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GP and patient predictions of sick-listing duration: How well do they correspond? A prospective observational study

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Abstract

Objective. To explore how well physicians and patients predict sick-listing duration and the correspondence between their respective predictions. To study possible gender differences concerning prediction accuracy. **Design.** Prospective observational study. **Setting.** Two medium-sized primary care centres (PCC) in western Sweden. **Subjects.** GPs at the PCCs and attending patients sick-listed for > 14 days. **Main outcome measures.** Sick-listing duration; patients' and GPs' predictions of the total duration of the individual patient's sick-listing. **Results.** A total of 127 patients (93 women, 34 men, mean age 45 years) and 10 GPs participated in the study. Neither the GPs nor the patients were able to predict the interval until return to work with high accuracy. The GPs' and the patients' perceptions concurred in only 26% of cases. There was a significant difference in the correspondence between the GPs' and patients' respective predictions of sick-listing duration compared with the actual duration. GPs' predictions were more accurate for medium-length duration (1.5–6 months), while patients' predictions were more accurate for long-duration (> 6 months) sick-listing. Patients with less education predicted long duration of sick-listing more accurately than those with more education. There was no significant difference between male and female patients' accuracy of prediction, or between GPs' accuracy of prediction of male vs. female patients' sick-listing duration. **Conclusions.** Prediction of total sick-listing duration was hard for both GP and patient; their respective predictions corresponded in only one-quarter of the cases. No gender differences were observed in the accuracy of prediction.

Key Words: General practice, prediction, primary care, sickness absence, sickness certification, sick-listing, Sweden

Introduction

In general practice, sick-listing is a frequent and cost-generating measure, often experienced as problematic for the physician (1–6). One reason is that sick-listing involves assessment of how the symptoms reduce the patient's ability to work, requiring physicians to rely on the patient's own description of the job and his/her capacity to do it. From the patient's point of view, the sick note is important if his/her self-perceived ability to work is low. Without the note the patient must keep on working, and patients often worry that working may affect their health negatively (7). Thus, consultations involving sick-listing assessment involve several difficult

considerations on the part of both the physician and the patient. Only a few studies have combined both perspectives (8).

In European countries with high sickness-absence rates, such as Sweden, Norway, and the Netherlands, sick-listing issues are raised at about 10% of all consultations in primary care (9–11). Several factors influence whether sick-listing is requested and undertaken, as well as the duration and degree (part- or full-time) of sick-listing, of which diagnosis is only one (9). Among the other factors, in addition to the patient's assessed ability to work, are the labour market, labour-force structure and composition, the health insurance system, work environment, the

Sick-listing is frequent and costly, and often experienced as problematic for the physician. It is difficult to predict the duration of sick-listing.

- General practitioners (GPs) and patients corresponded in one-quarter of cases concerning the prediction of total duration of sick-listing.
- Patients more often accurately predicted sick-listing duration than GPs.
- Less educated patients predicted sick-listing duration, in particular longer periods, more accurately than more educated patients, when both groups were compared with GPs' prediction.

“absence culture” at work and in society, work tasks, and individual factors such as attitudes and coping strategies (12–14). In a Swedish study, the patient's own perceived limited ability to work was the strongest predictor for sick-listing in the primary care context (9).

In a Norwegian study, Reiso et al. compared how general practitioners (GPs) and patients assessed patients' ability to work, and found a high degree of correspondence: 40% of the assessments concurred (15). Patients made their assessments in relation to the demands at work while physicians were more inclined to evaluate ability to work based on severity of clinical findings. The GPs' predictions were most accurate for short episodes. Their assessments of working ability were not associated with the degree of prediction accuracy (16). To really evaluate working ability, both demands at work and clinical findings should be assessed together, resulting in a decision to sick-list or not. In another study, Reiso et al. found that the self-perceived required duration of back pain patients' sick-listing was a predictor of the actual time off work, together with age, high pain intensity, and low self-assessed working ability (17).

The aim of this study was to explore the concurrence between GPs' and patients' predictions of sick-listing duration, the correspondence between GPs' prediction of sick-listing duration and the actual duration, as well as the correspondence between patients' prediction of sick-listing duration and the actual duration, with gender aspects taken into consideration.

Material and methods

Two medium-sized primary care centres (PCC) in an urban and suburban district, with around 8000 (PCC A) and 12000 (PCC B) listed patients, respectively, were chosen for the study. Both PCCs

had high numbers of permanent GP staff, yielding high continuity. There were five GPs (two female, three male) at PCC A during the study period and seven GPs (six female, one male) at PCC B.

Patients attending the PCCs who started a sick-listing > 14 days and who were willing to participate in the study were included during the study period 1 October 2008 to 31 March 2010. In Sweden, the first seven days of sick-listing do not require a certificate, but a sick note from a doctor stating the diagnosis and degree of inability to work is required for access to benefits from day eight. For the purpose of this study, the duration of individual sick-listing (irrespective of full or part time) was calculated as the time stated on the certificate. The total sick-listing duration was calculated by adding up time stated on all the patient's certificates concerning the whole sick-listing period. At inclusion in the study and at the end of the sick-listing period, all participants filled in questionnaires concerning socio-economic data, and (only at start) age, gender, and their own prediction of the interval until they would return to work.

More education was defined as university or special vocational education.

At inclusion, the GP also filled in a questionnaire concerning each patient's diagnosis, and the GP's prediction of the interval until the patient would return to work formulated as: “When do you predict that your patient will return to work: in < 15 days, 15–44 days, 45–180 days, > 180 days?” The patient and the GP filled in separate questionnaires, independently and not simultaneously.

Statistical methods

The variable sick-listing duration was a continuous variable. In contrast, the nature of the variable had neither a pure normal distribution nor a distribution that could be approximated to the normal distribution. Due to this fact we decided to categorize the variable into four clinically relevant subgroups.

Cohen's kappa was used to calculate the correspondence between the GP's and patient's prediction of sick-listing duration. The degree of association was calculated with Spearman's correlation. The prediction of sick-listing duration was expressed as a categorical variable and descriptive statistics were used to calculate the distribution of the individual prediction of sick-listing duration over every category. Correspondence between GPs' and patients' predictions was therefore analysed using Fisher's exact test, while the Kruskal–Wallis test was used for the overall test, as well as for testing patients' and GPs' predictions, respectively, of sick-listing duration and actual duration.

The study was approved by the Regional Ethical Review Board of Gothenburg (Reg. number 217-08).

Results

Inclusion began in October 2008 and ended at the end of December 2009. A total of 127 patients, 93 women and 34 men, were included. Of these, 55 (46%) had less education, as defined above. The diagnosis on the sick note was an ICD 10 F diagnosis (mental and behavioural disorders) in 51%. Table I describes patients included in the study by gender, age, lifestyle, and socioeconomic data. There were significantly more women included, and the mean age did not differ between male and female patients. Of the patients, 113 of the 127 had stated a prediction concerning total sick-listing period, and GPs had stated a prediction concerning total sick-listing period for 118 patients. In total, the GPs' and the patients' predictions concurred in only 26% of cases (Kappa = 0.26; Spearman's correlation $r = 0.38$).

Table II shows the concurrence between the physicians' predictions of the interval until return to work and the actual interval, as well as the concurrence between the patients' corresponding predictions. Neither the GPs nor the patients were able to predict the sick-listing duration with a high degree of accuracy. The GPs' predictions were significantly more often accurate than the patients' when it came to durations of 45–180 days, but the reverse was found in the case of durations > 180 days. Less educated patients were found to be significantly better at predicting than those with more education when it came to durations > 180 days, when the respective group's prediction was compared with GPs' predictions.

Table III shows the test of differences in correspondence between male and female patients' own predicted duration of sick-listing and the actual duration, and between physicians' prediction of sick-listing duration and the actual respective duration in the case of male and female patients (one of the patients did not state gender). There was no significant difference between male and female patients, concerning either their own predictions or the GPs' predictions of sick-listing duration and the actual duration. There was no significant difference between female and male GPs' predictions ($p = 0.44$).

Discussion

The correspondence between the patients' and the GPs' perception of the duration of sick-listing was not high. Furthermore, the correspondence between the patients' and GPs' respective predictions of sick-listing duration, made at the first consultation, and the respective actual duration was rather low. GPs predicted the interval until return to work significantly more accurately when it came to medium-length duration while the patients' predictions were accurate to a significantly higher degree in the case of long sick-listing duration.

The fact that the participating PCCs represented both urban and rural populations and that both PCCs had experienced GP staff and good doctor–patient continuity during the study period are among the strengths of this study. Most patients had all their appointments with the same GP. Among the limitations is the low number of participating PCCs, which could diminish the generalizability of the study. The fact that both patients and GPs were aware that the sick-listing process was the object of attention is another possible limitation, as this might have influenced decisions concerning sick-listing duration. On the other hand, these circumstances were the same for all participants in the study. Another limitation was the high continuity of the PCCs concerning both personnel and visits. This could also reduce the representativity, as this is not always the case for today's Swedish primary care.

The results might have been confusing if the duration of sick-listing were only dependent on medical conditions, and might have led to questions about the certainty of the GPs' assessments, but many other factors – e.g. organizational, work-environmental, and social – are also important. These factors might be hard to take into consideration at the first consultation, and might not become evident until after several visits. Moreover, there are no key questions to assess conclusively whether a certain patient is at high risk of a longer sickness absence except concerning prediction of work ability in back-pain patients (18). Early in the process, medical factors might be more

Table I. Study participants (n = 127).¹

Patients	Men				Women				p
	n	%	Mean (SD)	Median (IQR)	n	%	Mean (SD)	Median (IQR)	
Age	34		45.4 (13.6)	51.0 (22.3–55.5)	93		45.1 (12.2)	46.0 (36.5–56.5)	0.910
Income (SEK)	17		306 000 (86 000)	300 000 (250 000–355 000)	39		235 000 (78 000)	246 000 (200 000–280 000)	0.007
Education									0.616
Less	16	50			39	45			
More	16	50			48	55			

Bolded p-value indicates significant value.

¹P-values indicate statistical differences between genders.

Table II. Correspondence between GPs' prediction of patients' (n = 118) sick-listing duration and actual duration, as well as between patients' (n = 113) prediction of sick-listing duration and actual duration.¹

	GP as reference	Patients (total)	p-value	Patients with	p-value	Patients with	p-value
	118 cases n (%)	113 cases n (%)		less education n (%)		more education n (%)	
Correspondence, < 15 days	2 (18)	1 (5)	> 0.30	1 (8)	> 0.30	0 (0)	> 0.30
Number actual duration	n = 11	n = 10		n = 5		n = 5	
Correspondence, 15–44 days	13 (29)	14 (30)	> 0.30	5 (25)	> 0.30	8 (33)	> 0.30
Number actual duration	n = 32	n = 30		n = 9		n = 20	
Correspondence, 45–180 days	26 (43)	12 (35)	0.008	6 (46)	> 0.30	6 (29)	0.124
Number actual duration	n = 53	n = 51		n = 28		n = 22	
Correspondence, > 180 days	0 (0)	5 (36)	0.048	4 (57)	0.017	1 (14)	> 0.30
Number actual duration	n = 22	n = 22		n = 10		n = 11	

Bolded p-value indicates significant value.

¹Significance was tested regarding the comparison between GPs' and patients' correspondence of predictions, both as a whole and divided by patients' educational level. Fisher's exact test was used.

important for both the physician and the patient, and only a brief consultation may be made regarding workplace factors. This seems to be a relevant approach; however, being sick-listed might in itself influence the patient's motivation and confidence in returning to work. Therefore, it is important to address issues related to occupation and workplace early in the consultation in order to support the process of returning to work most efficiently.

Earlier studies have indicated that patients sometimes predict sick-listing duration more accurately (17). In the present study, the overall correspondence between the GPs' prediction of the interval until return to work and the actual duration of sick-listing was not high on the whole, and the same applied to the patients' predictions. The patients' higher predic-

tion accuracy concerning longer sick-listing duration could be a consequence of better knowledge of other relevant factors, besides the medical, i.e. organizational and work-environmental conditions. It is also possible that the patients' expectations per se might have affected the interval until their return to work. Methods to achieve better accuracy in prediction of sick-listing duration would be helpful. That individuals with lower education actually predicted long sick-listing duration more adequately than the higher educated is a notable finding. A possible reason might be that lower educated individuals are sick-listed more often and that this contributes to better experience-based knowledge at both the individual and group levels. On the other hand, level of education was not significant at all for patients concerning prediction of

Table III. Comparison between genders concerning correspondence between patients' prediction of sick-listing duration and actual duration, and between genders concerning correspondence between GPs' prediction of sick-listing duration and actual duration.¹

	Correspondence				p-value ³
	1–14 days n (%)	15–44 days n (%)	45–180 days n (%)	> 180 days n (%)	
Patients					
Men (n = 36)	1 (25)	6 (30)	3 (33)	1 (3)	0.136
Nb actual duration	n = 4	n = 20	n = 9	n = 3	
Women (n = 76)	0 (0)	8 (31)	9 (36)	4 (36)	0.685
Nb actual duration	n = 14	n = 26	n = 25	n = 11	
p-value ²	0.222	> 0.3	> 0.3	> 0.3	> 0.3
GPs					
Male patients (n = 23)	0 (0)	4 (33)	2 (22)	0 (0)	0.063
Nb actual duration	n = 2	n = 12	n = 9	n = 0	
Female patients (n = 94)	2 (22)	9 (28)	24 (26)	0 (0)	0.260
Nb actual duration	n = 9	n = 32	n = 52	n = 1	
p-value ²	> 0.3	> 0.3	0.278	–	0.240

¹Comparison by Fisher's exact test; overall test with Kruskal–Wallis test. Separate tests for GPs and patients, respectively.

²Significance tested by Fisher's test.

³Significance tested by Kruskal–Wallis test.

short and medium sick-listing duration, which constituted the majority of sick-listing durations.

In a study by Reiso, higher correspondence (40%) between patients' and GPs' predictions was shown (15). The difference might be explained by the fact that the assessment concerned work ability, not duration of sick-listing per se, and that patients were included earlier (<8 days) in the sick-listing course. It is important for the GP to know that it appears to be difficult to accurately predict total sick-listing duration at the first consultation, and that the duration consequently can probably only be outlined after several consultations. The results imply that taking the patient's own opinion into consideration might provide a more accurate estimation. We found no difference in capability to predict sick-listing duration between male and female GPs, or differences concerning the accurateness of GPs' predictions of male versus female patients' sick-listing duration. Previous studies have shown differences in physicians' sick-listing patterns (19), as well as no differences between genders (20).

Conclusions

Prediction of total sick-listing duration was hard for both GP and patient; in this study, the doctor and the patient only agreed in one-quarter of the cases. Patients accurately predicted longer sick-listing duration more often than GPs, while GPs accurately predicted medium-length sick-listing duration more often than patients. More educated patients did not predict sick-listing duration more accurately than the less educated, which also is a notable finding. No gender differences concerning accuracy of prediction of sick-listing duration were found. Development of an instrument for increasing predictability accuracy adjusted not to single diagnoses but to the primary care context where patients with many different types of diagnoses are at hand could be an important addition to the rehabilitation process.

Declaration of interest

The authors report no conflict of interest. The authors alone are responsible for the content and writing of the paper.

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