

Determinants Of Patient Experience With Low Back Pain Interdisciplinary Care: A Pre-Post Interventional Study

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Amédé Gogovor^{1,2} 
Regina Visca^{3,4}
Mark A Ware^{4,5} 
Marie-France Valois⁶
Gillian Bartlett⁴
Matthew Hunt⁷
Sara Ahmed^{2,4,7}

¹Division of Experimental Medicine, McGill University, Montreal, Quebec, Canada; ²Centre for Outcomes Research and Evaluation, McGill University Health Centre, Montreal, Quebec, Canada; ³RUIS McGill Centre of Expertise in Chronic Pain, Montreal, Quebec, Canada; ⁴Department of Family Medicine, McGill University, Montreal, Quebec, Canada; ⁵Alan Edwards Pain Management Unit, McGill University Health Centre, Montreal, Quebec, Canada; ⁶Department of Medicine, McGill University, Montreal, Quebec, Canada; ⁷School of Physical and Occupational Therapy, Faculty of Medicine, McGill University, Montreal, Quebec, Canada

Background and purpose: Measuring patients' experiences of health services has become an essential part of quality of care reporting and a means for identifying opportunities for improvement. This study aimed to evaluate change in patient experience in an interdisciplinary primary care program and to estimate the impact on patient experience of sociodemographic, function, pain and general health status, resource utilization, and process variables.

Patients and methods: A 6-month interdisciplinary care program for individuals with low back pain (LBP) was implemented at four primary care settings and evaluated using an observational pre/post study design. The change in patient experience was evaluated using the Patient Assessment of Chronic Illness Care questionnaire (PACIC) completed at baseline and 6 months post-intervention (n=132). Descriptive and multivariable analyses were performed using SAS version 9.3.

Results: The average patient age was 57 (SD: 14) years of age and the majority were female (53%). The mean overall PACIC score was 2.6 (SD: 1.1) at baseline and 3.6 (SD: 0.9) at 6 months. The experience of care improved for 62% of the participants based on the minimal clinically important difference (MCID). No significant determinants of overall PACIC change score were identified in the multivariable regression models.

Conclusion: The lack of association of hypothesized determinants requires further examination of the properties of the PACIC and with a larger sample. Future investigation is needed on the relationship between improved patient experience and outcomes.

Keywords: patient care team, low back pain, patient experience, PACIC, primary health care

Introduction

Low back pain (LBP) is one of the most common non-specific chronic pain conditions, and up to 85% of the cases cannot be attributed to any specific underlying pathology.¹ LBP is associated with high economic burden for individuals and societies, increased incidence of disability with low levels of physical activity, impaired quality of life and the highest consultation rate in general practice.²⁻⁴ Clinical guidelines for LBP now recommend non-pharmacological approaches as first-line treatment options.⁵⁻⁸ These approaches include advice and education supported by self-management, cognitive behavioural approach, as well as some forms of complementary and alternative medicine. Procedures, imaging and surgery are not recommended for patients with non-specific LBP. Pharmacological treatments are recommended for selected patients and for limited use, and include nonsteroidal anti-inflammatory drugs (NSAIDs), muscle relaxants, antidepressants, anticonvulsants, opioids; most for limited use and in selected patients.⁶⁻¹⁰

Correspondence: Sara Ahmed
School of Physical and Occupational
Therapy, Faculty of Medicine, McGill
University, 3654 Prom Sir-William-Osler,
Montreal, QC H3G 1Y5, Canada
Tel +1 514-398-4400 Ext 00531
Fax +1 514-398-6360
Email sara.ahmed@mcgill.ca

Given the complexity and suboptimal management, one of the main recommendations to improve the management of LBP is the use of multidisciplinary and interdisciplinary teams in the delivery of care. The expectation behind this recommendation is that teams will enhance integration of care and improve provider, patient and managerial satisfaction, thereby improving administrative and clinical processes and patient outcomes.^{11–13} Considerable attention has been focused on the effectiveness of multidisciplinary and interdisciplinary teams, and studies have linked team performance to positive patient outcomes.^{14,15} For chronic pain management, improved outcomes across a range of domains including pain severity and interference, and functioning have been reported.^{16–19}

Interdisciplinary care can be distinguished from multidisciplinary treatment in that not only do health professionals with different backgrounds work in concert with the patient, but they also organize meetings to discuss cases, make collective therapeutic decisions, use one record system and, most importantly, often employ a uniform approach to patient management.^{20,21} There is a growing body of evidence suggesting health care teams can have beneficial impacts on clinical and health resource endpoints, and on patient and provider experience.¹⁷

Patient experience of health and health care is defined as any combination of satisfaction, expectations, and experience.²² Measuring patients' experiences of health services has become an essential part in reporting on the quality of care and defining health policy and an important component of performance assessment and service improvement.^{23–29} This measurement can have different purposes: (i) describing health care from the patient's point of view; (ii) measuring the process of care, thereby both identifying problem areas and evaluating improvement efforts; and (iii) evaluating the outcome of care.^{30–33}

Studies that have examined the relationship between patient experience and health outcomes are very scarce and have yielded mixed results:^{22,34–37} some studies found positive association^{38–40} while others found null or negative association.^{41–44} In a recent systematic review of 55 studies, Doyle et al concluded that patient experience is positively associated with clinical effectiveness and patient safety but did not assess the strengths of positive associations in different studies.⁴⁵ Building on Doyle et al's review and focusing on Consumer Assessments of Healthcare Providers and Systems (CAHPS) surveys to measure patient experience, Anhang Price et al showed associations between positive patient experiences and clinical processes,

patient safety, and unnecessary utilization of health services.³⁴ Yet, these studies were based on the acute care model, which differs from a long-term care approach such as the chronic care model (CCM).⁴⁶ CCM defines six elements that are important for improving outcomes for individuals with chronic conditions: organizational support, delivery system redesign, decision support, self-management support, clinical information systems, and linkages to community services. Tan et al showed a significant association between patients' ratings of services and outcome measures for chronic pain in a multidisciplinary outpatient clinic at a tertiary teaching hospital but they used a non-validated satisfaction measure.⁴⁷ Thus, previous studies examining the determinants of patient experience were conducted in the acute care model, were cross-sectional in design, and focused on conditions other than LBP.

This study aimed to investigate the association between change in patient experience of care of individuals with LBP participating in an interdisciplinary care program, and patient and process variables. Specific objectives were to evaluate change in patient experience after a 6-month period of participating in a primary interdisciplinary care program, and to estimate the relationship of sociodemographic, functioning, pain and general health status, resource utilization, and process variables with change in patient experience. Our hypothesis was that a positive change in patient experience would be associated with a better functioning outcome.

Materials And Methods

Study Design

This paper is based on a larger pre/post multiple time series study design.⁴⁸ Individuals attended the program for 6 months and completed questionnaires at baseline, 6 weeks, 3 months and 6 months post program initiation. The type of data and instruments used varied across these time points.

Participants And The Interdisciplinary Program

Based on the framework of CCM, a primary care interdisciplinary program was developed by the Centre of Expertise in Chronic Pain (Quebec, Canada). Program development integrated needs assessment and evidence-based guidelines. The composition of the interdisciplinary team was determined by the assessment of the needs for individuals suffering from LBP and included a nurse, a physician, a physiotherapist, and a psychologist. We identified relevant assessment tools through literature review and validated

them by clinician experts and health system decision-makers. The model included referral criteria; a treatment algorithm; standardized clinical process and assessment tools for the interdisciplinary team; provision of self-management support for patients; and defined administrative and clinical indicators supported by an electronic data collection and management system for the clinicians and for evaluation. Primary care physicians referred individuals with subacute (4 to 12 weeks) and chronic (>12 weeks) LBP to the program which was implemented at four Health and Social Service Centres (CSSS). Participants received an interdisciplinary evaluation at the start of the program and individualized evidence-based treatments including pharmacological, physiotherapy and psychological therapies, and structured self-management support. We collected data on socio-demographic status, impact of pain, physical and mental health, function, and quality of life using self-report and standardized questionnaires. The inclusion criteria for this study were i) individuals aged 18 years or older; ii) suffering from sub-acute and chronic LBP ≤ 1 year; and iii) that answered at least 10 questions of the Patient Assessment of Chronic Illness Care (PACIC) at baseline and 6 months.

Outcome And Covariates Measures PACIC

The main outcome variable of this study is patient experience with care, measured by the Patient Assessment of Chronic Illness Care (PACIC). The PACIC has been identified as the most appropriate instrument to measure patient experience with aspects of care associated with the CCM.^{22,49–51}

Participants completed the 20-item PACIC at baseline and 6 months, and scored from 1 (none of the time) to 5 (almost always). It measures specific actions or qualities of care experienced by patients. Its test–retest reliability (0.58), internal consistency (0.93) and convergent validity (0.42–0.60) have been demonstrated in varied chronic condition patient populations including hypertension, depression, diabetes, asthma, and chronic pain.^{49,50,52} Only one study reported a responsiveness of 1.11 (standardized response mean).⁵³ The PACIC is scored by averaging scores across all 20 items.⁵² The single score structure is recommended by recent research in order to obtain an overall picture of patients' experiences.^{50,54–56}

Patient Covariates

The selection of the predictor variables was based on the literature review and findings from a qualitative study on

patient experience conducted by our team which identified themes related to the effect of interdisciplinary care including “togetherness of the clinician team members/varied professionals” and “meaning of recovery”.⁵⁷ The construct of functional ability, the most important recovery “item” mentioned by the participants in the qualitative study was the main predictor variable and was measured using the Oswestry Disability Index (ODI), the most commonly used outcome measure for LBP. The ODI is divided into 10 sections of 6 statements, each section scored on a 0–5 scale (higher values represent greater disability), with a test–retest reliability of 0.83–0.99 and an internal consistency (Cronbach α) of 0.71–0.87.^{58,59}

The association between pain outcomes and socio-demographic, depression, anxiety, and health-related quality of life has been shown in previous studies.^{20,60} Thus, other predictor variables we included in the study were: baseline socio-demographic variables of age, sex, marital status, level of education, employment status, social assistance, private insurance, and ethnicity; Start Back, a risk (low, medium, high) stratification tool to assess risk of delayed recovery;⁶¹ anxiety measured by the Hospital Anxiety and Depression scale (HADS) with score ranging from 0 (no distress) to 21 (highest distress);⁶² depression using the Patient Health Questionnaire (PHQ-9) with score ranging from 0 to 27 (the higher the more severe);⁶³ general health status (physical and mental) measured by the SF-12 and ranging from 0 to 100 with higher scores meaning a better health-related quality of life;⁶⁴ and pain severity measured by the Brief Pain Inventory (BPI) and ranging from 0 to 10 with higher scores meaning severe pain.^{65,66}

Staff And Process Covariates

We assessed team functioning using the Team Climate Inventory (TCI) that was completed by the clinician and non-clinician staff members from the four sites. The 19-item TCI⁶⁷ is grouped under 4 subscales: participative safety and support for innovation score on a 5-point Likert scale, and vision and task orientation that score on a 7-item Likert scale. Sub-scale scores are derived by averaging items within the sub-scale; to obtain the overall score for each team, individual scores are then summed up and divided by the number of team members. Higher scores indicate more desirable team climate.^{68,69}

Other variables include the total number of visits with health professionals over the 6-month program (physician, nurse, physiotherapist, psychologist); number of months since implementation of the program; adherence to the

program: given that the minimum number of visits (with the nurse/physiotherapist) required is 6, adherence is coded Yes, if the number of visits ≥ 6 , and No otherwise; and interdisciplinary evaluation: Yes, if the date of assessment for the initial visit is the same for ≥ 3 health professionals.

Data Collection

We collected the study data manually and electronically and used an electronic data capture tool (Research Electronic Data Capture or REDCap)⁷⁰ hosted at the Research Institute of the McGill University Health Centre (MUHC), for data management. REDCap is a secure, web-based application designed to support data capture for research studies, providing: 1) an intuitive interface for validated data entry; 2) audit trails for tracking data manipulation and export procedures; 3) automated export procedures for seamless data downloads to common statistical packages; and 4) procedures for importing data from external sources. For this multisite study, the use of the Data Access Group feature allowed the restriction of records to each site.

Sample Size

Because no minimal clinically important difference (MCID) for PACIC was found in the literature, we used an estimate of $0.5 \times \text{SD}$, equivalent to a moderate effect to estimate sample size.^{71,72} Findings from studies on patients with chronic illness showed SD ranging from 0.8 to 1.1.^{49,73,74} Based on an MCID of 0.5 and $\text{SD} = 1$, using an alpha of 5% and a power of 80% the minimum required sample size is 63 subjects, increased with an additional 10 subjects for every additional variable that is included in the multivariable analysis.

Analyses

For all variables, we calculated mean values and standard deviations for the continuous variables and frequencies and percentages for categorical variables. Pearson (continuous) and Spearman (categorical) correlation matrices were calculated to investigate collinearity. We calculated the mean overall PACIC score for all the patients who completed at least 10 items at baseline and 6 months; the PACIC score representing the score of all completed questions. To determine the proportion of patients whose experience has improved, we categorized PACIC variable as improved, stable and worsened based on MCID ($= 0.5 \times \text{SD}$) and calculated the proportion for each category; improved if the

difference (6 months - Baseline) is >0.5 ; stable if the difference is comprised between -0.5 and 0.5; and worsened if the difference is <-0.5 . Responder analysis is an approach that permits to assess clinical relevance of the effect of interest, particularly while using PROM or PREM instruments.⁷⁵ We conducted multivariable regression to evaluate the relationship between patient and staff and process covariates and the change score of PACIC as the outcome. We first estimated univariate models, and all significant covariates (95% confidence interval does not include the null value) in the unadjusted models were included in the multivariate models. We conducted the hierarchical multiple regression by adding more predictors to each successive model. Patient socio-demographic covariates were entered in the model first, followed by patient health status, and staff and process variables. The analyses were performed using SAS ver. 9.3. (SAS Institute, Cary, NC, USA) and R ver. 3.3.

Ethical Considerations

Ethical approval was obtained from the Research Ethics Board of the McGill University Health Centre (#MP-CUSM-12-220 GEN) and the study was conducted in accordance with the Declaration of Helsinki. We obtained written informed consent from the participants at their referral to the program. Electronic data are kept on institutional secured and password protected servers (at McGill University and McGill University Health Centre). All paper-based clinical data collection forms are kept at each participating pain clinic at the Health and Social Services Centres.

Results

Sociodemographic And Health Characteristic Of The Study Population

The sample, based on patients who were recruited from December 2012 until November 2016, completed the 6-month visit (by June 2017), and answered at least 10 PACIC questions at baseline and 6 months, was 132. The average patient age was 57 (SD: 14) years of age and the majority were female (53%). Men were slightly older on average (58 (SD: 14)) compared to women (55 (SD: 15)). Thirty percent of the participants were categorized as high risk while 34% and 29% were categorized as medium and low, respectively, according to the Start Back Tool. The anxiety score ranged from 1 to 18 (8.4 (SD: 3.7)) out of 21, and the depression from 0 to 25 (7.4 (SD: 6.0)) out of 27 at baseline. Characteristics of the participants (this

study (n=132) versus the larger study (n=314)) are shown in [Table 1](#). Only sex and pain severity variables were statistically significant.

Distribution Of PACIC Completion And Mean Change Scores

Of the 132 patients who completed at least 10 items at baseline and 6 months, 84% and 78% answered all 20 questions at baseline and 6 months, respectively ([Table 2](#)). The average overall PACIC was 2.6 (SD: 1.1) at baseline and 3.6 (SD: 0.9) at 6 months; men and women had similar scores at baseline (2.6 vs 2.7) and 6 months (3.4 vs 3.7). The distribution of PACIC score by category of risk (measured by the StarT Back tool) was similar even though the mean PACIC score appeared to increase with the level of risk at baseline (2.4, 2.7, 2.7) and at 6 months (3.4, 3.6, 3.6) for low, medium, and high risk, respectively ([Table 3](#)). At the end of the 6-month program, the experience of care for 62% of the patients improved ([Table 4](#)).

Potential Determinants Of PACIC Change Score

Sociodemographic variables such as age and employment (retired) and environmental variables (site and number of months of implementation) had a significant regression coefficient in the univariate models; statistically nonsignificant variables included sex, level of education, social assistance, private insurance, ethnicity, StarT Back risk category, anxiety, depression, functional status, health status, pain severity, team climate inventory, and interdisciplinary evaluation ([Supplementary Table A1](#)). None of the variables included in the multivariable regression models remained significant; age was of borderline statistical significance with an average change in PACIC score of -0.021 (-0.046, 0.004) for 1-year increase ([Table 5](#), and [Supplementary Table A2](#)).

Discussion

In this study, we used PACIC as a measure of patient experience with a primary interdisciplinary care program for the management of LBP, implemented at four Health and Social Services Centres in the province of Quebec. We found that the experience of care improved for the majority of the participants based on the MCID. However, no significant determinants of overall PACIC change score were identified in the multivariable regression models. Some variables selected as predictors of patient experience

of care in this study were based on constructs identified as important by patients who participated in a qualitative study previously conducted by our team⁵⁷ such as functional ability or interdisciplinary evaluation. None of these features were found to be significantly associated with change in patient experience. Given the fact that there is always some implementation variations,⁷⁶ the absence of significant association of the overall PACIC change score with sites may indicate a negligible impact of implementation variation on the PACIC across program sites.

Our mean overall PACIC score at 6 months was higher than the numbers reported in other studies regardless of the type of chronic condition, setting, or design (cross-sectional, longitudinal).^{31,56,73,77-83} The higher PACIC scores obtained in our study suggest better patient experience. This may be due to the unique characteristics of the IDT program implemented and/or the study population (LBP). Additional data obtained from the implementation of similar IDT programs within LBP population will be needed to support these hypotheses.

Similar to some previous findings,^{77,80,84,85} no significant association with potential determinants of PACIC was found. However, other authors reported some significant associations. For example, having a degree/diploma, being retired, or having a greater duration of disease had negative effects on the total PACIC in a type 2 diabetes population from a cross-sectional design.⁸³ In our study, only being retired was negatively associated with overall PACIC in univariable regression models. Other variables such as Interdisciplinarity and team functioning were not significant, even in univariable models while Houle et al reported a significant association with IDT care; however, in their study IDT care was assessed as “the number of visits with non-physician professionals at the clinic during the previous 2 years, as abstracted from the medical chart”.⁷⁸ This is an indicator but not a comprehensive or direct measure of effective implementation of IDT care.

To our best knowledge, this is the first longitudinal study using PACIC as a measure of patient experience of interdisciplinary care for individuals living with LBP. Thus, the association of PACIC with some variables such as StarT Back risk category and team climate inventory has not been explored therefore comparisons are not possible. The rate of completion of all 20 PACIC questions in our sample was relatively high (84% and 78% at baseline and 6 months, respectively) compared with an average of 75% in studies in multiple chronic condition populations.^{73,83} This finding

Table 1 Baseline Characteristics Of The Study Population

Variables	N	Mean (SD) (range) or %	N	Mean (SD) (range) or %	p-value*
Age (years)	132	56.7 (14.3) (23–87)	182	54.4 (14.4) (19–84)	0.179
Sex					
Female	70	53.0%	120	65.9%	0.021
Male	62	47.0%	62	34.1%	
Level of education					
College or university	79	59.8%	94	51.7%	0.423
Secondary school	29	22.0%	48	26.4%	
Primary school or none	3	2.3%	9	4.9%	
Other	7	5.3%	7	3.8%	
Missing	14	10.6%	24	13.2%	
Marital Status					
Married or Common Law	78	59.1%	109	59.9%	0.095
Divorced or separated	22	16.7%	17	9.3%	
Never married	15	11.4%	22	12.1%	
Widowed	2	1.5%	9	5.0%	
Other	2	1.5%	8	4.4%	
Missing	13	9.8%	17	9.3%	
Employment					
Full time	49	37.1%	64	35.2%	0.187
Part-time	8	6.1%	19	10.4%	
Retired	36	27.3%	49	26.9%	
On disability	8	6.1%	11	6.0%	
Other	19	14.4%	22	12.1%	
Missing	12	9.1%	17	9.3%	
Social assistance					
No	107	81.0%	151	83.0%	0.480
Yes	10	7.6%	8	4.4%	
Missing	15	11.4%	23	12.6%	
Private insurance					
Yes	79	59.8%	117	64.3%	0.731
No	36	27.3%	44	24.2%	
Missing	17	12.9%	21	11.5%	
Ethnicity					
Caucasian	80	60.6%	111	61.0%	0.204
Black	5	3.8%	9	5.0%	
Asian	6	4.5%	7	3.8%	
Hispanic	1	0.8%	3	1.6%	
Other	13	9.8%	6	3.3%	
Missing	27	20.5%	46	25.3%	
StartT Back					
Low	38	28.8%	40	22.0%	0.148
Medium	45	34.1%	63	34.6%	

(Continued)

Table 1 (Continued).

Variables	N	Mean (SD) (range) or %	N	Mean (SD) (range) or %	p-value*
High	39	29.5%	51	28.0%	
Missing	10	7.6%	28	15.4%	
Functional status (ODI, 0–100)	132	31.3 (13.5) (6.0–70.0)	180	34.4 (17.2) (2.0–92.0)	0.083
Pain severity (BPI, 0–10)	119	4.4 (1.8) (0.8–8.0)	158	4.9 (2.0) (0.0–10.0)	0.041
Pain interference (BPI, 0–10)	122	4.4 (2.2) (0.0–10.0)	166	4.7 (2.6) (0.0–10.0)	0.207
Physical health status (SF-12, 0–100)	113	35.9 (9.2) (15.2–56.2)	150	34.7(10.2)(16.3–59.5)	0.317
Mental health status (SF-12, 0–100)	113	47.9 (11.3) (19.0–67.5)	150	48.2(11.3)(16.0–71.9)	0.800
Anxiety (HADS, 0–21)	128	8.4 (3.7) (1.0–18.0)	163	8.8 (3.9) (2.0–20.0)	0.425
Depression (PHQ-9, 0–27)	122	7.4 (6.0) (0.0–25.0)	166	7.3 (5.9) (0.0–25.0)	0.947

Note: *Chi-square or t-test.

Abbreviations: SD, standard deviation; ODI, Oswestry Disability Index; BPI, Brief Pain Inventory; HADS, Hospital Anxiety and Depression Scale; PHQ-9, Patient Health Questionnaire.

Table 2 Distribution Of PACIC Completion At Baseline And 6 Months

Item Responded to	Baseline, N (%)	6 Months, N (%)
All 20 items	111 (84.1)	103 (78.0)
15–19	20 (15.1)	27 (20.5)
10–14	1 (0.8)	2 (1.5)
5–9	0 (0)	0 (0)
1–4	0 (0)	0 (0)
None	0 (0)	0 (0)

may be indicative of a better adaptability of PACIC questions for the LBP population.

The absence of significant association between PACIC and potential determinants is common in the literature and puts into perspective the notion that it is the best instrument to assess patient experience, particularly in the context of primary interdisciplinary care. The PACIC was developed for individuals with chronic illness to measure specific actions or qualities of care congruent with the CCM,⁵² and most recent analyses of PACIC supported the use of the overall summary score.^{50,54–56,86,87} However, the fact that we did not find strong associations with hypothesized predictors raises potential questions regarding the five-dimension structure of the PACIC. It may be that in the context of team-based chronic illness care, a modified and improved version of PACIC would be needed to capture aspects of interdisciplinarity patient-centred care including the role of other professionals (or the role of professionals other than doctors and nurses), and to reflect on team–patient relationship, the quality of

Table 3 Distribution Of PACIC Mean Change Scores

	Baseline	6 Months	Change In PACIC
	Mean (SD)	Mean (SD)	Mean (SD)
Sex			
Female	2.68 (1.16)	3.70 (0.90)	0.94 (1.17)
Male	2.56 (1.04)	3.40 (0.93)	1.02 (1.16)
Site			
A	2.72 (1.11)	3.48 (0.96)	0.76 (1.10)
B	2.66 (1.14)	3.54 (0.88)	0.88 (1.15)
C	2.11 (0.83)	3.87 (0.84)	1.75 (1.25)
D	2.62 (1.19)	3.60 (0.94)	0.97 (1.20)
StarT Back			
Low	2.39 (0.90)	3.41 (0.95)	1.03 (1.12)
Medium	2.69 (1.16)	3.63 (0.89)	0.94 (1.27)
High	2.73 (1.22)	3.61 (0.92)	0.88 (1.09)
Anxiety (HADS)			
Minimal	2.52 (0.97)	3.53 (0.84)	1.01 (1.15)
Mild	2.89 (1.30)	3.67 (1.10)	0.78 (1.07)
Moderate	2.70 (1.13)	3.54 (0.90)	0.84 (1.26)
Severe	2.31 (1.12)	3.35 (0.88)	1.04 (1.54)
Depression (PHQ-9)			
No depression	2.43 (1.06)	3.40 (0.91)	0.97 (1.31)
Minimal	2.77 (1.01)	3.66 (0.89)	0.89 (0.99)
Mild	2.78 (1.11)	3.60 (1.02)	0.81 (0.94)
Moderate	2.62 (1.32)	3.39 (1.05)	0.77 (0.82)
Severe	2.31 (1.19)	3.69 (1.11)	1.38 (1.97)

Abbreviations: HADS, Hospital Anxiety and Depression Scale; PHQ-9, Patient Health Questionnaire.

Table 4 Distribution Of PACIC Change Scores Based On MCID

	Improved	Stable	Worsened
Total (n=132)	82 (62%)	39 (30%)	11 (8%)
Sex			
Female (n=70)	43 (61%)	21 (30%)	6 (9%)
Male (n=62)	39 (63%)	18 (29%)	5 (8%)
Site			
A (n=70)	38 (54%)	25 (36%)	7 (10%)
B (n=27)	17 (63%)	7 (26%)	3 (11%)
C (n=16)	13 (81%)	3 (19%)	0 (0%)
D (n=19)	14 (74%)	4 (21%)	1 (5%)
Adherence to program (based on visits with nurse)			
Yes	11 (13%)	3 (8%)	0 (0%)
No	71 (87%)	36 (92%)	11 (100%)
Adherence to program (based on visits with physiotherapist)			
Yes	64 (78%)	32 (82%)	11 (100%)
No	18 (22%)	7 (18%)	0 (0%)
Interdisciplinary evaluation			
Yes	65 (79%)	36 (92%)	7 (64%)
No	17 (21%)	3 (8%)	4 (36%)

Abbreviation: MCID, minimal clinically important difference.

communication and listening, the use of technology in decision-making and care coordination. Further evaluation of the factor structure of the PACIC, for example, using rash analyses, will help evaluate the domain structure of the PACIC and whether there are sufficient items to measure each domain.^{55,88} Qualitative data can enhance understanding of complex interventions when coupled with quantitative data in a mixed-methods approach. This study is part of a doctoral dissertation that extensively discussed this approach.⁸⁹

It is worth noting that the results, based on data from patients who completed the PACIC questionnaire at baseline and 6 months (two time points) who form a subsample of the interdisciplinary program, should be interpreted with caution given the small sample size and the absence of control that may positively affect patient experience results. Existing studies on the natural history of LBP focused on pain and function outcomes so do not offer comparison for patient experience outcomes.^{90–92}

In conclusion, the IDT program appears to have improved the experience for the majority of individuals living with LBP. The lack of association of hypothesized determinants requires further examination of the

Table 5 Multivariable Association Of Potential Determinants With Change PACIC Score

Variables	Regression Coefficient	95% CI
Patient predisposing factors		
Age (years)	−0.021	−0.046, 0.004
Marital Status		
Married or common law	Reference	
Divorced or separated	−0.149	−0.771, 0.472
Never married	0.305	−0.528, 1.138
Widowed	0.359	−1.396, 2.114
Other	0.479	−1.529, 2.487
Missing	−1.679	−4.269, 0.911
Employment		
Full time	Reference	
Part-time	−0.142	−1.078, 0.794
Retired	−0.008	−0.796, 0.779
On disability	0.104	−0.990, 1.199
Other	−0.368	−1.208, 0.472
Missing	1.472	−1.084, 4.027
Ethnicity		
Caucasian	Reference	
Black	0.047	−1.326, 1.419
Asian	−1.209	−2.488, 0.071
Hispanic	NE	-
Other	−0.192	−0.977, 0.593
Missing	0.139	−0.621, 0.899
Environmental factors		
Site		
A	Reference	
B	0.177	−0.560, 0.913
C	0.986	−0.821, 2.793
D	0.335	−0.758, 1.427
Adherence to program (based on visits with nurse)		
No	Reference	
Yes	−0.301	−1.864, 1.263
Number of months of implementation	0.025	−0.447, 0.497
Patient health status		
Physical health status (baseline)	0.038	−0.216, 0.292

Abbreviation: NE, not estimable.

properties of the PACIC and with a larger sample. Future investigation is needed on the relationship between

improved patient experience and outcomes, and to determine whether patient experience plays a mediation role in the relationship between team-based/patient-centred care and improved outcomes.

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Author Contributions

AG, RV, MAW, and SA contributed to the conception of the larger study. AG designed this study, managed the data collection and drafted the manuscript. GB and MH revised the protocol. MFV performed the analyses. AG and SA performed initial data interpretation. All authors made substantial contributions to conception and design, acquisition of data, or analysis and interpretation of data; took part in drafting the article or revising it critically for important intellectual content; gave final approval of the version to be published; and agree to be accountable for all aspects of the work.

Disclosure

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