

Clinical Outcomes of a Primary Care Liaison Psychiatry Service for Patients with Complex Persistent Physical Symptoms.

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Abstract

Background:

Patients with Persistent Physical Symptoms (PPS) may have chronic physical disorders such as diabetes, COPD, Crohn's, MS and/or ongoing medically unexplained symptoms, and in either case there can be both physical and [psychiatric aetiologies combined. Such co-morbidity tends to be chronic and hard to manage in any healthcare setting and therefore frequent attendance in healthcare settings is present for these patients. We rolled out a primary care based integrated multidisciplinary liaison psychiatry team to 3 CCG areas in Nottinghamshire in October 2019 to see this patient group and have taken patient reported outcome measures from baseline up to 15 months later as part of normal service evaluation.

Results:

We show here that there are clinically relevant and statistically significant improvements in depressive symptoms (PHQ-9), anxiety symptoms (GAD-7) and physical symptoms (PHQ-15). The improvements in the EQ-5D-5L shows that in a whole health measure there are significant improvements over all and specifically in the anxiety/depression and usual activity domains.

Conclusion:

This is clinically very relevant especially when seen in the context that these results were achieved despite a pandemic affecting the whole population. This model is scalable and integrated providers should look to implement it.

Background

Patients with Persistent Physical Symptoms (PPS) may have chronic physical disorders such as diabetes, COPD, Crohn's, MS, or ongoing medically unexplained symptoms, and in either case there can be both physical and psychiatric aetiologies combined. Such co-morbidity tends to be chronic and hard to manage in any healthcare setting. The awareness of complex physical & psychiatric co-morbidity is increasing (1), and increasingly coming into focus in publications and guidelines (2) (3) (4) (5).

Patients and clinicians often feel that there is not much that can be done to help. It is known that single interventions help some but not all patients (6). What is required is a multidisciplinary team that can tailor interventions to the individual much more flexibly (7), but currently no one service in the NHS is designed to manage such patients in the community. There are liaison psychiatry services in the UK and elsewhere that offer ward-based and outpatient-based services for some of this patient group, but even that is rare. Even where there is a local service, if the patient is unable to get to the hospital outpatients department, then this tertiary level service is not available to them. Interventions that can be delivered in primary care are available, but it remains unusual to find a primary care-based service developed as part of routine service organisation rather than for research purposes (6).

The aim of this paper is to describe an initial evaluation of a new multi-disciplinary integrated service based in primary care, aimed at helping with the management of complex problems characterised by PPS.

Methods

The new service

Staffing

The Primary Care Psychological Medicine (PCPM) service was set up 4 years ago as part of the Multi-Care provider Vanguard programme from NHS England (8) that was running in Rushcliffe, Nottinghamshire. This was a fast-track programme to set up innovative services and evaluate them. PCPM is an integrated liaison psychiatry multi-disciplinary service for people with complex PPS based in the community.

In October 2019, the PCPM service increased to cover 3 CCG areas (population approx. 340K). The team consists of 1 consultant liaison psychiatrist, 5 Mental Health Liaison Nurses, 1 Physiotherapist, 1 Occupational Therapist, 1 Care Support worker and 3 admin staff.

The target population

The service offers an holistic, integrated multi-disciplinary service to improve the management of patients identified by the primary care clinician falling within the following:

- Complex PPS - whether medically explained, medically unexplained or both.
- Multiple referrals to secondary services
- Distress and functional impairment
- Polypharmacy

More recently we have found that our input to this patient group has been key during the COVID-19 pandemic. A large proportion of our patients are clinically at the extremely high-risk group for COVID-19 due to multiple physical diagnoses.

Assessment and intervention

Whilst there is no easy search term for practice IT systems to identify this patient group (7), we have found that GPs and practice staff can quickly identify them accurately and mostly refer appropriately.

After referral, patients are assessed by one of the MDT team, the professional discipline that does this depends on initial needs of the patient. Most commonly this is one by a doctor or one of the nurses. This assessment is done either in the patient's home or in a local GP practice. We use a biopsychosocial approach, and an individual formulation is developed, and provisional diagnosis is made. Each plan is tailored to the person's individual needs. The patient's care is co-ordinated by the most appropriate member of the multidisciplinary team and different professional disciplines see the person at varying levels of intensity as the treatment strategy is developed.

We have a consultant liaison psychiatrist, Clinical Nurse Specialists and Physiotherapist and Occupational Therapist as part of the core team as well as a care support worker. Together this brings a truly multidisciplinary team with a wide variety of investigations, functions, and treatment capabilities. We adopt a full biopsychosocial approach to the individual patient's care plan.

Treatment could be any of the following.

- Manage and review psychotropic medication.
- A mixed model of psychological interventions including distress tolerance and EMDR, grounding and CBT approaches as well as.
- Identifying and reducing barriers to social participation and providing broader education and understanding regarding symptom management.
- Physiotherapy treatments.
- Occupational Therapy inputs.

We also provide training, supervision and support for GPs and other primary care professionals to help manage patients.

Outcome measures and analysis

Patient-reported outcome measures (PROMs) are collected at our initial assessment as a baseline, and then at every 3 months - at the appointment closest to each 3 month point in time. Patients are with the service for an average of 44 weeks (10 months).

We use the following PROMs:

PHQ-15 to measure somatic (physical) symptoms, (9)

PHQ-9 to measure depression symptoms, (10)

GAD-7 to measure anxiety symptoms (11)

EQ-5D-5L to measure whole health measures including Activities of Daily Living (ADL's) -a standardized instrument for measuring generic health status. (12, 13).

In the period 1st Oct 2019 to 29th Jan 2021 the service received 322 referrals and made an initial contact with 201 patients. The data analysed is for all patients where there were at least 2 data points on the PROMs over a 15 month period (patients signposted elsewhere after an initial assessment are not included).

The data was analysed using the R software (14) to generate descriptives (means and 95% confidence intervals) and to evaluate change over time using (R) we fitted a simple linear model using the lmod function and the table of values later were outputted from the summary function of this lmod (summary(lmod)). The confidence intervals were calculated using the predict function.

Ethics

Because the data presented here were collected routinely for service evaluation, and no new methodology was applied Research Ethics Committee approval was not required.

Results

In the analysis cohort there are 100 patients in the PHQ-9 & PHQ-15 groups, 98 in the GAD-7 group and 97 in the EQ-5D-5L group. The average age of the cohort was 47.9 years (range 19-83) and 74% were female.

At baseline the mean scores and confidence intervals (CIs) for the sample were:

PHQ-15	15.8, 95% CI 14.9 to 16.8	(severe somatic symptoms);
PHQ-9	17.9, 95% CI 16.5 to 19.2	(borderline severe depression symptoms);
GAD-7	15.1, 95% CI 16.2 to 19.9	(severe anxiety symptoms);
EQ-5D-5L	9.4, 95% CI 8.8 to 10.2	(average of moderate problems across domains)

Baseline EQ-5D-5L subscale scores:

Mobility	1.9, 95% CI 1.6 to 2.1
Self-care	1.5, 95% CI 1.2 to 1.7
Usual activities	1.7, 95% CI 1.5 to 1.9
Pain/Discomfort	1.8, 95% CI 1.6 to 2.0
Anxiety/Depression	2.5, 95% CI 2.3 to 2.7

Patient reported outcomes

At 15 months the mean scores and confidence intervals (CIs) were:

PHQ-15	12.1, 95% CI 10.2 to 14.2	(moderate somatic symptoms)
PHQ-9	11.3, 95% CI 8.7 to 14	(moderate depression)
GAD-7	10.6, 95% CI 8.3 to 12.9	(borderline mild anxiety symptoms)
EQ-5D-5L	6.2, 95% CI 4.7 to 7.8	(average of mild problems across domains)

Baseline EQ-5D-5L subscale scores

Mobility	1.3, 95% CI 0.9 to 1.7	p value = 0.053
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Selfcare	1.2, 95% CI 0.7 to 1.6	p value = 0.27
Usual Activities	0.9, 95% CI 0.5 to 1.4	p value = 0.006
Pain/Discomfort	1.5, 95% CI 1.6 to 1.9	p value = 0.33
Anxiety/Depression	1.5, 85% CI 1.1 to 1.9	p value = 0.00009

The p values above are for the simple linear models for each of the individual aspects.

In all domains modelling change over time on the data using simple linear models shows clinically and statistically significant improvements as reported on the PROMS completed by the patients (see figures 1 & 2). An indication of rate of improvement is shown by the change in each PROMs value for each month since referral to the service. (see Figure 1)

Discussion

Main findings

Our baseline data shows how complex the symptoms in this patient group is. The physical severity is too high (98th centile for PHQ-15, for age matched population) for routine mental health services to clinically manage and the psychiatric severity is too high (severe depression and severe anxiety) for physical health services to clinically manage. As has been shown in reports from the Kings Fund and Centre for Mental Health (15, 16, 17, 18, 19) the lack of a clinical service that can effectively meet the needs of these patients means that they use a disproportionate amount of healthcare resource this not surprising as their symptoms have not improved which is why they return.

Our integrated multidisciplinary liaison psychiatry model based in primary care delivers significant clinical results for patients. These are statistically significant and clinically relevant improvements in depressive symptoms (PHQ-9), anxiety symptoms (GAD-7) and physical symptoms (PHQ-15), see figure 1. The improvements in the EQ-5D-5L shows that in a whole health measure there are significant improvements over all and specifically in the anxiety/depression and usual activity domains; the mobility improvement is very close to significance whilst the others show a trend towards improvement, see figure 2.

Our data show that with our new service's integrated muliti-disciplinary model of treatment there are significant improvements in patients report of symptoms. This is encouraging because often the patient group is thought by some clinicians to not improve and with the multiple symptoms they have they visit healthcare professionals regularly trying to get help. It is is even more remarkable when one considers that these improvements are occurring during the COVID-19 pandemic and restrictions, where most people are feeling more anxious and low in mood.

This data shows that our integrated multidisciplinary model helps patients symptoms improve. We have shown elsewhere (20) that there are process and cost saving, but this is only because patients symptoms improve and therefore do not need further input. This shows that wrapping the right clinical care around the patient is right for the patient, right for clinicians and right for the wider health service.

Integrated financing of these integrated clinical services should be looked at by commissioners and those that decide on which clinical services are funded as many funding models are not across health sectors, let along across mental, physical, social, primary and secondary care, like ours is.

Comparison with existing literature

Whilst there is much published on the burdens of medically unexplained symptoms and comorbid physical and mental health conditions, there is a relative scarcity on service models for this patient group and clinical outcomes for this group. There are reports by places such as the Centre for Mental Health and Kings Fund (15, 16, 17, 18, 19) on new services or models but these do not include outcome data nor are they peer reviewed.

Strengths and limitations

Strengths:

There is very little literature on primary care liaison psychiatry services in the UK and there is very little outcome data for this complex patient group (the authors are not aware of any published literature on this cohort). Publications on primary care liaison psychiatry services refer mainly to identification and treatment of mood disorders co-morbid with physical illness (21, 22) rather than management of the more complex persistent physical symptom cases seen in our service.

We have used repeat PROMS measures throughout the patients time in the service and not just one before-and-after. This models real world scenarios well.

Limitations:

We are reporting on a single centre study. Repeat studies in other areas or multicentre studies are needed to show replication of results.

Implications

Our data demonstrate that the model of integrated multidisciplinary liaison psychiatry in primary care is associated with significant clinical patient improvement, even during a pandemic.

There are the challenges of scaling up, and one challenge which may be of concern is a skill shortage. However we have found that by building on a hospital liaison team used to seeing complex patients on wards and in follow-up clinics, we can transfer those skills into primary care and into disciplines that were not initially in the hospital liaison team (the Physiotherapist, Occupational Therapist and care support worker). There are many liaison teams in other hospitals that could do the same in their area.

Declarations

Ethics Approval

The data presented here were collected routinely for service evaluation, and no new methodology was applied, therefore Research Ethics Committee approval was not required.

Consent for publication

Not applicable

Data Availability

The data that support the findings of this study are available on request from the corresponding author, [CS]. The data are not publicly available due to their containing information that could compromise the privacy of research participants.

Declarations of possible competing interests

Authors CS and LES are employed as part of the service described.

Author NS is related to Author CS.

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Authors' contributions

All authors fulfil all 4 ICMJE authorship criteria.

CS – significantly contributed to the design, acquisition, and interpretation of the data as well as drafting, final approval and accountability of the work presented.

LES – significantly contributed to the acquisition and interpretation of the data as well as drafting, final approval and accountability of the work presented.

NS – significantly contributed to the analysis and interpretation of the data as well as drafting, final approval and accountability of the work presented.

All authors have read and approved the final version of the manuscript.

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Figures

PROM Change during PCPM Treatment

Patients who improve will reduce their score to have fewer symptoms

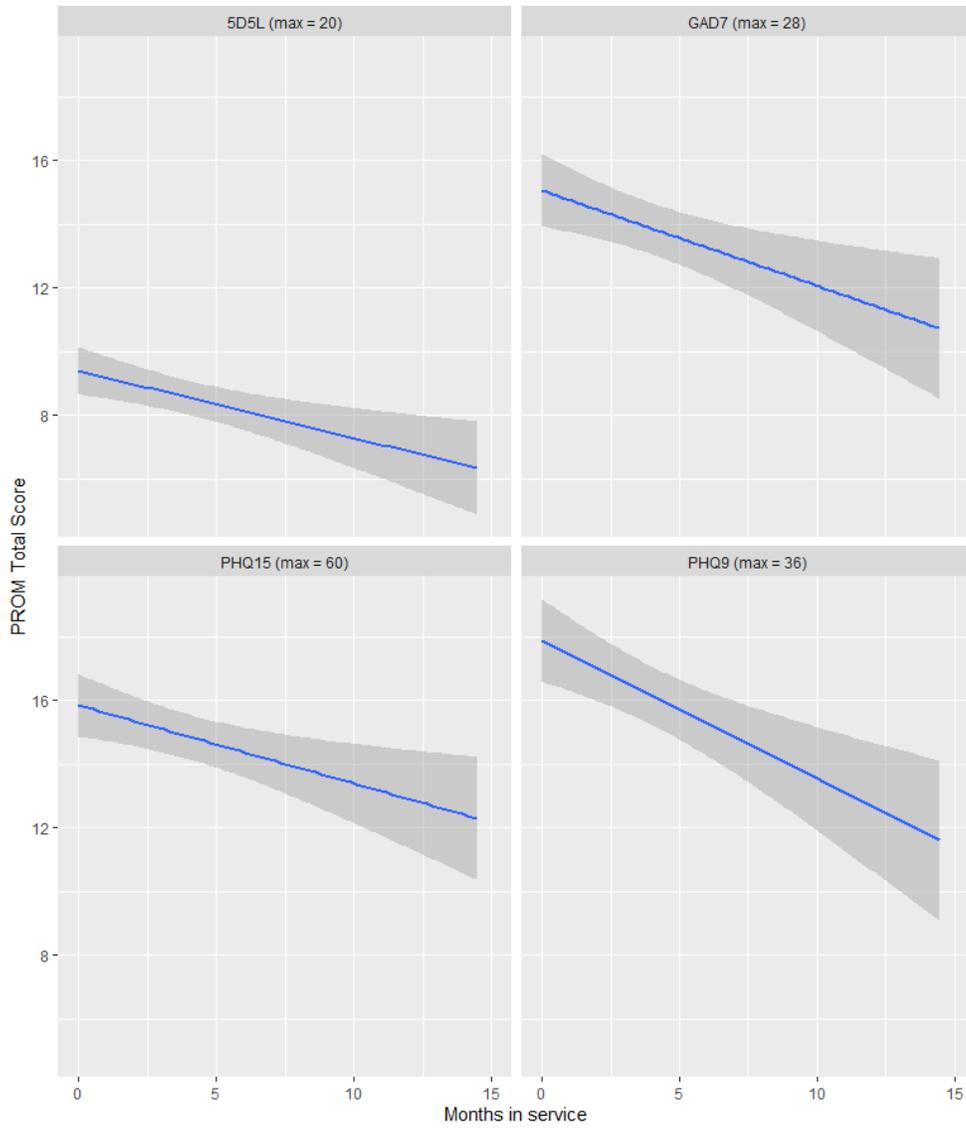


Figure 1

Patient Reported Outcomes in patients seen by the new service (Cohort 1): central estimate (blue line) and the 95% confidence intervals (grey zone)

PROM Change during PCPM Treatment

Patients who improve will increase their score as they have more employment and leave the house more

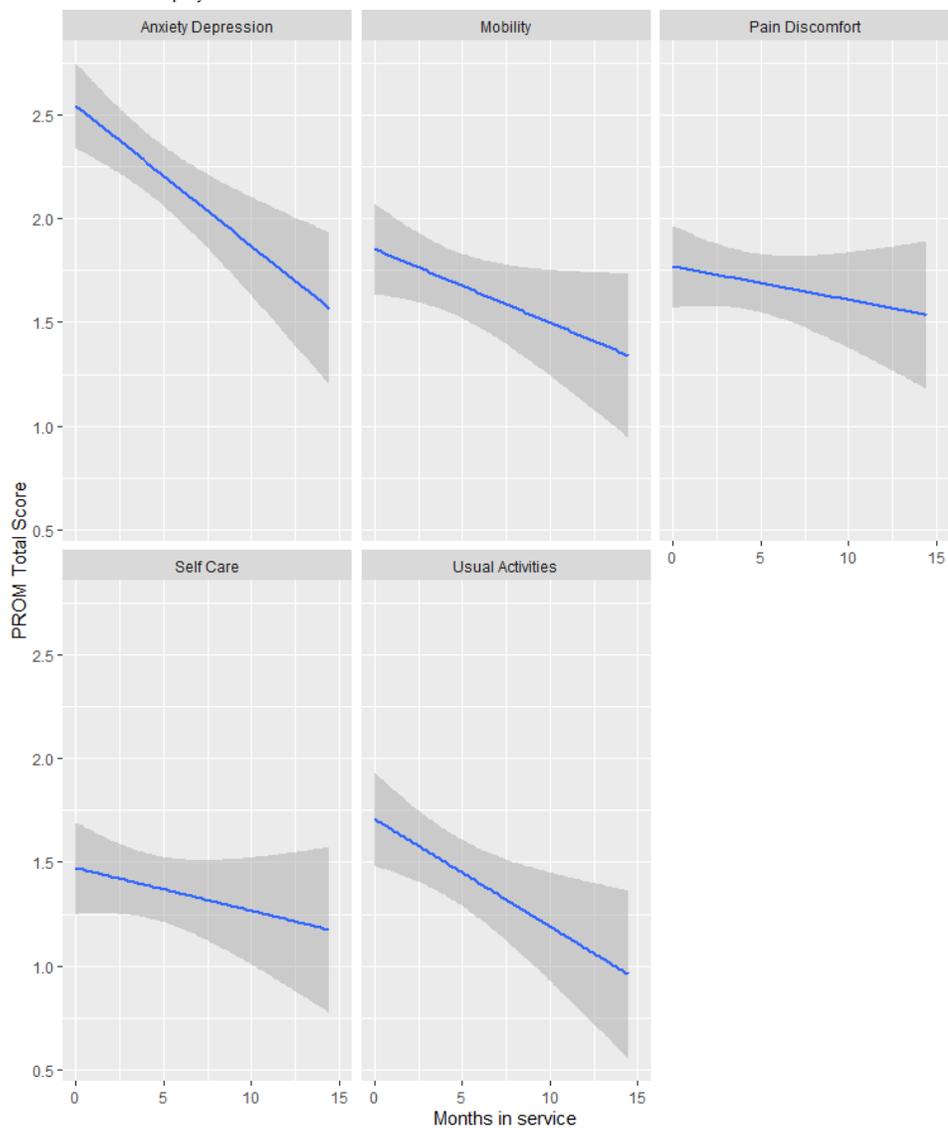


Figure 2

EQ-5D-5L domain changes seen individually.