was used
- By eliciting work hours missed, the WPAI:IBS takes into account those patients who do not necessarily take a whole day off, but who may miss partial days, e.g., by going in late or leaving work early
- Given the range of hours worked and the pattern of most absences, the WPAI:IBS measure of absenteeism was the most accurate measure for assessing IBS-related absenteeism in this population

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This study was funded by Novartis Pharma AG, Basel, Switzerland. Poster presented at ISPOR 8th Annual European Congress, 6–8 November 2005, Florence, Italy.

**Table 2. Absenteeism due to IBS in the 7 days prior to study entry.**

IBS-related absenteeism	Measure of absenteeism (n=125)		
	Hours missed*	Days missed	Days and partial days missed
Patients reporting absenteeism, n (%)	35 (28.0)	8 (6.4)	30 (24.0)
Total hours missed	182.8	72**	264**
Range	0.5–30 hours	1–2 days	1–5 partial days
Total hours worked	4,109.8	4,000**	4,000**
Range	0–80 hours	1–7 days	1–7 days
Rate of absenteeism, %	4.3	1.8	6.2

\*Work Productivity and Activity Impairment questionnaire for IBS (WPAI:IBS)

\*\*Assumes an 8-hour workday and a 4-hour partial workday