

Perceptions of illness and their impact on sickness absence

Prosenjit Giri^{1,2}, Jon Poole¹, Peter Nightingale² and Alastair Robertson²

Background	A patient's perception of their illness can influence their coping ability, compliance with treatment and functional recovery. Psychological interventions to address negative beliefs may facilitate an earlier return to work.
Aims	To compare perceptions of illness, fitness to return to work and time to return to work among employees with those of their occupational physicians (OPs).
Methods	A cross-sectional study of employees off sick for >2 weeks, with the return to work date ascertained at 3 months. Employees and their OPs completed similar questionnaires that included the Brief Illness Perception Questionnaire.
Results	Of total, 84 employees (76% response rate) and nine OPs participated. Employees reported a greater impact on their life ($P < 0.01$), a longer duration of illness ($P < 0.01$), more symptoms ($P < 0.01$), more concern about their illness ($P < 0.01$), more emotional impact of their illness ($P < 0.01$) and that their illness was more serious ($P < 0.01$) than did the OPs. They attributed their illness to work more often than their OPs ($P < 0.05$) and predicted more accurately when they would be fit to return to work ($P < 0.01$). Employees who returned to work believed that their illness was shorter lasting ($P < 0.01$), more treatable ($P < 0.01$), more controllable ($P < 0.05$), less serious ($P < 0.01$), had less emotional impact ($P < 0.01$), perceived fewer symptoms ($P < 0.05$) and had less concern ($P < 0.05$) than those who failed to return to work.
Conclusions	Employees had more negative perceptions about their illness than OPs. Positive perceptions were associated with an earlier return to work. Unhelpful negative beliefs about illness need to be addressed by OPs.
Key words	Fitness for work; illness perception; return to work; sickness absence; vocational rehabilitation.

Introduction

Following the diagnosis of an illness, a patient generates an organized pattern of beliefs to cope with it, which in turn influences their behaviour [1,2]. These beliefs are based either on their own medical knowledge and experience or on the experience of their friends or family members who have had similar symptoms or diagnoses [2]. Patients with the same illness may have different perceptions of their condition and different emotional reactions to it [3]. Patients are said to group their ideas about illness around five themes, which health psychologists have called illness perceptions. They are label and symptoms

of the illness, its cause, duration, control or cure and consequences of the illness [1,2].

Positive perceptions about illness have been reported to be associated with psychological well-being, a reduced requirement for benefits and an earlier return to work [4,5] whereas negative perceptions are associated with increased future disability, slower recovery and a delayed return to work independent of the severity of the medical condition and of any litigation [1,6,7]. The beliefs of health care professionals, policy makers and society also have an important role to play in reducing perceived disabilities and facilitating treatment [8].

Strategies have been used to address unhelpful beliefs about illness. For example, a brief psychological hospital-based intervention designed to change negative perceptions of patients with myocardial infarction was successful in reducing disability and facilitating a return to work by reducing negative beliefs about the duration of illness while simultaneously enhancing belief in cure or controllability [9].

¹Dudley Primary Care NHS Trust, Occupational Health Department, Cross Street, Dudley DY1 1RN, UK.

²University Hospital Birmingham NHS Trust, Occupational Health Department, Woodlands Nurses Home, Raddlebarn Road, Birmingham B29 6JD, UK.

Correspondence to: Prosenjit Giri, 1 Lancaster Walk, Worksop, S81 7NG, UK. Tel: +44 (0)114 271 5703; fax: +44 (0)114 271 4844; e-mail: prosenjitgiri@hotmail.com

In this study, we assessed perceptions of employees who were medically certified unfit to work about their illness, their fitness to return to work, obstacles to returning to work and the need for workplace adjustments to facilitate returning to work. Their perceptions were compared with those of their occupational physicians (OPs). The perceptions of employees who returned to work were compared with those who did not return and the perceptions of those with 'serious' illness were compared with those with 'non-serious' illness. Employees were also asked to predict how long they would take to return to work and this was compared with the opinion of their OP about fitness to work and the actual date of return.

Methods

A self-reported questionnaire was administered in three National Health Service departments of occupational health in the West Midlands between August and November 2006. Employees from all employers who had been off sick for >2 weeks and whom a manager had referred were recruited and asked to complete a questionnaire. Their date of return to work was ascertained 3 months from the date of recruitment to the study. Follow-up consultations, temporary staff and employees with short-term sickness absences were excluded.

The employee and OP completed similar questionnaires. The questionnaire included the Brief Illness Perception Questionnaire (BIPQ; available as Supplementary data at *Occupational Medicine* Online) comprising items on: the impact, number of symptoms, duration and consequences of the illness, their understanding, personal control, effect of treatment and emotional response to the illness [3]. The question that ranked factors responsible for the illness was removed and a question on the seriousness of the illness was added. Responses were given on an 11-point Likert scale (0 minimum–10 maximum). Questions were added on obstacles to return to work and the necessity for job modifications with responses on a five-point Likert scale. Employees were asked to predict how long they would take to return to work and OPs to say how long they should take to do so.

Medical diagnoses were made in the usual way by the OP during the consultation and categorized into 'serious' or 'non-serious' illness according to prognosis. Examples of serious illnesses were moderate to severe asthma, chronic obstructive pulmonary disease, angina, heart failure, stroke, sub-arachnoid haemorrhage, cancer, diabetic retinopathy and bipolar disorder. Non-serious illnesses included non-specific back or neck pain, tendonitis, osteoarthritis, fractures and mild to moderate anxiety or depression.

Each employee who consented to take part in the study completed a confidential questionnaire before the consultation with an OP in the knowledge that the OP was going

to complete a similar questionnaire. OPs completed their questionnaire after the consultation without sight of the employee's responses. The questionnaires were piloted on 30 randomly selected subjects as a consequence of which the original 38 item illness perception questionnaire was replaced by the modified 9 item BIPQ [3]. The actual date of return to work was obtained from management records and in a few instances by contacting the employee themselves. This date was then compared with the predictions of the employee and the OP.

Data were collected in an Excel database and analysed using SPSS 13. Paired analysis was done to compare the employees' and OPs' perceptions. The work relatedness of the illness was analysed by cross-tabulation using the McNemar test. Factors attributed to sickness absence, perceptions of illness, obstacles to return to work and the necessity for job modification were compared by the Wilcoxon signed rank test. Comparisons between two subsets of employees were done by cross-tabulation using Fisher's exact test. A multiple logistic regression model of analysis was used to adjust for potential confounders. Predicted length of absence was compared with the actual length as a paired sample using the Wilcoxon signed rank test.

The research had the ethical approval from the South Birmingham Regional Ethics Committee and from the Committee on the Ethics of Research on Human Beings of the University of Manchester.

Results

A total of 110 employees were invited to take part in the study of whom 84 (76%) agreed to participate. Nine OPs including four accredited specialists and five specialist registrars (SpRs) took part. Musculoskeletal, psychological or other illnesses were the declared reasons for absence in 31/84 (37%), 31/84 (37%) and 22/84 (26%) of employees, respectively. In all, 22/84 (26%) of employees declared co-morbidities. At 3 months after recruitment, 48/84 (57%) employees had returned to work, 20/84 (24%) had had their employment terminated and in 16/84 (19%) the situation remained unresolved. A descriptive analysis of the subjects is shown in Table 1.

Twenty-four of 81 (30%) employees believed their illness was caused by work compared to 13/81 (16%) of OPs ($P < 0.05$). In all, 47/78 (60%) employees believed their illness was made worse by work compared to 34/78 (44%) of OPs ($P < 0.05$). Employees in general had more negative perceptions about their illness compared with OPs, perceiving more symptoms, a greater impact on their life, a longer duration of illness, more concern about their illness, a greater emotional impact and that their illness was more serious (Table 2).

Stratification of illnesses into musculoskeletal, psychological and other types did not reveal any significant

Table 1. Sample characteristics

Total number of participants (<i>n</i>)	84
Age (years)	Mean 46.6 (SD 9.9)
Sex	Female 61 (73%)
Employer	NHS 48 (57%)
Length of sickness absence at recruitment (weeks)	Median 12 (IQR 8–25)
Seriousness of illness (serious/non-serious)	Serious 19 (23%)
Work status 3 months after recruitment	Returned 48 (57%)

SD, standard deviation; NHS, National Health Service; IQR, interquartile range.

Table 2. Perceptions of illness: employees versus OPs

Perceptions of illness	Employees Median (IQR)	OPs Median (IQR)	<i>n</i>	<i>P</i> value
Impact on life	8 (6–9)	7 (5–8)	66	**
Duration of illness	7 (5–9)	5 (3–7)	58	**
Number of symptoms	8 (6–9)	7 (6–8)	66	**
Concern about illness	10 (8–10)	7 (6–8)	66	**
Emotional impact of illness	9 (6–10)	7 (5–8)	64	**
Seriousness of illness	6 (5–8)	5 (3–6)	61	**
Control over illness	5 (2–7)	5.5 (3–8)	64	NS
Effect of treatment	6 (5–9)	7 (5–9)	61	NS
Understanding of illness	8 (6–10)	7 (5–8)	65	NS

Scoring: 0, minimum; 10, maximum. IQR, interquartile range. *n* signifies number of paired responses. ***P* < 0.01; NS, not significant (OPs' scores compared to employees' scores).

difference in the perception of illness in the three illness groups except that patients with psychological illness perceived more emotional effects of their illness than those with musculoskeletal illnesses (*P* < 0.01) and more control over their illness than those in the 'other illness' group (*P* < 0.01).

Fifty-four of 84 (64%) employees predicted a return to work within 3 months compared to 67/84 (80%) of OPs. Fifty of 84 (60%) employees reported that their prediction was influenced by the opinion of their treating doctors whereas in 48/84 (57%) cases OPs reported that 'waiting for the managers to facilitate a return to work' was the main obstacle. No other significant difference was found in the perception of obstacles to returning to work by the employees or the OPs.

The percentage cumulative frequency of return to work and actual return to work for all 84 subjects showed that the employees' estimated date was closer to the actual date of return to work than the OPs (Figure 1). The OPs' estimated time to return to work differed significantly from that of the employees (*P* < 0.01) and also from the actual date of return (*P* < 0.01). Both the employees and OPs underestimated the duration of

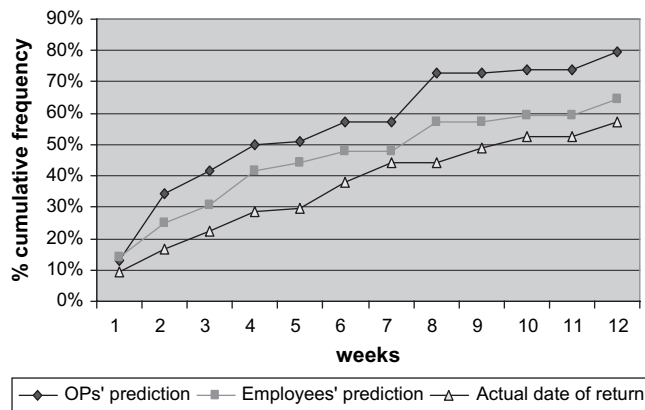


Figure 1. Percentage cumulative frequency of predicted return to work and actual time to return to work.

sickness absence and the difference increased with time. For example, in 25% of cases the OPs predicted a return in 1.5 weeks, the employees in 2 weeks but the actual return to work was in 3.5 weeks. In 50% of cases, the OPs predicted a return in 4 weeks, the employees in 7 weeks but the actual return to work was in 9.2 weeks. Stratification of illnesses into musculoskeletal, psychological and other showed a similar pattern with OPs being more optimistic and the employee's predictions being closer to the actual date of return.

After adjusting for length of absence before recruitment, seriousness of illness and type of illness by a multiple logistic regression, employees who had higher scores for number of symptoms, expected duration of illness, concern about illness, emotional impact of illness and perception of seriousness of illness were significantly less likely to return to work within 3 months than those employees who gave themselves lower scores for these questions. Employees who gave themselves higher scores for control over illness and efficacy of treatment were significantly more likely to return to work in comparison to the others. Similarly, employees whose OPs gave them higher scores for impact on life, experience of many symptoms, concern about illness and emotional impact of illness were significantly less likely to return to work within 3 months than those, given lower scores for these questions (Table 3).

Sixty-five of 84 (77%) employees were categorized in the non-serious illness group and 19/84 (23%) in the serious illness group. Among those in the non-serious illness group, 28/65 (43%) had musculoskeletal illnesses and 31/65 (47%) had psychological illnesses, with 27 (87%) of these categorized as having mild to moderate degrees of anxiety or depression. Employees with non-serious illnesses were more likely to perceive that their illness was caused by work (46/65; 71% versus 6/19; 32%; *P* < 0.01) or made worse by work (41/62; 66% versus 6/17; 35%; *P* < 0.05) compared with employees who had serious illnesses. Unresolved work-related issues were highlighted more often as an obstacle to return to work

Table 3. Perceptions of illness and their association with return to work within 3 months

Perceptions of illness	<i>n</i>	Employee Odds ratio	<i>P</i> value	<i>n</i>	OP Odds ratio	<i>P</i> value
Impact on life	66	0.80 (0.62–1.03)	NS	66	0.62 (0.45–0.84)	**
Duration of illness	58	0.71 (0.54–0.92)	**	66	0.83 (0.68–1.02)	NS
Number of symptoms	66	0.71 (0.53–0.94)	*	66	0.57 (0.39–0.83)	**
Concern about illness	66	0.73 (0.55–0.97)	*	66	0.66 (0.48–0.90)	**
Emotional impact of illness	64	0.69 (0.52–0.91)	**	66	0.60 (0.44–0.81)	**
Seriousness of illness	61	0.63 (0.45–0.89)	**	66	0.88 (0.68–1.12)	NS
Control over illness	64	1.27 (1.03–1.57)	*	66	1.11 (0.89–1.38)	NS
Effect of treatment	61	1.51 (1.14–2.01)	**	66	1.09 (0.88–1.35)	NS
Understanding of illness	65	1.17 (0.95–1.43)	NS	66	0.98 (0.78–1.24)	NS

Scoring: 0, minimum; 10, maximum. Odds ratios were obtained from multiple logistic regression analysis adjusting for length of absence at start of study, seriousness of illness and type of illness. Ratios <1 indicate that individuals with higher scores are less likely to return to work within 3 months. *n* signifies total number of responses. **P* < 0.05; ***P* < 0.01; NS, not significant.

by the employees in the non-serious group than in the serious illness group ($P < 0.05$).

Employees in the serious and non-serious illness groups showed no significant difference in the agreement between the OPs and the employees for prediction of a return to work date ($P = 1$). OPs tended to be more optimistic about fitness to return to work than employees irrespective of the type of illness. In general, OPs aligned more closely in their views to those employees with serious rather than non-serious illnesses, but this did not reach statistical significance.

Discussion

This study revealed several differences in perceptions of illness between employees and OPs. In general, employees had more negative perceptions about their illnesses than OPs and these were more common in those who failed to return to work in the 3 months of the study, even after adjustment for length of absence, seriousness of illness and type of illness. This indicates that negative perceptions need to be identified if an early return to work is to be facilitated. The observation that employees are better predictors than OPs of when they will return to work, irrespective of the type of illness, is not surprising, but the time it takes to return to work from when the OPs judged them fit is of concern. The finding that employees, particularly those with non-serious illness, more readily perceived their illnesses to be work related than OPs suggests that, provided these perceptions are genuine, perceptions about work relatedness are being underappreciated by OPs. If OPs are more likely to be correct about attribution than employees such a bias has implications for self-reported questionnaire-based studies such as the Labour Force Survey [10].

A doctor may be a poor judge of the effects of illness on a patient and therefore underestimate them. On the other

hand, differences of perception may be due to an employee's erroneous beliefs about their illness or functional abilities. For example, many patients with non-specific (mechanical) back pain believe that work will harm their backs, yet most doctors believe that this is not the case and encourage them to resume normal activities. It has been shown previously that doctors are better at predicting return to work accurately in short- than long-term absences, irrespective of the sex of the patient [11].

Identifying negative perceptions can cause difficulties in the doctor–patient relationship and some doctors may choose to avoid this. Others may believe that this is outside their area of expertise or in resistant cases prefer that a clinical psychologist challenge such perceptions with techniques such as cognitive behavioural therapy. There is some evidence that being aware of negative perceptions and trying to influence them can be a successful method of behavioural change. An intervention conducted by a psychologist comprising three 30–40 min sessions designed to change inaccurate and negative illness perceptions of hospitalized patients speeded up recovery and return to work after myocardial infarction [9] and similar interventions should be studied in an occupational health setting. OPs need to be aware of the employee's perceptions if they are to address undeclared obstacles to returning to work and the BIPQ may be a useful tool for this.

Another way of changing perceptions about a particular illness would be to use a population-based approach using mass media to influence the beliefs and attitudes of society. This can change not only the beliefs of patients but also those of treating health care workers, who in turn could modify the beliefs of patients. This also helps to reduce the tension that may arise from differences in perception between the patient and their doctor. Such a strategy was successfully implemented by the Victoria Workcover Authority in Australia with a mass media campaign about back pain, resulting in a >15% reduction in back pain insurance claims [12].

The finding that the majority of employees believed their views were influenced by the opinion of their treating doctor is supported by a Dutch study of long-term absence in employees with back pain, where OPs highlighted this as an obstacle to return to work [13]. The delay in facilitating a return to work by management cited by the majority of the OPs as an obstacle to return to work is a similar observation to the lack of 'accommodative work' reported in a Canadian study [14]. A prospective study of workers with soft tissue injuries of the back, arms and legs from the Canadian Compensation Board and a systematic review of articles in Medline between 1966 and 1998 covering studies on myocardial infarction, cardiac surgery, chronic pain and psychiatric conditions both found a positive association between patients' expectation of recovery and better health outcomes, a reduced requirement for benefits and an earlier return to work; however, most of these studies were performed on homogenous groups of patients with similar illnesses [4,5]. By contrast, the subjects in our study had a variety of illnesses, strengthening the conclusion that illness perception is an independent determinant of return to work irrespective of the diagnosis and prognosis.

In this relatively small study, a quarter of eligible employees refused to take part so that self-selection bias cannot be ruled out. There was also a bias towards public sector employees and the majority of employees were female; however, there is no reason to believe that their perceptions about illness are likely to be different from other employees or males. Nine OPs took part in the study reducing the potential bias of one or two doctors' opinions, although the questions could have been interpreted differently by them or in a consistently biased way, such as a tendency to favour returning to work. Similarly, as no diagnostic criteria were set for diagnoses such as anxiety or depression, there was a potential for lack of consistency. Fifty-seven per cent of employees returned to work within 3 months of entering this study, but the methodology is not comparable to studies that have shown that only 50% of patients who are off work for 6 months or more return to work [15]. Prolonged symptom reporting and a poor response to rehabilitation have been reported in patients with chronic back pain who do not enjoy their work [16] so it may be important to ascertain if there is an association between negative perceptions of illness and low enjoyment of work.

The illness perception part of the questionnaire was based on the BIPQ, which has been shown to have good test-retest reliability in renal patients and good predictive validity in patients recovering from myocardial infarction with regard to attending rehabilitation and returning to work [3].

In conclusion, we believe that this study demonstrates that if OPs are successfully to facilitate return to work by employees on sick leave not only must they ensure that the primary illness and any co-morbid mental illness are iden-

tified and adequately treated and that obstacles to returning to work are identified and tackled but they must also detect and appropriately address any unhelpful negative perceptions employees hold about their illness or returning to work.

Key points

- Employees on sick leave had more negative perceptions about their illness than their occupational physicians.
- Employees with negative perceptions about their illness were less likely to return to work than those with positive ones.
- Negative perceptions may be more disabling than the illness and need to be addressed to facilitate an early return to work.

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Conflicts of interest

None declared.

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