

# Do attitudes and beliefs influence work loss due to low back trouble?

T. L. Symonds,\* A. K. Burton,\* K. M. Tillotson\* and C. J. Main†

\**Spinal Research Unit, The University of Huddersfield, Huddersfield, HD1 3DH, UK;* †*Department of Behavioural Medicine, Hope Hospital, Salford Royal Hospitals NHS Trust, Salford, M6 8HD, UK;* †*Rheumatic Diseases Centre, University of Manchester, Manchester, UK*

Recent evidence indicates that the influence of psychosocial factors on low back disability is as great as, if not greater than, ergonomic aspects; negative attitudes and beliefs are likely to be related to absenteeism. To measure workers attitudes and beliefs about low-back trouble, pain, work and activity five questionnaires were used. Two new instruments (Back Beliefs Questionnaire and Psychosocial Aspects of Work questionnaire) were developed and tested. The attitudes and beliefs were measured among workers in a biscuit manufacturing factory, and the responses related to absenteeism. Workers who had taken in excess of one week's absence due to low-back trouble had significantly more negative attitudes and beliefs when compared with workers who had taken shorter absence (or indeed those reporting no history of back trouble). A subset of the psychosocial parameters accounted for 32% of the variance in absence. Interventions designed to reduce negative attitudes and promote positive beliefs may help to reduce detrimental, inappropriate longer-term absenteeism due to low-back trouble.

**Key words:** absence, attitudes, back pain, beliefs, low back trouble, psychosocial, work loss, industry

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## INTRODUCTION

The problem of low back trouble (LBT) appears to be growing throughout industrialized countries. Absenteeism is increasing exponentially; for instance in 1993, 81 million working days were lost in Great Britain due to LBT,<sup>1</sup> an increase of 21% on the previous year. This increasing trend of absence, which is common to other countries such as the United States<sup>2</sup> and Sweden,<sup>3</sup> has been occurring for more than two decades, yet there is no evidence to suppose that back pain *per se* is increasing. Doubtless secondary gains on offer to the injured worker complicate the issue,<sup>4</sup> nevertheless the growth in absence/disability has to be

seen against a background of substantial research effort aimed at a better understanding and management of the disorder; much work in the fields of biomechanics, ergonomics and clinical medicine has resulted in better working environments and more sophisticated therapeutic strategies. However, the impact of this knowledge and its application has been conspicuous by the failure to adequately manage the problem. Clearly, the fundamental reasons underlying absence/disability are not being tackled.

In a pragmatic sense, LBT has two quite separate components—the clinical syndromes (characterized by pain), and the disability (reflected in absence). Each of these may have different determining factors. The physical symptoms are presumed to result from some sort of pathological process triggered by physical factors, whereas the disability often is probably under the control or predominantly controlled by psychosocial factors.<sup>5</sup> As far as social economics are concerned it is the disability which is the major problem. Confusion

Correspondence and reprint requests to: Dr K. Burton, 30 Queen Street, Huddersfield HD1 2SP, UK. Phone: +44 (0)1484 424329; Fax: +44 (0)1484 435744.

between pain and disability will maintain the commonly held set of beliefs that physical stress (or work) must be avoided to prevent further damage (beliefs seemingly still held by many physicians as well as patients).<sup>6</sup> It is becoming apparent that work is not necessarily detrimental for back pain recovery,<sup>7,8</sup> so if a proportion of the sickness absence may be considered inappropriate (in medical terms) then substantial savings are possible by reducing the length of absence to the minimum required.

Attitudes towards pain,<sup>9,10</sup> and beliefs about pain<sup>5,11</sup> have been highlighted as relevant to the recovery process and return to work. A positive attitude towards recovery has also been considered important in rehabilitation.<sup>5</sup> The idea that attitudes and beliefs may affect behaviours is not new<sup>12</sup> but their influence on LBT recovery has so far not been specifically investigated. Thus individuals who believe that activity may do further damage to their troublesome back are likely to adopt a regime of rest and extended absence; inactivity for LBT recovery is not in general an appropriate strategy. Indeed, 2 days bed rest for LBT has been found to be more beneficial than longer periods in bed,<sup>6,13</sup> and the UK's Health and Safety Executive<sup>14</sup> have recommended that early return to work is advisable when recovering from LBT. It has been suggested that individuals with negative beliefs about work activity (in relation to their LBT) who have previously taken more than 2 weeks absence should be classed as 'high risk' cases for chronicity.<sup>7</sup> Work issues may also be important; results from industrial surveys have indicated that the incidence of LBT is related to poor job satisfaction<sup>15,16</sup> and mental stress.<sup>17,18</sup> Successful identification of those factors predictive of longer-term absence (which are amenable to change) will then necessitate disentangling the psychosocial aspects of work from attitudes and beliefs about pain, LBT and disability.

Attempts to explore the disability component seem justified, notwithstanding a need for continued work directed towards management and prevention of the clinical syndromes. Identification of inappropriate attitudes and beliefs that foster a reluctance towards early return to work is likely to be a prerequisite for effective interventions to limit the disability associated with LBT. This paper reports on (1) the development of new instruments specifically measuring a range of beliefs and attitudes related to LBT, and (2) their use in exploring the relationship of these parameters to absence rates in a manufacturing plant. The working hypothesis was that workers with a more negative psychosocial profile tended to have longer absence due to LBT.

## METHODS

### Instruments

Measurement of a variety of attitudes and beliefs about

pain, disability, LBT and work required a number of instruments, some of which were newly developed for the purposes of this study. Because it has been stated that different scaling systems can cause confusion and increase the time taken to complete the instruments,<sup>19</sup> a 5-point Likert scale<sup>20</sup> was used throughout; each statement being answered by circling a number from 1 (strongly disagree) through 5 (strongly agree). The scores were subsequently rearranged so that negative attitudes and beliefs were represented by low scores.

*Back Beliefs Questionnaire (BBQ):* This is a new instrument designed to measure an individual's beliefs about LBT, and can be used whether or not there is a history of LBT. Its primary objective is to investigate beliefs about various inevitable aspects of the future as a consequence of LBT (e.g. 'Back trouble will eventually stop you from working'). The scale comprises nine inevitability statements (along with five statements used as distractors).

*Psychosocial Aspects of Work questionnaire (PAW):* This new instrument was based on the 7-item Work APGAR described by Bigos *et al.*<sup>21</sup> (which was mainly concerned with job satisfaction). The 15 statements on this new version reflected attitudes towards three specific aspects of work: general job satisfaction, social support from colleagues/managers, and the mental stress of work.

*Modified Roland & Morris Disability Questionnaire (RMDQ.att):* The original (clinical) instrument measured the extent of disability due to LBT, in terms of activities of daily living.<sup>22</sup> It was modified simply by altering the wording to make the 23 statements attitudinal. For example the original 'I sit down for most of the day because of my back' became 'Back trouble means to me: Having to sit down for most of the day'.

*Fear-Avoidance Beliefs Questionnaire (FABQ):* This instrument concentrates on an individual's beliefs about physical activity or work activity being a cause of their trouble, and on their fears about the dangers of such activities when they have an episode of LBT.<sup>5</sup> There are two subscales: Physical Activity (FABPHYS, four items) and Work Activity (FABWORK, 7 items).

*Pain Locus of Control (PLC):* This instrument, derived from social learning theory, assesses the extent to which an individual perceives himself or herself as having influence over external events. There are two subscales, each placing the individual on an internal/external dimension.<sup>23</sup> The Pain Control scale (PLCPC, 10 items) concerns perceived controllability of pain; the Pain Responsibility scale (PLCPR, 5 items) evaluates perceived responsibility for management of pain.

## VALIDATION

### Instrument development

The new instruments (BBQ and PAW) were tested for validity, and their level of internal consistency and reliability established. Modifications to those instruments previously validated were checked for effects of minor alterations made to wording (RMDQ.att) or scoring (RMDQ.att, FABQ, PLC). Various groups were used to develop the instruments:

(1) The component structure of BBQ was explored using Principal Component Analysis on the responses of 158 individuals from various occupational backgrounds, and then on data from the 466 employees in a biscuit factory. The reliability was estimated with Cronbach's  $\alpha$  statistic.

Test-retest analysis was also carried out on BBQ using a subgroup ( $n=77$ ) of the initial 158 workers. The intra-class correlation coefficient uses one-way analysis of variance to isolate the component of variance due to inconsistency of subject scores over the test-retest period.

(2) The development of the Psychosocial Aspects of Work (PAW) instrument was carried out on a working population of 603 persons (120 industrial workers and 483 nurses). Principal Component Analysis was used to confirm the reliability of the designated subscales.

(3) The modified Roland & Morris Disability Questionnaire, the Fear-Avoidance Beliefs Questionnaire and the Pain Locus of Control instrument were tested for internal consistency (Cronbach's  $\alpha$ ) using the 120 of the workers who helped with the pilot study development of PAW.

### Industrial study

A large biscuit factory, situated in the north of England participated in the research. The company had a well structured occupational health unit. A total of 466 employees agreed to complete a booklet which contained the five psychosocial instruments, together with questions on age, sex, occupation and back pain history. Absence due to LBT in the last year was obtained by a self-report pro forma, and was categorized as 'nil absence' (0 days), 'low absence' (1–7 days) or 'high absence' (more than one week); subsequent checking against the factory's sickness absence records confirmed the accuracy of the self-reports.

Statistical analysis included the use of the  $t$ -test,  $\chi^2$  test and analysis of variance (ANOVA), as appropriate. Duncan's multiple range test was used to determine which mean scores from the ANOVAs were significantly different. Principal Component Analysis was used to identify underlying structures and for data reduction.

The analysis of the mean psychosocial scores was carried out for factory and office employees separately. Stepwise multiple regression was used to establish a

**Table 1.** Reliability of the psychosocial instruments as estimated using Cronbach's  $\alpha$  (BBQ,  $n=158$ ; PAW,  $n=603$ ; Others,  $n=120$ )

Instrument	alpha
BBQ—Inevitability Beliefs	0.70
PAW—Job Satisfaction (PAWJS)	0.88
PAW—Social Support (PAWSS)	0.77
PAW—Mental Stress (PAWMS)	0.76
RMDQ.att—Disability Attitudes	0.92
FABQ—Physical Activities (FABPHYS)	0.75
FABQ—Work Activities (FABWORK)	0.83
PLC—Pain Control (PLCPC)	0.85
PLC—Pain Responsibility (PLCPR)	0.65

relationship between absence (expressed as the average for each category i.e., 0 days, 4 days, and 15 days) and psychosocial mean scores. It was based only on employees who had had LBT symptoms when they completed the booklet, yet were still at work ( $n=170$ ).

The term 'significant' is reserved throughout to represent statistical significance at the 5% level.

## RESULTS

### Instrument Development

**BBQ:** Principal Component Analysis of the responses from the 158 individuals confirmed that the nine inevitability statements formed a one-dimensional component, accounting for 32% of the variability. The scale, with a Cronbach's  $\alpha$  of 0.7 (see Table 1), may be considered to have internal consistency. It has been suggested that if  $\alpha$  for an instrument is below 0.6 then the reliability of the measure may be questioned.<sup>24</sup> The intra-class correlation coefficient was 0.87; a score above 0.75 is said to represent excellent reliability.<sup>25</sup>

Principal Component Analysis of the responses from the 466 workers below gave the same one-dimensional solution, explaining 44% of the variance. Cronbach's  $\alpha$  was 0.84. The BBQ instrument is shown in the Appendix.

**PAW:** Starting from a list of 25 statements, Principal Component Analysis (using responses from the 603 subjects in the preliminary study) resulted in reduction to 15 statements. The result was a three-component solution giving the following subscales: Job satisfaction (PAWJS, seven statements); Social support (PAWSS, four statements); and Mental stress (PAWMS, four statements). See Table 1 for the  $\alpha$  scores obtained for each subscale. The PAW instrument is shown in the Appendix.

**RMDQ.att, FABQ, PLC:** The minor modifications made to these instruments did not have an adverse effect on reliability (see Table 1).

**Table 2.** Number of workers with a history of LBT ( $n=275$ ) broken down by job type, symptom status and absence during the previous twelve months (workers with missing data  $n=37$ )

Symptom-status: LBT absence	Office workers			Factory workers		
	Current LBT	Symptom-free	Total	Current LBT	Symptom-free	Total
nil: 0 days	34	32	66	72	41	113
low: 1–7 days	8	4	12	12	3	15
high: 7 + days	6	1	7	18	7	25
Totals	48	37	85	102	51	153

**Table 3.** Mean scaled scores (sd) for subscales of the attitude and belief instruments from 156 office workers. (RMDQ.att and FABQ were completed only by subjects who had had LBT)

	LBT absence in the previous 12 months (scores expressed on a scale from 0–100)			
	No LBT ( $n=70$ )	nil absence 0 days ( $n=66$ )	low absence 1–7 days ( $n=12$ )	high absence > 1 week ( $n=8$ )
<b>Attitudes</b>				
Disability Attitudes (RMDQ.att)	—	62.33 (18.73)	<u>46.55</u> (23.07)	<u>35.33</u> (32.35)
Pain Control (PLCPC)	43.95 (18.50)	<b>34.43</b> (19.90)	<b>27.70</b> (16.08)	<b>19.38</b> (14.55)
Pain Responsibility (PLCPR)	57.25 (15.95)	62.70 (20.95)	<u>48.35</u> (17.75)	<u>33.15</u> (31.15)
Job Satisfaction (PAWJS)	72.14 (22.32)	75.00 (22.50)	74.39 (24.32)	82.61 (22.14)
Social Support (PAWSS)	76.25 (16.94)	75.38 (18.19)	69.81 (20.06)	75.00 (20.88)
Mental Stress (PAWMS)	69.75 (10.29)	71.94 (19.63)	76.13 (16.00)	<u>55.50</u> (29.38)
<b>Beliefs</b>				
Inevitability (BBQ)	53.22 (20.83)	53.58 (21.47)	43.97 (20.06)	<u>33.33</u> (18.25)
Physical Activities (FABPHYS)	—	64.06 (27.88)	<u>46.88</u> (21.25)	<u>25.81</u> (29.56)
Work Activities (FABWORK)	—	82.89 (16.04)	<u>70.82</u> (22.68)	<u>56.71</u> (21.54)

With the level of significance set at 0.05, a power of 0.8, and these sample sizes, the differences in population PAWJS means for No LBT subjects vs. 0 days absence group; 0 days vs. 1–7 days absence group; 1–7 days absence group vs. >1 week absence group would have to be 10, 20, and 28 points respectively. Similar differences would be required for the other measures of attitudes and beliefs.

**Bold** type where  $p < 0.05$ : comparison with No LBT group

Underlined where  $p < 0.05$ : comparison with 0 day absence group

*Italics* where  $p < 0.05$ : comparison with 1–7 days absence group

0.05 is a global figure for each measure (based on Duncan's Multiple Range Test)

## Industrial study

Of the 466 respondents, 293 (63%) were female, 325 (70%) were aged less than 45 years, and 273 (59%) reported a history of LBT. The respondents were representative of (i.e., not significantly different from) the whole work force in terms of the distributions for age, sex, type of job and number of spells of LBT absence taken in the previous 12 months. Table 2 shows the absence rates for those office and factory workers who reported a history of LBT, together with their current symptom status. The history of LBT was similar for both occupational group (office workers 66%; factory workers 56%), of whom some 25% had taken absence in the previous twelve months. The absence rate was similar for the subgroups delineated by sex, age and occupation, but factory workers did have a slightly higher rate than the office workers. Preliminary analysis revealed some differences between the occupational groups (but not between age or sex groups) for psychosocial scores, so the results that follow are presented separately for office and factory workers.

Tables 3 and 4 show the results for the various subscales of the psychosocial instruments. For convenience, because the instruments have differing score maxima, the scores are re-expressed on a scale of 0–100, and presented under separate headings of Attitudes and Beliefs. The mean scores for subjects with no history of LBT and those from the three categories of absence were compared with one another; the means which are significantly different from the others are indicated by differing text styles.

In general, the high absence group (>1 week) showed significantly more negative attitudes and beliefs (i.e., they had significantly lower mean psychosocial scores) than workers with either no LBT or with LBT but nil absence; this was true both for office and factory workers. When low absence (1–7 days) is considered, the picture was similar, but less clear cut (Tables 3 and 4). Psychosocial Aspects of Work scores did not vary significantly with absence rates, but there was a differing trend between the occupational groups for the Mental Stress dimension; office workers scored low with high absence, whereas factory workers displayed higher scores the higher the absence. Overall,

**Table 4.** Mean scaled scores (sd) for subscales of the attitude and belief instruments from 262 factory workers. (RMDQ.att and FABQ were completed only by subjects who had had LBT)

	LBT absence in the previous 12 months (scores expressed on a scale from 0–100)			
	No LBT (n=107)	nil absence 0 days (n=115)	low absence 1–7 days (n=15)	high absence > 1 week (n=25)
<b>Attitudes</b>				
Disability Attitudes (RMDQ.att)	—	55.51 (22.92)	47.33 (20.09)	<b>35.14</b> (19.21)
Pain Control (PLCPC)	38.00 (22.25)	<b>30.73</b> (21.80)	29.05 (19.35)	<b>24.30</b> (20.73)
Pain Responsibility (PLCPR)	61.10 (24.95)	59.60 (21.90)	<b>43.95</b> (14.70)	<b>34.60</b> (22.90)
Job Satisfaction (PAWJS)	54.50 (31.04)	55.75 (30.14)	49.50 (28.93)	47.71 (33.00)
Social Support (PAWSS)	65.56 (24.88)	68.44 (22.06)	61.19 (24.50)	58.25 (23.00)
Mental Stress (PAWMS)	39.63 (25.44)	41.56 (29.44)	48.06 (18.38)	52.25 (24.69)
<b>Beliefs</b>				
Inevitability (BBQ)	41.67 (21.47)	40.14 (21.75)	42.67 (19.50)	<b>27.08</b> (20.67)
Physical Activity (FABPHYS)	—	53.63 (28.88)	65.88 (19.00)	<b>42.50</b> (28.88)
Work Activity (FABWORK)	—	65.14 (24.18)	61.75 (25.79)	<b>42.00</b> (23.79)

**Bold type** where  $p < 0.05$ : comparison with No LBT group

Underlined where  $p < 0.05$ : comparison with 0 day absence group

*Italics* where  $p < 0.05$ : comparison with 1–7 days absence group

0.05 is a global figure for each measure (based on Duncan's Multiple Range Test)

**Table 5.** Mean scaled scores (sd) for subscales of the attitude and belief instruments for workers with current symptoms and those whose symptoms had resolved. ( $p$  indicates whether the means are significantly different)

	Current symptoms (n=170)	Symptom-free (n=103)	$p$
<b>Attitudes</b>			
Disability Attitudes (RMDQ.att)	53.89 (23.96)	50.37 (21.28)	ns
Pain Control (PLCPC)	27.15 (20.20)	34.93 (20.25)	< 0.01
Pain Responsibility (PLCPR)	53.10 (23.90)	55.80 (23.20)	ns
Job Satisfaction (PAWJS)	55.43 (30.36)	66.29 (29.75)	< 0.01
Social Support (PAWSS)	64.69 (23.63)	72.88 (19.63)	< 0.01
Mental Stress (PAWMS)	53.00 (29.88)	52.50 (30.00)	ns
<b>Beliefs</b>			
Inevitability (BBQ)	40.19 (21.86)	46.50 (23.30)	< 0.05
Physical Activity (FABPHYS)	52.38 (28.50)	54.50 (30.00)	ns
Work Activity (FABWORK)	63.89 (25.96)	70.21 (24.00)	ns

the mean scores on all instruments tended to be more positive for office than for factory workers, with the exception of both subscales of the PLC instrument. Office workers had more negative beliefs about pain control and about responsibility for pain management than factory workers.

It was found that symptomatic status appeared to have an effect on psychometric scores. Subjects with current back symptoms had significantly lower scores for some variables compared with those whose symptoms had subsided. The symptomatic group were more negative in respect of LBT beliefs (BBQ), pain control beliefs (PLC) and some work attitudes (PAW)—see Table 5. Nevertheless, after controlling for symptomatic status, the relationships between absence and the psychometric measures remained.

The final step of the analysis was to identify the combination of psychosocial variables which best explained the variance in absence. The focus was only on those individuals who were suffering a current spell

of LBT at the time of completing the psychosocial questionnaires (those not currently suffering revealed no coherent pattern). The ten psychosocial variables were entered into a Principal Component Analysis, leading to a three component solution. Component 1 was loaded strongly by those variables measuring beliefs about LBT and beliefs about activity (BBQ, FABPHYS, FABWORK, RMDQ.att; factor loadings >0.61) plus an influence from pain responsibility (PLCPR; factor loading 0.49, other variables minimal loading); Component 2 was loaded predominantly by the measures for work attitudes (PAWJS, PAWSS, PAWMS; factor loadings >0.69, other variables minimal loading). Component 3 was loaded very much by pain responsibility and pain control (PLCPC, PLCPR; factor loadings >0.64, other variables minimal loading). These three components were then offered as variables in a stepwise multiple regression with LBT absence as the dependent variable. Two of the components (1 and 3) accounted for 32.2% of the variance (Table 6).

**Table 6.** Stepwise multiple regression of LBT absence for current sufferers ( $n=170$ ) on the three components obtained from Principal Component Analysis of the 10 psychosocial variables. Only two statistically significant components were retained in the analysis, (Component 2, predominantly loaded by the PAW measures was not retained)

Variable	% of variance
Component 1	
General LBT beliefs (predominantly BBQ, FABPHYS, FABWORK, RMDQ.att)	21.7
Component 3	
Pain control and pain responsibility (predominantly PLCPC, PLCPR)	10.5
Total	32.2

## DISCUSSION

Previous reports concerning the influence of psychosocial factors on absence have tended to be based on single psychometric measures, and have shown that a variety of such measures may be important. The present study explored the subject further by looking at a combination of these psychosocial measures in a survey of a general working population. No substantial differences were found between respondents and non-respondents in terms of LBT absence, job description or general demography.

The notion that time to recover from LBT (as measured by absence from work) is associated with negative attitudes and beliefs about issues surrounding their pain<sup>9,11</sup> has been supported by this study. The results demonstrated a substantial and statistically significant relationship between Pain Locus of Control and absence, such that diminished belief in the controllability of and responsibility for pain is associated with longer spells off work. A previous study<sup>7</sup> found that individuals with more than two weeks absence due to LBT had more negative beliefs about work activities in relation to their LBT, i.e. they felt that work activity could be detrimental for their back. The present study supports this finding also, and indicates that similar beliefs about physical activity in general are related to extended absence. We are not aware of any previous work which has investigated attitudes towards the disabling effects of LBT in relation to absence, but here we found evidence that a perception of LBT being a disabling condition (RMDQ.att) was associated with longer absence.

Previous studies have related the reporting of LBT to poor job satisfaction<sup>15,16</sup> and high mental stress;<sup>17,18</sup> we expected to find the same relationship for absenteeism. However, no clear relationship was found. The trend for factory workers with longer absence to have lower job satisfaction and higher mental stress was reversed in the office staff, suggesting that satisfaction and stress not only differ among jobs but may have differing relative effects. Social support at work has been investigated by Udén *et al.*<sup>26</sup> who found an increase in general absence related to a perception of

poor social support; a similar trend was found here in respect of absence due to LBT, but only in the factory workers. It is clear that more research is required to unravel the complex associations between psychosocial aspects of work and LBT. The new PAW questionnaire described here permits investigation of the various issues in one instrument, and so may be found useful in such studies.

Exploration of specific beliefs about the inevitable consequences of back trouble appears not to have been undertaken previously. This aspect of LBT (measured here by BBQ) is closely related to absence rates, and the new Back Beliefs Questionnaire is presented as a reliable measure for use by others in the field.

Admittedly, the retrospective nature of the absence data does not enable us to state categorically that locus of control or negative attitudes and beliefs were responsible for the higher absence rates; it is possible that these parameters may have been influenced simply by the longer periods off work. However, it is notable that workers with current symptoms (though having returned to work) retained a tendency to have little confidence in the possibility for controlling pain or taking responsibility for it, and also retained more negative attitudes and beliefs than did those whose symptoms had resolved. This suggests that these parameters are not simply a result of long absence; rather they may be a fundamental part of an individual's psychological outlook, and could herald long absence for any recurrences of LBT. The recurrent nature of LBT is known to be common,<sup>27</sup> so management of the psychosocial parameters of an episode may be important to limit future absence. In addition, previous work by Troup *et al.*<sup>28</sup> has highlighted the employee returning to work with persisting back symptoms (and certain clinical signs) as being at high risk of further absence.<sup>24</sup> In the present group of symptomatic workers, the significant 32% of variability in absence explained just by psychosocial variables, adds a further dimension to that earlier report, and supports the view that such individuals may deserve special attention to reduce subsequent absence.

A detailed consideration of the structure of the new instruments and the relationships between the various measures of attitudes and beliefs is being undertaken by the present authors. However, it seems reasonable to propose, on the basis of the results presented here, that strategies designed to promote positive attitudes and reduce negative beliefs could be a simple cost-effective means for reducing absence due to LBT, thus offering a new approach to the reduction of escalating back disability. We have now embarked on a prospective industrial study to explore this notion.

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## APPENDIX 1: BBQ

We are trying to find out what people think about low back trouble. Please indicate your general views towards back trouble, *even if you have never had any*.

Please answer *ALL* statements and indicate whether you *agree* or *disagree* with each statement by circling the appropriate number on the scale. 1=COMPLETELY DISAGREE 5=COMPLETELY AGREE.

1	2	3	4	5
COMPLETELY DISAGREE				COMPLETELY AGREE
Disagree Agree				
1	2	3	4	5
1	2	3	4	5
1	2	3	4	5
1	2	3	4	5
1	2	3	4	5
1	2	3	4	5
1	2	3	4	5
1	2	3	4	5
1	2	3	4	5
1	2	3	4	5
1	2	3	4	5
1	2	3	4	5
1	2	3	4	5
1	2	3	4	5
1	2	3	4	5

The inevitability measure comprises 1 scale using a sub-set of 9 items.

Items: 1, 2, 3, 6, 8, 10, 12, 13, 14.

The scale is calculated by reversing and summing the 9 scores.

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## APPENDIX 2: PAW

Below are statements which help us understand your general work situation.

Please answer *ALL* statements and indicate whether you agree or disagree with each statement by circling the appropriate number on the scale ranging from 1=COMPLETELY DISAGREE to 5=COMPLETELY AGREE.

Remember your employer(s) and immediate boss will NOT see your answers.

1	2	3	4	5
COMPLETELY DISAGREE				COMPLETELY AGREE
Disagree Agree				
1	2	3	4	5
1	2	3	4	5
1	2	3	4	5
1	2	3	4	5
1	2	3	4	5
1	2	3	4	5
1	2	3	4	5
1	2	3	4	5
1	2	3	4	5
1	2	3	4	5
1	2	3	4	5
1	2	3	4	5
1	2	3	4	5
1	2	3	4	5
1	2	3	4	5

There are three sub-scales; each is calculated by summing the appropriate item scores.

1. Job Satisfaction = items: 1, 2, 4, 7, 10, 12 and 14.

2. Social Support = items: 3, 5, 8 and 15.

3. Mental Stress = items: 6, 9, 11 and 13.

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