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'Reassurance and healthcare seeking in people with persistent musculoskeletal low back pain consulting orthopaedic spine practitioners: A prospective cohort study'

Kathrin Braeuninger-Weimer[1] | **Hanna Rooslien**[1] | **Naffis Anjarwalla**[2] | **Tamar Pincus**[1]

[1]Department of Psychology, Royal Holloway, University of London, London, UK

[2]Department of Orthopaedics, Wexham Park Hospital, Slough, UK

***Correspondence**
Professor Tamar Pincus, Department of Psychology, Royal Holloway, University of London, Egham, Surrey, TW20 0EX, UK.
Email: T.Pincus@rhul.ac.uk

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Abstract

Background: Guidelines recommend self-management for most people living with persistent musculoskeletal low back pain (PMLBP) when surgery is ruled out. Conveying this message to patients can be challenging. This study examined patients' perceptions of reassuring communications from surgical spine team practitioners attempting to deliver this message in a single consultation.

Methods: Pre-consultation baseline measures included levels of pain, disability and previous consultation history. Patients' perceptions of reassuring communications were measured within 1-week post-consultation. The outcome variables, measured at 3-month follow-up, included patients' report of subsequent GP visits for back pain, the number of other healthcare providers consulted for back pain and distress.

Results: Data from 296 patients (9.8% loss to follow-up) were analysed using hierarchical regression models, controlling for demographic, clinical and study-related factors. In each model, perceived reassurance accounted for a small but significant variance, above and beyond other predictors. Further GP visits were predicted by disability at baseline and perceived reassurance (adjusted R^2 of 14.6%). Subsequent consultations with any healthcare professionals were predicted by a shorter duration of back pain, disability at baseline and perceived reassurance (adj. $R^2 = 10.6\%$). Distress was predicted by older age, disability and reassurance (adj. $R^2 = 59.5\%$).

Conclusion: Findings suggest that better communication in consultations with orthopaedic spine clinicians might help reduce unnecessary subsequent healthcare utilization and distress.

Significance: Low back pain patients' perceptions of their communication with orthopaedic spine practitioners are associated with subsequent healthcare seeking and distress at follow-up. This study examines the intersection of two important but fairly neglected areas in the pain research: provider communication and patient healthcare utilization.

1 | INTRODUCTION

Musculoskeletal low back pain (MLBP) remains the leading contributor to years lived with disability (Hoy et al., 2014). For most people, there is no cure that can relieve pain permanently, and higher levels of pain-related disability are strongly associated with greater usage of healthcare services (Blyth et al., 2004). Patients often get stuck in a vicious circle of care and cure seeking (Clare et al., 2013), resulting in high healthcare utilization, and major clinical and economic costs, in addition to the personal suffering (Croft et al., 2010). In the absence of a cure, the majority of guidelines recommend that clinicians provide reassurance, advice to keep active and guidance on self-management (NICE, 2016; Savigny et al., 2009).

Delivering effective reassurance to people who have lived with pain and disability for a long time is difficult. Common advice about likely recovery is unhelpful. There are no guidelines on what constitutes effective reassurance for such patients, or on how to deliver it (Oliveira et al., 2018), and it remains a neglected area of research (Linton et al., 2008). Reassurance is conceptualized as a set of practitioner's behaviours that aim to reduce patients concerns (Linton et al., 2008), and for back pain, research suggests that it includes components around data gathering and relationship building, but also clear explanations, a management plan, validation of the pain experience and where appropriate, positive messages aimed to increase self-efficacy (Braeuninger-Weimer et al., 2019; Pincus et al., 2013). Such reassuring behaviours may be particularly important when delivered by practitioners who believe they have no interventions left to try, often conceptualized as 'end of the line' consultations about possible spine surgery, because they aim to help empower patients towards self-management.

Studies on consultation-based reassurance in primary care have shown associations between specific components of reassuring behaviours and outcomes (Pincus et al., 2013), and in LBP specifically, there is evidence suggesting that these effects may differ for people with different psychological risk profiles (Holt et al., 2018). Findings from a qualitative study in orthopaedic settings suggest that these teams see some of the most challenging and complex patients with persisting and debilitating LBP, and that in the absence of a surgical option, these patients require comprehensive and specific reassurance (Braeuninger-Weimer et al., 2019). For these patients, reassurance and good communication skills were perceived as pivotal to their willingness to engage with self-management, their subsequent well-being and their healthcare seeking behaviours. While reassuring consultations in these circumstances are unlikely to impact on the experience of pain, they may act to reduce further healthcare utilization. For these reasons, this study focused on patients consulting spinal orthopaedic outpatient clinics, where surgery was ruled out. The hypothesis was that there would be a negative association between perceived total reassurance and (a) the primary outcomes; the number of subsequent consultations with general practitioners for back pain and the number of different types of practitioners consulted, and (b) emotional distress (the secondary outcome). The primary outcomes were selected because, in the United Kingdom, GPs are almost always the first port of call and the main gatekeeper to other care, and theoretically, effective reassurance towards self-management should result in reduction in consecutive consultations.

2 | METHODS

2.1 | Design and recruitment

The study employs a prospective observational cohort design with PMLBP patients who attended secondary care spine orthopaedic clinics for their first appointments. Patients were recruited between June 2017 and June 2019 from eight hospitals. Participating hospitals employed three orthopaedic teams specializing in spine care, including 13 surgeons (11 men and 2 women) and nine advanced physiotherapy practitioners (APP) (7 women and 2 men). The study was granted ethical approval from NHS Bromley Research Ethics Committee (16/LO/1833) and by the ethics committee at Royal Holloway, University of London. The study was adopted to the National Institute for Health Research (NIHR) portfolio and all data were collected by a designated trained researcher, and nurses from the Comprehensive Local Research Network (CLRN).

Letters of invitation and information sheets were sent to all patients who had an appointment with the specialized outpatient back clinic in the following week. Patients who were interested in taking part arrived early to complete baseline questionnaires, after providing written informed consent. Pre-consultation, full eligibility could not be ascertained, as this depended on the consultant reviewing patients MRI scans to identify the cause of their back pain. The eligible cohort for the study was, therefore, determined post-consultation, by the consultant confirming that patients had musculoskeletal PLBP, and that they were unsuitable for surgery. The inclusion and exclusion criteria were as follows:

2.1.1 | Inclusion

1. PMLBP unsuitable for surgery (confirmed by consultant) being the main complaint and reason for consulting
2. Adult patients (18 years and above)

2.1.2 | Exclusion

1. Previous spinal surgery
2. Cauda equina and ankylosing spondylitis

3. Pregnancy
4. Severe disability or end-of-life disorders
5. Cognitive impairment
6. Unable to read or speak English
7. Back pain of all causes other than musculoskeletal, and those suitable for surgery.

The researcher called patients for their post-measures within 1 week of their consultation and again at 3-month follow-up. Patients for whom surgery was indicated and those who were referred for further investigations were excluded at the post-consultation interview (Figure 1 for participant flow chart).

3 | MEASURES

3.1 | Baseline measures

Demographic information included age, gender, marital status, education status, work status and whether patients suffered from other serious health issues. Participants were also asked about their history and healthcare journey, which included questions about the length of their current episode, the overall years lived with LBP, the number of previous consultations, the type of previous treatments received and whether or not they had received an imaging scan and expected surgery to be discussed. Patients also provided scores on average weekly pain (numeric 11-point scale (Jensen et al., 1986); disability (Roland-Morris Disability Questionnaire (RMDQ) (Roland & Morris, 1983) and distress (Hospital Anxiety and Depression Scale (HADS) (Zigmond & Snaith, 1983). The HADS scores were treated as a single total measuring distress, based on recent recommendations (Cosco et al., 2012).

3.2 | Post-consultation

The measure of reassurance was based on the definition adapted from Linton et al., (2008), in which reassurance is defined as a set of behaviours carried out by practitioners, which aims to reduce concerns in patients. Previous research (Pincus et al., 2013) led to the identification of these behaviours, and subsequently to the development of measure that captured them from the point of view of the patient (Holt & Pincus, 2016). This measure, the consultation-based reassurance questionnaire (CRQ) (Holt & Pincus, 2016) was used in this study. This is a 12-item questionnaire, including four subscales each with three items: data gathering (DG) (e.g. to what extent did the physician… 'encourage you to voice your concerns regarding your symptoms?'); relationship building (RB) (… 'show a genuine interest in your problem); generic reassurance (GR), the provision of reassurance about positive outcome without providing any specific information (… 'tell you that there is no need to worry') and cognitive reassurance (CR), the provision of explanation and treatment plan (… 'make sure you understood their decision about management options'). The measure is scored on a numeric item response from one (not at all) to seven (a great deal). On each subscale, the scores ranged between 3 and 21. The measure has been developed, tested and validated in primary care (Holt et al., 2018; Holt & Pincus, 2016). All four subscales showed good validity within the Rasch models (approx. 0.8), and good reliability and strong test–retest reliability (intraclass correlation coefficients (ICCs) above 0.70). Scores on all four subscales were significantly positively correlated with scores on established back pain questionnaires (satisfaction and enablement), indicating good external validity (Holt & Pincus, 2016). In this study, the total reassurance score was used for analyses instead of using each subscale, to avoid issues around multicollinearity, as subscales and total are all highly correlated. Patients also provided a measure of their acceptance of the explanations and diagnosis received, by providing responses on the following questions: whether they received 'a clear label/diagnosis for my back pain (yes/no)', 'a clear explanation about why I have back pain (yes/no)' and if they believed that 'there is something else going on with my back, which has not yet been diagnosed (yes/no)' (Serbic & Pincus, 2013). Patients also responded on a 5-point scale, ranging from 'strongly disagree' to 'strongly agree', to the item 'I felt reassured by my consultation with this physician'. Finally, patients were also asked about the advice and referrals they received from the consultant in terms of further treatment plans and whether they considered to seek further care (yes/no).

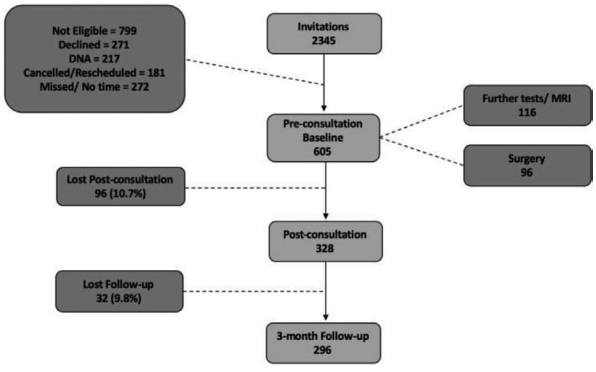

FIGURE 1 Participant flow chart

3.3 | Measures at follow- up

At 3-month post-consultation, the primary outcome measure was self-report of the number of consultations with general practitioners for LBP since the consultation in orthopaedic

TABLE 1 Participants baseline characteristics ($N = 296$)

Variable	Baseline measure
Age *M* (*SD*)	55.6 (17.04)
Range	19–88
	Missing =2 (0.7)
Gender *N* (%)	172 (58.1) women
	124 (41.9) men
	Missing =0
Marital Status *N* (%)	44 (14.9) single
	32 (10.8) cohabiting
	163 (55.1) married/Civil Partnership
	26 (8.8) divorced
	23 (7.8) windowed
	5 (1.7) other
	Missing =3 (1.0)
Education *N* (%)	110 (37.2) left school before 16
	53 (17.9) A level or equivalent
	114 (38.5) higher education
	Missing =19 (6.4)
Work Status *N* (%)	158 (53.4) employed
	17 (5.7) looking after home/family
	97 (32.8) retired
	5 (1.7) student
	12 (4.1) unemployed (health reasons)
	6 (2.0) unemployed (other)
	Missing =1 (0.3)
Other serious health issues *N* (%)	191 (64.5) none
	81 (27.4) 1
	23 (7.8) 2+
	Missing =1 (0.3)
Told cause/diagnosis of LBP *N* (%)	176 (59.5) yes
	118 (39.9) no
	Missing =2 (0.7)
Imaging tests *N* (%)	255 (86.1) yes
	40 (13.5) no
	Missing =1 (0.3)
Overall years lived with LBPM (*SD*)	10.46 (12.0)
	Missing =40 (13.5%)
Duration *N* (%)	22 (7.4) <1 month
	74 (25.0) 1–6 months
	197 (66.6) >7 months
	Missing =3 (1.0)
Previous consultations *N* (%)	74 (25.0) 1–2
	80 (27.0) 3–5
	61 (20.6) 5–10
	78 (26.4) 10+
	Missing =3 (1.0)
Type of previous treatments, *N* (%)	
Physiotherapy	193 (65.2)
Osteopath	122 (41.2)
Injections	104 (35.1)
Yoga	87 (29.4)
Acupuncture	73 (24.7)
Pain specialist team	29 (9.8)
Psychologist	8 (2.7)
	Missing =1 (0.3)

care. The choice of 3-month follow-up was in line with previous cohorts that researched consultation-based reassurance from different groups of practitioners for people with chronic low back pain (e.g. Holt et al., 2018). We considered that for this population of high care seekers, 3 months was the longest we could realistically consider that the message from our index consultation might hold influence, against other messages delivered by other healthcare providers. Patients also reported whether they had consulted other practitioners for their back pain, either within the National Health Service or privately (options of surgeon, osteopath, physiotherapist, pain specialist team, accident and emergency hospital visits, other). We could not calculate the total consultations received by the sample because we did not ask how many times each professional was seen. Thus, we only gained information on the number of different practitioner types that patients consulted. In addition, participants provided measures for pain intensity, disability and distress, using the same measures as baseline. Finally, patients were also asked to report how many sick days they had taken because of their LBP in the past 3 months.

4 | PLANNED STATISTICAL ANALYSES

Statistical analyses were performed using SPSS version 23 (IBM Corp, 2015). Missing values were below 10% for most variables (please see Tables 1 and 2 for % of missing values) and hence excluded from the analyses instead of using multiple imputation procedures (Karahalios et al., 2012).

TABLE 2 Baseline, post-consultation and 3-month measures ($N = 296$)

Variable	Baseline	Post-consultation	Follow-up
Pain *M* (*SD*)	5.70 (2.51)		5.07 (2.69)
	Missing =1 (0.3%)		Missing =1 (0.3%)
Distress *M* (*SD*)	12.05 (7.57)		12.27 (9.10)
	Missing =5 (1.7%)		Missing =5 (1.7%)
Disability *M* (*SD*)	10.12 (5.99)		11.53 (6.85)
	Missing =2 (0.7)		Missing =2 (0.7)
Reassurance, *M* (*SD*)		17.23 (4.6)	
Data Gathering (DG)		17.19 (4.75)	
Relationship Building (RB)		13.95 (5.50)	
Generic Reassurance (GR)		16.20 (5.17)	
Cognitive Reassurance (CR)		63.87 (17.84)	
Total		Missing =1 (0.3%)	
Intention to re-consult elsewhere *N* (%)		No =115 (38.9)	
		Yes =174 (58.8)	
		Missing =7 (2.4)	
GP visits *M* (*SD*)			0.71 (1.51)
			Missing =0
Healthcare utilization *M* (*SD*)			0.73 (0.94)
			Missing =0
Sick days for back pain ($n = 163$) *M* (*SD*)			11.09 (25.02)
			Missing =0

Preliminary assumption checking included the assessment of univariate outliers, inspections of histograms and Q-Q Plots to see if data are normally distributed. Corrections included situations were ±3 *SD* standardized outliers had to be removed or variables had to be transformed because they were not normally distributed. For the primary analysis, an additional regression using GP visits as a binary outcome was used, because of the large number of zero scores.

Further GP visits and the number of other types of practitioner consulted within the 3-month follow-up were the primary outcomes. The secondary outcome was distress at 3 months. Adjusted multiple hierarchical linear regression models were utilized in which clinical baseline factors, demographic factors, pathway site and referral (yes/no) were entered in blocks before entering reassurance. In the adjusted model covariates were entered sequentially:

1. Block 1: Pathway site, consultant profession and whether a referral for (non-surgical) treatment was offered.
2. Block 2: Age, gender, education, duration, number of different types of previous treatments, pain, disability and distress at baseline.
3. Block 3: Reassurance total.

To explore whether perceived reassuring behaviours from practitioner resulted in a change in concerns about back pain, we carried out two analyses. The first analysis was an independent *t* test with total reassurance as the dependent variable, between those who persisted in believing that there was something serious, yet undiscovered, wrong with their back, and those who did not hold this belief. The second analysis concerned a correlation between patients' responses to a single item asking if they felt reassured post-consultation (5-point scale) and total reassurance. In addition, Hotelling's T^2 (one-way MANOVA's) were used to examine whether there were differences in perceived reassurance between patients referred elsewhere and those discharged without any treatment recommendations.

5 | RESULTS

Of a sample of 328 eligible patients, 296 provided full data sets (see Table 1 for participant characteristics). Out of the total, 123 (41.6%) had been discharged without any offer of alternative treatment and 173 (58.4%) were referred elsewhere. Of those patients who were referred for further treatment, 52 (20.1%) did not receive their treatment at 3-month follow-up, 64 (52.9%) patients received a series of/ an injection, 55 (45.5%) had physiotherapy, 12 (9.9%) saw the pain management team, 7 (5.8%) patients were referred for another opinion, 6 (5%) patients were referred to Yoga, Pilates and/or

hydrotherapy and 7 (5.8%) were prescribed new painkillers (several patients received more than one of these options).

5.1 | Description of participants (Baseline)

Reported levels of pain and disability were moderate (see Table 2). On average, patients lived 10 years and 5 months in pain. More than a third reported having at least one other health issue. Forty percent reported that they were not given a diagnosis or an explanation about the cause of the problem prior to the consultation. The majority of the participants (86%) had received an imaging scan, in almost all cases this was an MRI scan. This sample was characterized by a history of repeated consultations. More than 70% of the participants had already seen three other practitioners from a range of expertise for their back pain, and around 26% had seen more than 10 other practitioners prior to this consultation. The most common treatments previously tried were physiotherapy, osteopathy, injections, acupuncture and yoga. In total, 160 (54%) patients entered their consultation not expecting surgery to be offered, 71 (24%) were unsure, and 48 (16.3%) expected surgery. Post-consultation, 69 (23.3%) patients said they did not receive an explanation for their LBP, 60 (20.3%) said they disagreed with the explanation that they were given and 113 (38.2%) stated they believed there is something else that is going on with their back, which has not been diagnosed. Patients who agreed with this statement perceived significantly less total reassurance than those who disagreed ($t(282) = 7.198$, $p < .001$). Patients' scores on the single item asking about the level to which they felt reassured by the consultation were highly correlated with the CRQ total score ($r_s(291) = 0.708$, $p < .001$). The majority of patients (174, 58.8%) reported having the intention to re-consult elsewhere. Out of 296 people who were followed up, 133 did not work.

The mean total scores on each of the reassurance subscales can be found in Table 2. There was a significant difference in perceived reassurance between those who received a referral to another treatment, and those who did not ($F(4, 290) = 3.254$, $p = .012$; Wilks' Lambda (Λ) = 0.957; partial $\eta^2 = 0.043$). Of those patients who were discharged with no treatment offered ($n = 123$), 69 (56.1%) stated they sought healthcare elsewhere: 37 (30%) went back to their GP, (19 patients only went back once, 7 went back twice and 11 patients went back more than three times, within the 3 months to follow-up). Out of the 173 patients who were referred for other treatments, 55 (31.8%) re-consulted their GP for their LBP in the 3-month follow- up: 27 stated they only saw the GP once, 12 patients said they saw their GP twice and 16 stated they saw their GP three times or more. In addition, out of those 175 patients who were discharged or did not receive their treatment within 3 months from the consultation, 16 (9.1%) re-consulted with a surgeon, 32 (18.3%) patients saw a physiotherapist, 5 (2.8%) saw a pain specialist team, 15 (8.6%) consulted an osteopath or chiropractor and 9 (5.1%) patients reported having gone to hospital A&E.

5.2 | Regression analysis, primary outcomes (GP visits and healthcare utilization)

The correlation coefficients for outcome measures and reassurance are displayed in Table 3. Regression parameters estimates from the adjusted linear regression analyses are shown in Table 4. The data on GP visits were strongly positively skewed; therefore, the log transformation was applied in an attempt to correct for this problem but the transformation was not successful and results stayed consistent, so the raw data were entered as a continuous outcome variable. There was no evidence of multicollinearity, as indicated by correlation coefficients below 0.7, tolerance values greater than 0.1 and VIF values below 10.

5.3 | GP visits

The adjusted model significantly predicted GP visits, $F(12, 254) = 4.781$, $p < .001$. Block 1, $F(3, 263) = 3.040$, $p = .030$, significantly predicted 3.4% of the variance in GP visits at 3-month follow-up. The addition of baseline characteristics (Block 2) significantly predicted a further 12.9% of the variance, $F(11, 255) = 4.501$, $p < .001$. Adding reassurance (Block 3) significantly increased the predictive power of the model by 2.2%. The full model significantly explained 18.4% of the variance in GP visits, with an adjusted R^2 of 14.6%. In the final model, patients who were more disabled at baseline ($p = .001$) and those who perceived less reassurance ($p = .009$) reported more GP visits at 3-month follow-up.

A large proportion of the sample reported they had not been back to their GP (although of those, 121 patients

TABLE 3 Correlation coefficient for reassurance measure and outcome variables ($N = 291$)

Outcome variable	Data G.	Relationship B.	Generic R.	Cognitive R.	Total Reassurance
Distress	−0.338**	−0.365**	−0.332**	−0.310**	−0.382**
GP visits	−0.201**	−0.205**	−0.162**	−0.145*	−0.201**
Healthcare utilization	−0.198**	−0.156**	−0.185**	−0.193**	−0.196**

*Correlation is significant at the 0.05 level (two-tailed).; **Correlation is significant at the 0.01 level (two-tailed).

TABLE 4 Summary of hierarchical multiple regression analysis for variables predicting outcomes at 3-month follow-up

			GP visits			Healthcare utilization			Distress
Model			***N* = 266**			***N* = 260**			***N* = 266**
Block 1: R^2			0.034			0.024			0.076
Block 2: changes in R^2			0.163			0.120			0.596
Block 3: changes in R^2			0.184			0.144			0.613
Predictors	**B**	**SE B**	**β [95% CI]**	**B**	**SE B**	**β [95% CI]**	**B**	**SE B**	**β [95% CI]**
Pathway site	0.243	0.140	0.104 [−0.033–0.519]	0.068	0.107	0.39 [−0.142–0.278]	0.693	0.738	0.039 [−0.760–2.147]
Consultant profession	−0.108	0.137	−0.047 [−0.378–0.162]	0.101	0.105	0.059 [−0.106–0.308]	0.642	0.729	0.036 [−0.795–2.078]
Referral for treatment	0.222	0.149	0.096 [−0.071–0.515]				−1.139	0.789	−0.064 [−2.692–0.415
Age	0.001	0.004	0.011 [−0.007–0.009]	−0.001	0.003	−0.016 [−0.007–0.005]	0.048	0.021	0.094* [0.006–0.090]
Gender	−0.130	0.137	−0.056 [−0.399–0.140]	−0.074	0.107	−0.043 [−0.285–0.137]	−0.354	0.726	−0.020 [−1.784–1.076]
Education	−0.101	0.141	−0.043 [−0.379–0.177]	0.093	0.108	0.053 [−0.120–0.305]	−1.341	0.745	−0.075 [−2.808–0.126]
Duration	−0.135	0.141	−0.056 [−0.413–0.143]	−0.304	0.109	−0.168* [−0.519–−0.090]	0.827	0.747	0.044 [−0.643–2.298]
Number of previous treatments	0.017	0.044	0.023 [−0.070–0.104]	0.061	0.034	0.110 [−0.006–0.128]	0.157	0.233	0.027 [−0.303–0.616]
Pain	0.059	0.033	0.130 [−0.006–0.124]	0.023	0.024	0.069 [−0.024–0.071]	−0.082	0.176	−0.023 [−0.428–0.264]
Disability	0.048	0.014	0.245** [0.020–0.076]	0.030	0.011	0.206* [0.008–0.051]	0.229	0.075	0.153* [0.080– 0.377]
Distress	0.001	0.011	0.006 [−0.022–0.023]	−0.003	0.009	−0.027 [−0.021–0.015]	0.711	0.060	0.618** [0.593–0.829]
Reassurance	−0.010	0.004	−0.164* [−0.018–−0.003]	−0.008	0.003	−0.168* [−0.014–−0.002]	−0.070	0.021	−0.143** [−0.112–−0.028]

Abbreviations: 95% CI, confidence interval; B, unstandardized regression coefficient; SE_B β, standardized coefficients.

*$p < .05$.; **$p < .001$.

reported having seen someone else). We, therefore, carried out a sensitivity regression in which GP visits were recoded into a binary variable (yes/no) and a binominal logistic regression was performed to ascertain the effects of total reassurance on the likelihood that patients re-consulted their GP at 3 months, after adjusting for Block 1 and Block 2. The model was statistically significant, $\chi^2(1) = 3.942$, $p = .047$, and explained 3.1% (Nagelkerke R^2) of the variance in GP visits with 74.1% of cases being correctly classified.

5.4 | Healthcare utilization

The adjusted model significantly predicted further care utilization, $F(11, 249) = 3.804$, $p < .001$. Block 1, $F(2, 258) = 3.161$, $p = .044$, significantly predicted 2.4% of the variance in healthcare utilization at 3-month follow-up. The addition of baseline characteristics (Block 2) significantly predicted a further 9.6% of the variance, $F(10, 250) = 3.398$, $p = .001$. Adding total reassurance (Block 3) significantly increased the predictive power of the model by 2.4%. The full model significantly explained 14.4% of the variance in healthcare utilization, with an adjusted R^2 of 10.6%. In the final model, patients who had pain less than 6 months in duration ($p = .006$), those who were more disabled at baseline ($p = .007$) and those who perceived less reassurance ($p = .008$) reported a higher number of subsequent care seeking with different professionals.

5.5 | Regression analysis, secondary outcomes (Emotional distress)

Regression parameters estimates from the adjusted linear regression analyses are shown in Table 3. The adjusted model significantly predicted distress at 3-month follow-up, $F(12, 254) = 33.541$, $p < .001$. Block 1, $F(3, 263) = 7.262$, $p < .001$, significantly predicted 7.6% of the variance in distress at follow-up. The addition of baseline characteristics (Block 2) significantly predicted a further 52.0% of the variance, $F(11, 255) = 34.268$, $p < .001$. Adding reassurance (Block 3) significantly increased the predictive power of the model by 1.7%. The full model significantly explained 61.3% of the variance in distress, with an adjusted R^2 of 59.5%. In the final model, patients who were older ($p = .026$), those who were more distressed ($p < .001$) and more disabled ($p = .003$) at baseline and those who perceived less reassurance ($p = .001$) reported more distress at 3-month follow-up.

6 | DISCUSSION

The findings suggest that patients' perception of consultation-based reassurance by practitioners is significantly related to subsequent care seeking from general practitioners, wider care seeking from multiple practitioners and distress. In primary care, there is a robust body of evidence suggesting that reassuring communication during consultations is important (Pincus et al., 2013) and that it may impact healthcare utilization (Pincus & McCracken, 2013) and distress (Holt et al., 2018). The current findings extend this body of literature to secondary care settings.

The variance accounted for in GP visits and the number of other types of practitioner consulted were small, suggesting that there are other factors indicated in people's choice to re-consult. Some of them have been identified in this study, and are in line with previous research, indicating that higher levels of pain-related disability are associated with greater healthcare use (Blyth et al., 2004).

The measure of perceived reassurance in this study includes not only items about the content of messages delivered by practitioners, but also items asking about the building of a relationship between patient and practitioner. The findings that this aspect of communication matters is in line with previous research. A study exploring orthopaedic surgeons tone of voice in relation to malpractice claims, after controlling for vocal content, found that 'how' this group of clinicians conveys a message is equally as important as 'what' they say (Ambady et al., 2002). Similarly, in seeking a second opinion after consulting in an orthopaedic outpatient's clinic, 30% of the 2,880 participants cited poor communication and lack of trust not in the consultant's competence, but in their relationship with the patient (Van Dalen et al., 2001). This is echoed more generally in a review of reassurance provided for patients with non-specific conditions, which suggested that practitioners should be primarily empathic and collaborative to avoid patients feeling misunderstood and subsequently seeking another care option (Traeger et al., 2017).

There is some evidence to suggest that empathic communication and clear jargon-free communication may be especially challenging for some orthopaedic surgical practitioners, although we caution that such evidence is based on evaluation of groups and does not inform on the practice of individual practitioners. A review of empathy in surgeon–patient relationships found that orthopaedic surgeons are susceptible to a decline in empathy that begins during their early clinical years of medical school and may result as a by-product of the nature of their work (Han & Pappas, 2018). Communication between patients and community-practicing surgeons has shown that the majority of talking was conducted by surgeons, who typically used closed questions, and were limited and infrequent in their expression of empathy towards patients (Levinson & Chaumeton, 1999). In reference to providing explanations, orthopaedic surgeons have been shown to use a high level of jargon and offer explanations that patients find difficult to follow (Braeuninger-Weimer et al., 2019; Lærum et al., 2006). Other evidence

suggests that orthopaedic surgeons show a tendency to focus mainly on technical aspects of care-giving, lack listening skills, are inconsistent in the terminology they use, frequently use medical jargon and express infrequent signs of empathy towards patients (Frymoyer & Frymoyer, 2002; Han & Pappas, 2018; Herndon & Pollick, 2002; Kampa et al., 2006; Kyle & Shaw, 2014; Levinson & Chaumeton, 1999; Levinson et al., 2013; Portalatín et al., 2018; Tongue et al., 2005).

It has been argued that the communication between orthopaedic surgeons and their patients requires sophisticated communication skills, including an effective exchange of information, responding to patients' emotions and engaging in informed and collaborative decision making (Braddock et al., 2008; Levinson et al., 2013). Levinson and Chaumeton (1999) maintain that it should not be assumed that communication skills that are effective for primary care practitioners are appropriate for surgeons and their teams. Unlike primary care consultations, practitioners in secondary care are likely to use imaging results to explain to patients why surgery is not indicated. There is contradictory evidence for the effectiveness of using imaging tests to reassure patients (Ash et al., 2008; Kendrick et al., 2001). The results from this study indicate that the use of scans to provide reassurance without adequate empathy and clear explanations fails to improve distress or prevent subsequent excessive healthcare seeking. Of note here is that in this sample, 38% of patients reported that they still believed there was something serious, yet undetected, going on with their backs after their consultations. It seems that convincing this group that there is no catastrophic reason for their pain is particularly difficult. Previous evidence suggests that the absence of a clear diagnosis and explanation are associated with negative social, cognitive and emotional functioning in people with chronic LBP (Serbic & Pincus, 2013). Patients who are uncertain about their condition may continue searching for a diagnosis, which may lead to further healthcare seeking and hence an extra burden on health services (Serbic et al., 2014). Some patients, especially those who have heard the message about self-management as the only viable option for their problem more than once, might enter their specialist consultation with extremely low expectations about a good outcome, making motivational communication about self-management more difficult for practitioners (Darlow, 2016). The implications from our study, and from this body of evidence are that; (a) empathic communication is important to patients and impacts on their subsequent distress and behaviours and (b) that there is room for improvement in orthopaedic consultations.

To the authors' knowledge, this is the first study that has investigated the association between perceived reassurance and patients' outcomes in patients with chronic LBP consulting in orthopaedic surgical setting. The strengths of this study included data collection on a diverse range of socioeconomic catchment populations recruited from eight different hospitals with a large geographical spread and a low follow-up attrition rate.

The study has several limitations: The methodology included only self-report of subsequent healthcare utilization, which may be biased by poor recall. Without having an audio or video recording of the actual consultation contents, the study relies on patients' recollection and interpretation of reassuring behaviours, rather than measuring what actually took place. Although the use of video or audio-tapes of the consultation would have provided a more objective measure of clinicians' behaviour, there is evidence to suggest that patients absorb information at the level of their understanding and in the context of their pre-existing beliefs, which might be more important than what consultants said or intended (Darlow et al., 2013). There is also some evidence to support the hypothesis that patient's perception of the consultations is more important than what actually happened in it (Stewart et al., 2000). Considering the small variance accounted for in healthcare utilization, and the imprecision in the measurement of utilization, our findings should be taken cautiously, and should lead to new investigations, including the prediction of subgroups who respond to different types of reassurance, using large samples, and reliable objective data on healthcare utilization.

In conclusion, this study gives a unique insight into the healthcare behaviours of a group of people with PMLBP and very high healthcare utilization. The consultation with the orthopaedic teams appeared to provide little reassurance to this group about their back pain, despite the use of MRI scans and explanations about the absence of pathology in these. Despite the high levels of healthcare utilization, participants did not report high levels of pain, disability and distress. These factors, in combination, are a promising indication that the catalysts for seeking care includes patients' beliefs about their pain, and that changing these is both challenging, and necessary, to achieve an increase in effective self-management of back pain in this group.

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CONFLICT OF INTEREST

The other authors declare no conflict of interest.

AUTHORS CONTRIBUTION

We herewith declare that all authors have seen and approved this final version of the manuscript submitted. We warrant it is our original work, which has not been published previously

nor considered for publication elsewhere. The content of this study is the sole responsibility of the authors; the financial sponsor had no role in the study design, data collection, data analysis, data interpretation, preparing the manuscript or the decision to submit for publication. Tamar Pincus has held consultancy roles teaching Psychologically Informed Practice through her University position.

ORCID

Kathrin Braeuninger-Weimer https://orcid.org/0000-0002-9880-8686
Tamar Pincus https://orcid.org/0000-0002-3172-5624

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