JPTMH Journal of Physiotherapy in Mental Health

Volume 2, Issue 1 (May 2025)

PP: 15-37

The Relationship Between Physical Function and Psychological Symptoms in Parkinson's: A Survey of UK-Based Physiotherapists

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Received: February 7, 2025 | Accepted: May 7, 2025

Vol. 2, Issue 1 (May 2025)
Journal of Physiotherapy in Mental Health

ORIGINAL

The Relationship Between Physical Function and Psychological Symptoms in Parkinson's: A Survey of UK-Based Physiotherapists

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Abstract: People with Parkinson's Disease (PwP) often experience both motor and non-motor symptoms, including psychological symptoms such as anxiety and depression. However, the relationship between these symptoms and the perspectives of physiotherapists are not well understood. This study describes current approaches to physiotherapy assessment and onward referrals for psychological symptoms. We explore the views of physiotherapists based in the United Kingdom (UK) around the potential interaction between physical function and psychological symptoms in PwP. **Design:** Cross-sectional using an anonymous online survey, ensuring confidentiality and voluntary participation. Data are reported as descriptive statistics. **Participants:** UK-based physiotherapists recruited by convenience and purposive sampling. **Results:** 125 UK-based physiotherapists completed the survey, with questions focusing on their work with PwP, mental health training/experience, outcome measures used, symptom interactions, treatments, and onward referrals. Most reported extensive clinical experience and greater use of outcome measures to assess physical function than psychological symptoms. Whilst altered physical function was often reported to be recognised before psychological symptoms, a direct link between the two was widely acknowledged, notably including symptoms of anxiety and depression. Barriers to onward referrals for psychological symptoms were commonly reported. Conclusions: UK-based physiotherapists recognise a relationship between physical function and psychological symptoms in Parkinson's. However, psychological symptoms are under-assessed in clinical practice, and barriers to onward referral exist. Efforts should be made to improve assessment of psychological symptoms by physiotherapists and address barriers to onward referrals. Enhancing physiotherapists assessment of psychological symptoms and overcoming barriers to onward referrals is essential to provide comprehensive care for PwP.

Summary Box

- *First study exploring physiotherapist practice and perspective on the interaction between physical function and psychological symptoms for people with Parkinson's.*
- *Understanding on the role of physiotherapists in identifying and initiating onward referrals for psychological symptoms identified.*
- *Despite 92% of physiotherapists reporting a perceived relationship between physical function and psychological symptoms in PD, 64% report barriers to onward referrals aimed at addressing psychological symptoms.*
- *The most common measure of physical function reportedly used within clinical practice was the Timed-Up-and-Go, with the most common psychological outcome being the Hospital Anxiety and Depression Scale.*

Keywords: Parkinson's disease, neurodegenerative diseases, symptom interaction, mental health, physiotherapy, survey

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Introduction

Parkinson's disease (PD) is a complex neurodegenerative disorder characterised by a wide range of motor and non-motor symptoms.[1] In addition to the well-recognised motor symptoms such as tremor, rigidity, and bradykinesia, PD can significantly impact an individual's mental health and wellbeing.[2] People with Parkinson's (PwP) present with higher incidences of mental health problems compared to the general population, with up to 40% experiencing depression[3] or anxiety[4], contrary to the 17% experienced in the general population.[5]

Evidence shows that PwP feel that anxiety may amplify their motor symptoms[6-7], including increasing the incidences of freezing of gait.[8] Several studies suggested that as anxiety increases, so does the severity of motor symptoms as assessed by the Unified Parkinson’s Disease Rating Scale (UPDRS)[9-12], however this relationship is yet to be confirmed in more specific measures of physical function such as balance and mobility, or considering other psychological symptoms associated with PD.[13-14]

From our survey of PwP and carers[15], we found that responders were likely to perceive a bi-directional interaction between physical and psychological symptoms, with this largely influenced by an individual’s previous experiences. Physiotherapists, with their frequent and direct contact with PD patients, are well-positioned to assess both physical function and psychological symptoms and comment on their perceived relationship between them. However, the perspectives of physiotherapists, who play a crucial role in the management of PD, have not been extensively explored.

Although NICE guidelines for other neurological conditions (e.g. Multiple Sclerosis) provide specific recommendations for regular cognitive, emotional, or mental health screening[16-17] this is not the case for PD.[18] Specifically, there is reference to generic guidance for adults with chronic problems and that access to allied health professionals should be involved (e.g. physiotherapists). However, physiotherapists not only are lacking training in recognising and assessing these symptoms[19-21], but report reduced confidence and are uncertain regarding their boundaries of their profession’s scope when dealing with mental health problems.[22-26]

Despite the inclusion of various clinical assessment tools within the European Physiotherapy Guideline for Parkinson’s Disease[27], there is a noticeable absence of recommendations regarding the inclusion of measures to assess psychological symptoms or guidance for the use of self-report instruments within these guidelines. Self-report tools can empower patients by allowing them to express their experiences and perceptions regarding their symptoms and overall health status.[28] Furthermore, incorporating psychological assessments as part of a biopsychosocial model[29] recognises the complex interplay between biological, psychological, and social factors in understanding a patient's overall health. By evaluating psychological aspects, such as mood, cognition, and social support, alongside motor symptoms and/or physical function, clinicians may develop more comprehensive treatment plans that address the full spectrum of challenges faced by PwP. To our knowledge, no studies have considered how these guidelines are implemented within clinical physiotherapy practice, and current practices related to awareness and assessment of psychological symptoms.

This study aimed to examine whether UK-based physiotherapists perceive an interaction between physical function and psychological symptoms in PD patients. Objectives included the investigation the outcome measures commonly used to assess physical function and psychological presentation, treatments considered beneficial, and any barriers to onward referrals following the identification of psychological symptoms.

Methods

Study Design

An online cross-sectional survey was administered using Qualtrics (https://www.qualtrics.com). Proposed guidelines for reporting results of e-surveys[30] were followed to address accepted concerns about the representativeness and validity of web-based surveys (Appendix 1). Ethical approval was gained by the School of Science, Technology and Health Research Ethics Committee at York St John University (ETH2223-0030). Responses were collected from May 2023 to May 2024.

Survey Design and Development

The survey was informed by a systematic review[31] and a patient and public involvement group organised via Parkinson’s UK and led by the first author. The survey was pilot tested by a group of physiotherapists working with PwP to assess face and content validity. Subsequent changes included collecting information about percentage of an individual’s clinical caseload that involved PD and requesting further details regarding barriers to onward referrals for psychological input. The survey was designed to take approximately 20 minutes to complete.

The anonymous survey comprised of five sections: 1) demographics (e.g. respondents' work setting, work experience by years working with PwP, percentage of caseload relating to PD, and previous mental health workplace experience); 2) questions exploring assessments routinely used within clinical practice for PwP; 3) perspectives on the relationship between physical function and psychological symptoms in PD; 4) views regarding onward referrals following the identification of psychological symptoms; and 5) treatments perceived to be beneficial for physical function and psychological symptoms (Appendix 2).

Sample and Recruitment

The target population was physiotherapists working across all specialisms in the UK. Recruitment was not limited to neurological services due to the potential for PwP to access a range of physiotherapy services.[32] Respondents were recruited using convenience and purposive sampling followed on with snowballing. To ensure that the survey reached the target population, it was shared via the digital channels of the Parkinson's Excellence Network Exercise Hub, a network of clinicians that work with PwP, and promoted via social media (X). Promotion to clinicians working with PwP (Appendices 3 and 4) was also disseminated via the Chartered Society of Physiotherapy Professional Networks for Physiotherapists working with Older People (AGILE) and Mental Health (CPMH). Further promotion was completed via Parkinson's UK Research Interest groups, iCSP forums, and within a presentation at the CSP Conference in 2023.[33]

To access the survey, respondents used the link provided to access a webpage providing an overview of the survey. Respondents were informed that their responses were anonymous, and Qualtrics settings were used to ensure that respondents only completed the survey once from the same device. Prior to starting the survey, respondents were required to click a box to confirm that they met the eligibility criteria and consented to completing the survey. The Participant Information Sheet was available to be downloaded as a PDF (Appendix 5).

Data Analysis

Descriptive statistics are presented as mean and standard deviation. Likert-type questions were treated as ordinal data, and responses are presented as n (%). Since all respondents were UK-based physiotherapists, all responses were treated as a single group (n = 125). Data were analysed using Microsoft Excel (Version 2308).

Results

Respondent Characteristics

From the 154 responses received, 125 were completed in full (completion rate of 81.2%) and were included in our analysis. Partially completed responses were excluded from our analysis. Respondent characteristics are presented in Table 1.

Outcome Measures Used

Respondents were asked to identify which measures of physical function and psychological symptoms they commonly used within clinical practice. A pre-populated list for both categories was provided in which respondents were able to select as many responses as were relevant to their own practice. In addition to the pre-populated lists, respondents were able to add up to five additional 'other' outcome measures to assess physical function and psychological symptom categories using free-text fields.

The average number of measures of physical function reported by physiotherapists was 3.94 (SD = 2.28). Overall, the three most common measures of physical function reported to be used regularly within clinical practice when assessing PwP were: 1) Timed-Up-and-Go (TUG)[34] (83.2%), 2) Berg Balance Scale (BBS)[35] (70.4%), and 3) 10 metre timed walk[36] (33.6%). Outcomes reported as 'other' included: Tragus to wall test[37], Tinetti Balance Test[38], and Grip strength.[39]

Table 1. Respondent demographics

Demographic Item		Physiotherapist Responses	
		n	%
Total Respondents		125	n/a
Age			
	18-29	28	*22.4%*
	30-39	41	*32.8%*
	40-49	21	*16.8%*
	50-59	27	*21.6%*
	60-69	8	*6.4%*
	70 or older	0	*0.0%*
Gender			
	Male	23	*18.4%*
	Female	102	*81.6%*
	Other	0	*0.0%*
Ethnicity			
	White: English/Welsh/Scottish/Northern Irish/British	111	*88.8%*
	White: Irish	3	*2.4%*
	White: Any other White background	3	*2.4%*
	Asian or Asian British: Indian	3	*2.4%*
	Black or Black British: African	1	*0.8%*
	Black or Black British: Caribbean	1	*0.8%*
	Mixed: White and Black Caribbean	1	*0.8%*
	Mixed: White and Black African	1	*0.8%*
	Arab	1	*0.8%*
	Other	0	*0.0%*
Workplace			
	Emergency Care	2	*1.6%*
	Inpatient (Acute)	27	*21.6%*
	Inpatient (Rehabilitation)	9	*7.2%*
	Outpatient	35	*28.0%*
	Community	45	*36.0%*
	Primary Care	1	*0.8%*
	Non-Clinical	1	*0.8%*
	Other	5	*4.0%*
Specialism			
	Cardiorespiratory	6	*4.8%*
	Domiciliary Services	12	*9.6%*
	Frailty Services	15	*12.0%*
	Learning Disabilities	1	*0.8%*
	Mental Health	12	*9.6%*
	Musculoskeletal Services	10	*8.0%*
	Neurology	45	*36.0%*
	Occupational Health	0	*0.0%*
	Oncology and Palliative Care	0	*0.0%*
	Paediatrics	0	*0.0%*
	Pelvic Obstetric or Gynaecological Services	2	*1.6%*
	Trauma and Orthopaedics	2	*1.6%*
	Rheumatology	1	*0.8%*
	Vascular Care	0	*0.0%*
	Research	1	*0.8%*
	Prefer not to say	0	*0.0%*
	Other	18	*14.4%*
Years post-qualification working with Parkinson's			
	Less than 1 year	10	*8.0%*
	1 - 3 years	13	*10.4%*
	3 - 5 years	10	*8.0%*
	5 - 10 years	31	*24.8%*
	10 - 20 years	35	*28.0%*
	20 - 30 years	19	*15.2%*
	Over 30 years	6	*4.8%*
	Prefer not to say	1	*0.8%*
Percentage of caseload working with Parkinson's			
	Mean (SD)	28.41 (24.59)	
	Range	0 – 100	
Previous training/experience working with individuals with mental health conditions?			
	Yes	71	*56.8%*
	No	54	*43.2%*
Number of years working in mental health (if applicable)			
	Less than 1 year	9	*13.0%*
	1 - 3 years	8	*11.6%*
	3 - 5 years	16	*23.2%*
	5 - 10 years	15	*21.7%*
	10 - 20 years	13	*18.8%*
	20 - 30 years	6	*8.7%*
	Over 30 years	2	*2.9%*
	Prefer not to say	0	*0.0%*

The average number of psychological outcomes reported by physiotherapists was 1.42 (SD = 1.27). The three most common psychological outcome measures reported to be used regularly within clinical practice when assessing PwP were the: 1) Hospital Anxiety and Depression Scale (HADS)[40] (28.0%), 2) EQ-5D[41] (21.6%), and 3) Parkinson's Disease Questionnaire (PDQ-39)[42] (20.0%). Other reported outcomes included: TOMS[43] and Self-assessment Parkinson’s Disease Disability Scale.[44] Measures of physical function and psychological symptoms used in clinical practice are presented in Table 2.

Table 2. Outcomes used within clinical practice

Physical Function	**Physiotherapist Responses**		**Psychological Symptoms**	**Physiotherapist Responses**	
	N	**%**		**N**	**%**
Timed-Up-and-Go (TUG)	104	*83.20%*	Hospital Anxiety and Depression Scale (HADS)	35	*28.00%*
Berg Balance Scale (BBS)	88	*70.40%*	EQ5D	27	*21.60%*
10 metre timed walk	42	*33.60%*	The Parkinson's Disease Questionnaire (PDQ-39)	25	*20.00%*
Five times sit-to-stand (FTSTS)	40	*32.00%*	Patient Health Questionnaire (PHQ-9)	15	*12.00%*
Lindop Parkinson's Physiotherapy Assessment Scale (LPAS)	37	*29.60%*	Geriatric Depression Scale (GDS)	14	*11.20%*
The Parkinson's Disease Questionnaire (PDQ-39)	26	*20.80%*	Generalised Anxiety Disorder Assessment (GAD-7)	11	*8.80%*
Mini-BESTest	21	*16.80%*	Non motor symptoms questionnaire (NMSQ)	10	*8.00%*
6-minute timed walk	19	*15.20%*	MDS Unified Parkinson's Disease Rating Scale (MDS-UPDRS)	7	*5.60%*
Functional Gait Assessment (FGA)	18	*14.40%*	Beck Depression Inventory-II (BDI-II)	3	*2.40%*
Dynamic Gait Index (DGI)	12	*9.60%*	PIMS (Parkinson’s Impact Scale)	3	*2.40%*
Push and Release	10	*8.00%*	Parkinson’s Anxiety Scale (PAS)	2	*1.60%*
Rapid Turns	7	*5.60%*	Hamilton Depression Rating Scale (HAM-D)	1	*0.80%*
MDS Unified Parkinson's Disease Rating Scale (MDS-UPDRS)	6	*4.80%*	Impulsive and compulsive behaviour in Parkinson's: monitoring and information tool	0	*0.00%*
Modified Parkinson's Assessment Scale (MPAS)	4	*3.20%*	Beck Anxiety Inventory (BAI)	0	*0.00%*
Modified Bradykinesia Rating Scale (MBRS)	2	*1.60%*	State Trait Anxiety Inventory (STAI)	0	*0.00%*
Other	57	*45.60%*	Other	24	*19.20%*
Total	***493***		**Total**	***177***	

Symptoms and Interactions

Most physiotherapists completing the survey reported first recognising altered physical function in PwP (73.6%). A further 20.0% reported this concurrently with the development of psychological symptoms, with 4.8% reporting psychological symptoms first, and 4.0% being unsure. Despite this, 92.0% reported perceiving a relationship between physical function and psychological symptoms to exist. Depression

(82.4%), anxiety (73.6%), and apathy (47.2%) were perceived as the most likely psychological symptoms to change in response altered physical function, and this relationship was recognised throughout all stages of PD.

Of the physiotherapists who completed this survey, 98.4% 'Strongly Agree' or 'Agree' that PwP and their caregivers should consider physical function and psychological symptoms together, while 96.8% expressed the same opinion regarding healthcare professionals. The rate of assessment of psychological symptoms by physiotherapists is 35.9% of the reported use of outcomes to assess physical function. Table 3 shows details of physiotherapist reported perceived symptom interactions.

Table 3. Symptoms and interactions

Symptoms and Interactions		**Physiotherapist Responses (n=125)**	
Physical or psychological symptoms first			
	Physical	92	*73.6%*
	Psychological	6	*4.8%*
	Both together	25	*20.0%*
	Prefer not to say	0	*0.0%*
	Unsure	5	*4.0%*
Relationship between physical and psychological symptoms			
	Yes	115	*92.0%*
	No	0	*0.0%*
	Unsure	10	*8.0%*
	Prefer not to say	0	*0.0%*
Stage(s) relationship evident			
	Pre-diagnosis	44	*35.2%*
	Early stages	83	*66.4%*
	Mid-stage	81	*64.8%*
	Late-stage	73	*58.4%*
	End of life	32	*25.6%*
	Dementia	36	*28.8%*
	Other	9	*7.2%*
	Prefer not to say	0	*0.0%*
Psychological symptoms changing most in response to physical symptoms			
	Depression	103	*82.4%*
	Anxiety	92	*73.6%*
	Hallucinations	29	*23.2%*
	Delusions	9	*7.2%*
	Apathy	59	*47.2%*
	Impulsivity or compulsive behaviours	31	*24.8%*
	Memory problems	61	*48.8%*
	Dementia	30	*24.0%*
	Other	6	*4.8%*
	Prefer not to say	0	*0.0%*
To what extent should physical/psychological symptoms be considered together by PwP/carers			
	Strongly Agree	107	*85.6%*
	Agree	16	*12.8%*
	Neither agree nor disagree	2	*1.6%*
	Disagree	0	*0.0%*
	Strongly Disagree	0	*0.0%*
To what extent do you feel physical/psychological symptoms should be considered together by healthcare professionals			
	Strongly Agree	107	*85.6%*
	Agree	14	*11.2%*
	Neither agree nor disagree	3	*2.4%*
	Disagree	0	*0.0%*
	Strongly Disagree	0	*0.0%*

Onward Referrals

Although the most common referrals were made to support groups (82.4%), Psychology (79.2%) and GP services (65.6%), 64.0% of the respondents' identified barriers in doing so. Commonly noted barriers included waiting times to access services, patient willingness to accept referrals, lack of availability and awareness of services, criteria to access services, and an unwillingness of some services to accept referrals from physiotherapist directly. Table 4 shows details of onward referrals reported to be made by physiotherapists following the identification of psychological symptoms.

Table 4. Onward Referrals/Signposting

Onward Referrals/Signposting	Physiotherapist Responses (n=125)	
Onward referrals/signposting to address psychological symptoms		
Occupational Therapy	60	*48.0%*
Speech and Language Therapy	23	*18.4%*
Other physiotherapy colleague(s)	22	*17.6%*
Psychology	99	*79.2%*
General Practitioner	82	*65.6%*
Neurologist	70	*56.0%*
Exercise Groups	66	*52.8%*
Charities	61	*48.8%*
Support Groups	103	*82.4%*
Friends/Family	50	*40.0%*
None	0	*0.0%*
Unsure	2	*1.6%*
Prefer not to say	0	*0.0%*
Other	18	*14.4%*
Barriers to onward referrals aimed at addressing psychological symptoms		
Yes	80	*64.0%*
No	26	*20.8%*
Don't Know	18	*14.4%*
Prefer not to say	1	*0.8%*

Treatments

To improve physical function, physiotherapist respondents identified the three most effective treatments as exercise (99.2%), physiotherapy (98.4%), and medication (95.2%). For psychological symptoms the three identified treatments by physiotherapy respondents were exercise (92.8%), psychology (86.4%) and mindfulness (84.8%).

Exercise is commonly cited as being beneficial for both physical functioning and psychological symptoms[45-49], and is of major importance given the high reported incidence and impact of physical function and psychological symptoms on function and quality of life.[31,50-51]

Table 5 displays details of treatments perceived by physiotherapists to be beneficial for physical function and or psychological symptoms.

Table 5. Treatments

Treatments	Physiotherapist Responses (n=125)	
Beneficial Treatments for Physical Function:		
Medication	119	*95.2%*
Exercise	124	*99.2%*
Mindfulness	76	*60.8%*
Physiotherapy	123	*98.4%*
Occupational Therapy	104	*83.2%*
Speech and Language Therapy	81	*64.8%*
Psychology	64	*51.2%*
Psychotherapy	35	*28.0%*
Counselling	56	*44.8%*
Complementary Therapies	52	*41.6%*
Not applicable	0	*0.0%*
Other	4	*3.2%*
Beneficial Treatments for Psychological Symptoms:		
Medication	102	*81.6%*
Exercise	116	*92.8%*
Mindfulness	106	*84.8%*
Physiotherapy	89	*71.2%*
Occupational Therapy	87	*69.6%*
Speech and Language Therapy	65	*52.0%*
Psychology	108	*86.4%*
Psychotherapy	73	*58.4%*
Counselling	101	*80.8%*
Complementary Therapies	78	*62.4%*
Not applicable	0	*0.0%*
Other	5	*4.0%*

Discussion

This online survey aimed to examine whether UK-based physiotherapists perceive an interaction between physical function and psychological symptoms. Respondents generally appear to perceive an interaction between physical function and psychological symptoms in Parkinson's and are well-placed to also identify psychological symptoms. Despite this, there is a lack of assessment for psychological symptoms in physiotherapists clinical practice, and there are obstacles to making further referrals when problems are recognised.

Using standardised, validated outcome measures is an explicit requirement of the CSP's Quality Assurance Standards.[52] In 2011, the National Parkinson's Audit[53-54] identified the Berg Balance Scale, Timed-Up-and-Go (TUG), and 10-minute timed walk to be the most common outcome measures used in physiotherapy. Our results also support such findings. Specifically, outcomes reported in our survey tended to focus predominantly on clinician-assessed measures of gait and balance alongside measures of Parkinson's specific symptoms and patient reported outcomes. Interestingly the MDS-UPDRS was reportedly used by only 4.8% of physiotherapists (n=6), indicating that its use within clinical physiotherapy settings is limited. This may be due to factors such as its long completion time (30 minutes)[55], and the broad range of symptoms assessed.[56] Therefore, physiotherapists may perceive it to be as not clinically relevant.

Although the National Parkinson's Audit[53-54] did not distinguish between physical and psychological outcomes, the results demonstrate a clear focus on the assessment of physical function. Our survey was not only an update of the above audit, but it was also able to capture the specific use of measures to assess physical function and psychological symptoms by physiotherapists working with PwP. UK physiotherapists reported using outcome measures to assess physical function 2.8 times more than psychological measures, indicating a missed opportunity to identify psychological symptoms and initiate onward referrals to help with addressing these symptoms. This imbalance in care suggests that physiotherapists treating PwP may prioritise physical rehabilitation over holistic approaches, neglecting the significant psychological distress often experienced. Previous research indicates that physiotherapists are typically poor at identifying psychosocial factors[57], in conflict with the biopsychosocial model of care.[29] McGrath et al.[58] highlighted that while physiotherapists recognise the importance of assessing psychological symptoms in their patients, there is a significant need for clearer guidance and structured approaches to effectively identify and manage psychological distress, particularly as many physiotherapists feel uncertain about their role in this area.

From the responses received, physiotherapists appear to rely on clinician-assessed measures to evaluate physical function, which offer limited insight into an individual's perceived functional ability in comparison to combining with self-reported measures.[59] Previous research has suggested that that while clinician assessments of physical function correlated well with performance measures, patient self-reports were more strongly associated with psychological and social factors, such as fear of falling and depression, highlighting the complementary value of both approaches for a comprehensive understanding of physical function.[60]

The European Physiotherapy Guideline for Parkinson's Disease prioritises the use of clinician-assessed measures, with the majority of recommended outcome measures not considering patient self-reported function, and no guidance related to the assessment of psychological symptoms.[27] The inclusion of patient-reported measures is justified by evidence not only in PwP[61], but also stroke patients[62], in which discrepancies between clinician versus patient-reported measures were identified and linked to the presence of psychological symptoms. This research highlights the mind-body connection[63], suggesting that integrating physical and psychological assessments in physiotherapy can enhance practice across various conditions. Addressing psychological outcomes may improve symptom identification and onward referrals across diverse therapeutic settings.

Notably, the majority of our UK-based physiotherapist respondents recognised the potential interaction between physical function and psychological symptoms at all stages of PD. To our knowledge, this is the first study to examine this, and builds upon our previous work with PwP and carers.[15] Considering the reported high prevalence of psychological symptoms in PD[3-4,64], it is reasonable to expect symptoms such as depression, anxiety, and apathy to fluctuate in response to changes in physical functioning. Indeed, we found this expectation was shared by respondents, who reported that from their perspective, depression (82.4%), anxiety (73.6%) and apathy (47.2%) were the most likely psychological symptoms to change in relation to physical function. One explanation for this may be that such psychological symptoms may alter when there are changes in an individual's quality of life and disability. Previous research suggests psychological symptoms worsen as a result of life challenges including loss of independence and changes in social roles, with individuals withdrawing from activities they once enjoyed.[65-66]

Although our findings suggest that physiotherapists recognise the importance of assessing physical function and psychological symptoms together this does not appear to translate into routine clinical practice. Previous work in this area suggests that non-motor symptoms of Parkinson's, including psychological symptoms, are given less attention by clinicians irrespective of the fact that such neglect may substantially increase the cost of care.[67] This may be due to a lack of awareness of the importance of psychological symptoms, confidence in assessing, and confusion around individual responsibilities by clinicians, and/or a result of time pressures within clinical services.[68]

We found that our respondent physiotherapists reported making referrals to onward services to address the psychological symptoms they identified and therefore showed some awareness of such onward referral options. Despite this awareness, 64% reported barriers when making those onwards referrals whereas only 21% reported no barriers at all, with the remainder unsure or preferring not to say. The most common reported barriers included waiting times for accessing services, patient unwillingness to be referred, lack of availability and awareness of local services, criteria to access services, and an unwillingness of services to accept referrals from physiotherapist directly. Such barriers have been documented in previous research[69-71] NICE guidelines for PwP simply refer to existing generic guidelines on depression in adults with chronic health problems recommending access to allied health professionals (e.g., physiotherapists, PD nurse specialist)[18], rather than offering specific guidance may contribute to these barriers. This is a contrast to other neurological conditions such as Multiple Sclerosis, where guidelines include specific recommendations for regular cognitive, emotional or mental health screening.[16-17]

Our respondents identified exercise, physiotherapy, and medication as the most effective treatments to improve physical function, while psychology, mindfulness, and exercise were seen as the most helpful for psychological symptoms. Research supports these views, showing that regular physical activity improves physical function, quality of life, and mental health in PwP.[72-73] Physiotherapy complements exercise by targeting balance and mobility, reducing the risk of falls and promoting independence.[74] Medication, particularly levodopa, is essential for managing key motor symptoms like tremors, stiffness, and slow movement.[75] For psychological symptoms, Cognitive Behavioural Therapy (CBT) has been proven to reduce anxiety and depression by improving coping skills and emotional resilience.[76] Mindfulness practices help alleviate stress and improve emotional regulation.[66] Additionally, exercise benefits both body and mind by lowering depression and anxiety rates, boosting mood, and enhancing cognitive function in PwP.[77]

Given that many physiotherapy interventions focus predominantly on movement and exercise, it is reasonable to expect these to impact on an individual's psychological presentation as well as physical functioning[78], reinforced by views from PwP and carers who report exercise to be one of the most effective treatments for both physical and psychological symptoms.[15] Our recent systematic review[31] highlighted that within many clinical research studies, information relating to both physical function and psychological symptoms is commonly collected together, but is under-utilised from a research perspective. To this end, routine assessment within clinical practice has the potential to allow the monitoring of psychological symptoms to initiate (or retract) onward referrals made to address psychological symptoms. Involving physiotherapists in this process may help to identify psychological symptoms, reduce unnecessary costs and onward referrals, improve patient wellbeing, and promote exercise as an evidence-based treatment for mental health issues in PwP.

Strengths and Limitations

Whilst efforts were made to minimise limitations, these should be acknowledged. Firstly, our findings may not be generalisable outside of the UK or transferrable to other professional groups. Secondly, participants completing the online survey may have self-selected based on their interest in the topic, which could result in a sample that is not fully representative of the broader population and may influence the findings. Thirdly, it was not possible to collate information about the reported frequency of outcome measures used and onward referrals made within practice, which impacts on our ability to make inferences regarding the ease of assessing treatment efficacy.

To our knowledge, this is the first study to explore the perspectives of UK-based physiotherapists, which provides a direct account of how these issues are viewed by providers of clinical care. Given the immense variety of clinical settings covered by physiotherapists in the UK, this research provides an insight not previously available and offers a platform for further investigation.

Recommendations

The integration of psychological assessment into clinical physiotherapy practice has the potential to improve patient care. We recommend the development of clinical pathways that include opportunities for symptom screening and onward referrals for psychological support. Physiotherapists, as integral members of multidisciplinary clinical teams, are well-positioned to participate in these pathways; however, they require clear guidance on assessing psychological symptoms. We also recommend that physiotherapists utilise both therapist-assessed and self-reported measures of physical function, as any discrepancies between these assessments may indicate the need to evaluate psychological symptoms. Given the potential lack of awareness regarding the importance of psychological symptoms, as well as clinicians' confidence in their assessment abilities and confusion about individual responsibilities, exacerbated by time pressures within clinical services, it is essential to address the disconnect between clinician perceptions and actual practice.[68] Therefore, we advocate for updated guidelines that provide explicit recommendations regarding the roles of clinicians, particularly physiotherapists, in identifying, referring, and/or treating psychological symptoms.

Conclusion

The findings from this research highlight the need for a more integrated approach to physiotherapy in managing PD, particularly regarding the interplay between physical function and psychological symptoms. Our survey results indicate a recognition among UK-based physiotherapists of the interaction between these symptom groups, yet there remains a substantial gap in clinical physiotherapy practice where psychological assessments are concerned. Despite an awareness of the psychological challenges faced by patients, barriers such as referral difficulties and a lack of specific guidelines hinder effective intervention.

To enhance patient care, we recommend that physiotherapists adopt a dual assessment strategy that includes both clinician-assessed and self-reported measures of physical function and psychological symptoms. This approach aligns with emerging evidence on the mind-body connection and promotes a holistic understanding of patient needs. We advocate for updated clinical guidelines alongside improved education and training opportunities to provide clear directives on the role of physiotherapists in identifying and addressing psychological symptoms. By addressing these gaps and developing existing care pathways, we can improve patient outcomes, facilitate timely referrals to mental health services, and ultimately enhance the quality of life for individuals living with PD. This research serves as a step toward advocating for necessary changes in clinical practice and policy to better support both the physical and mental health of patients.

Ethical Approval

The protocol for this study received local ethics approval from the School of Science, Technology and Health Research Ethics Committee at York St John University on 10/05/2023 (Ethics reference: ETH2223-0030).

Funding

This work was completed as part of an ongoing PhD being completed through a partnership between Tees, Esk and Wear Valleys NHS Foundation Trust and York St John University. This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Equity, Diversity, and Inclusion Statement

We are committed to ensuring equality, diversity, and inclusion in this research. This commitment was applied throughout the research process as follows:

Research Team: The research team reflects a diversity of backgrounds, including professional experience, race/ethnicity and gender.

Study Population: This study utilised an existing dataset. We acknowledge that the original data collection may have had its own limitations regarding the representation of diverse populations. However, for the purposes of this analysis, we included all available data without exclusion based on age, gender, ethnicity, socioeconomic status, or geographic location. This approach ensured that the analysis was as inclusive as possible, given the constraints of the dataset.

Research Methodology: The research methodology involved the analysis of an existing dataset. The original data collection methods may have influenced the data available for analysis. We employed rigorous statistical methods to ensure the data was analysed objectively and without introducing bias.

Analysis and Interpretation of Results: Any limitations in the generalisability of our findings due to potential underrepresentation in the original data are acknowledged and discussed within the manuscript. We interpreted the results in the context of existing literature, paying particular attention to how the findings may differentially impact various populations.

We believe that this work contributes to a more equitable understanding of this topic by analysing the data in an inclusive manner, and we acknowledge the limitations of the original data collection process.

Declaration of Competing Interest

None declared.

Acknowledgements

The authors wish to thank the physiotherapists who took the time to participate in this survey, and professional networks for assisting in the dissemination of this survey.

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APPENDICES

Supplementary Material

Supplemental material associated with this article will be made available here.

- Appendix 1 - CHERRIES guidelines
- Appendix 2 – Survey questions
- Appendix 3 – Promotional flyer
- Appendix 4 – Promotional email
- Appendix 5 – Participant information sheet