Self-management systems for Patients and Clinicians in Parkinson’s care: Protocol for an integrated Scoping Review, Product Search and Evaluation

Selina Boege, Madison Milne-Ives, Edward Meinert, Camille Carroll

Submitted to: JMIR Research Protocols
on: March 26, 2024

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Abstract

Background: Parkinson's disease poses emotional and financial challenges on patients, families, caregivers, and healthcare systems. Self-management systems show promise in empowering people with Parkinson's and enabling more control over their treatment. The collaborative nature of Parkinson's care requires communication between patients and healthcare professionals. While past reviews explored self-management systems in Parkinson’s disease diagnosis and symptom management with a focus on patient portals, there is limited research addressed the interconnectivity of systems catering to both patients’ and clinicians' needs. A system's acceptability and usability for clinicians are pivotal for enabling comprehensive data collection and supporting clinical decision-making, which can enhance patient care and treatment outcomes.

Objective: This review aims to assess Parkinson's disease self-management systems that include a clinician portal and to determine which features enhance acceptability and usability for clinicians. The primary aim is to assess evidence of clinicians’ acceptability and usability of self-management systems with a focus on the integration of systems into clinical workflows, data collection points, monitoring, clinical decision-making support, and extended education and training.

Methods: The review will entail three separate stages: a literature review following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses Extension for Scoping Reviews guidelines, a product search, and an evaluation of the level of evidence for the identified products. For the first stage, six databases will be searched: PubMed, CINAHL, Scopus, ACM digital library, IEEE Xplore and EBSCO. Studies eligible for inclusion will be qualitative, quantitative, and mixed-methods studies examining patients’ and clinician’s perceptions of the acceptability and usability of digital health interventions, synthesised by a narrative qualitative analysis. A web search in the iOS Apple App Store and Android Google Play Store will identify currently available tools; the level of evidence for these will then be assessed using the Oxford Centre for Evidence-Based Medicine guidelines.

Results: The review will be executed in August 2024.

Conclusions: This review will examine currently available self-management systems in Parkinson's care, focusing on their acceptability and usability. This is significant because there is limited research addressing the integration of clinicians into these systems. Findings from this study may provide critical knowledge and insight to help inform future research and will contribute to the design of self-management systems that promote collaborative efforts in Parkinson's disease care. Clinical Trial: This review was conducted as a scoping study protocol and has not been registered as a clinical trial.

(JMIR Preprints 26/03/2024:58845)
DOI: https://doi.org/10.2196/preprints.58845

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Keywords: Parkinson’s disease, digital health; self-management; healthcare systems

Introduction

“Parkinson's disease (PD) is a complex and progressive neurological condition with no current cure. It represents the second most common neurodegenerative disorder worldwide [1], with a 30% rise in prevalence and incidence between 2018 and 2030 [2], [3]. Clinicians in PD care often have limited data due to infrequent patient contact, constraining their ability to fully inform treatment decisions [4]. The diversity of symptoms experienced by people with PD means that care management is complex. Optimising symptom management requires an understanding of current symptoms and trends, necessitating thorough communication between patients and clinicians [4], [5]. Positive relationships between patients and clinicians can enhance patient trust, medication adherence, and the patients’ active engagement in care, with potential benefits in mitigating healthcare disparities, fostering interdisciplinary collaboration and ultimately enhance patient outcomes [6], [7]. Given the strain on healthcare resources and the limited regular clinical contacts, digital technologies have the potential to help patients self-manage symptoms and provide accurate records of symptoms for clinical review. Despite the availability of such systems, there is limited understanding of how they are adopted, accepted, and used within clinical contexts.

Despite advancements in digital health, many systems still fall short in effectively compiling information for clinician use at the point of care and facilitating seamless care communication [6]. Systems that combine patient self-reporting with clinician management can improve data collection and communication, leading to more efficient care, better decision-making, and ultimately enhanced patient outcomes through more timely and personalised interventions [6], [7]. Previous research has extensively examined engagement with and impact of digital tools in Parkinson's disease (PD) care, focusing on self-management methods to enhance physical and cognitive aspects for patients [8]–[18]. A comprehensive understanding of the acceptance and usability by healthcare professionals is lacking, leaving room for more inclusive research in PD care
[19]–[28]. There is a need to understand what systems are currently available, how they integrate self-management techniques and how clinical elements and clinicians are integrated [29]–[35]. This knowledge gap is particularly crucial to address, as improving clinician engagement with digital tools can lead to more effective and tailored patient care strategies.

This study aims to fill this gap by examining the state of the literature on clinician perspectives of PD self-management systems and the state of clinician-focused features in existing self-management systems. The review will summarise available systems and evidence of their acceptability and usability of self-management systems while the product evaluation will identify active digital applications, tools, and services (e.g. apps, websites, portals, and wearable devices) that support self-management for people with PD to explore what types of technologies are used, which self-management techniques are applied, and how clinicians are integrated.”

Methods

Design

This review is structured in three distinct stages, each contributing to building a comprehensive overview and understanding of the landscape of self-management systems for PD. We will perform a scoping review by leveraging bibliographic databases, search and select eligible systems on the Apple App store and Google Play store and evaluate the level of their evidence. Identified self-management systems will be evaluated using the Oxford Centre for Evidence-Based Medicine (OCEBM) guidelines following adherence to established eligibility criteria. Separate analyses will be conducted for the scoping review and product evaluation, as they will extract different types of data, but findings from each will be synthesised in the discussion. The design concludes with a narrative synthesis to summarise study findings and product evaluation results, incorporating study methods, key findings, and outcomes. All review stages are summarised in Table 1.

Table 1. Review Stages

Review Stage	Data Collection Method	Analysis Method
Stage One: Scoping Review	Search bibliographic databases (PubMed, CINAHL, Scopus, ACM Digital Library, IEEE Xplore) using PRISMA-ScR and PICOS frameworks	Narrative synthesis to identify key themes and gaps
Stage Two: Product Search	Search Apple App Store and Google Play Store using relevant keywords	Evaluation of system characteristics and user feedback
Stage Three: Data Analysis	Extract data from literature review and product search	Adapt OCEBM guidelines for system classification and narrative synthesis

Ethical considerations

There are no ethical considerations for the first stage (scoping review), as this will only examine previously published data. For the stage two production evaluation, we will be evaluating intervention features and will not have access to any patient data. The privacy of any user data accessed from app store reviews will be protected through anonymisation in the data extraction process.

Search Strategy

Stage One: Scoping Review

Search

The first stage of the research involves the exploration of existing literature through six bibliographic databases: PubMed, CINAHL, Scopus, ACM Digital Library and IEEE Xplore. The search strategy is designed to identify studies employing qualitative, quantitative, and mixed method approaches that investigate healthcare professionals' perspectives on the acceptability and usability of self-management systems. The Preferred Reporting Items for Systematic Reviews and Meta-Analyses Extension for Scoping Reviews (PRISMA-ScR) [Appendix 1: PRISMA-ScR checklist] and Population, Intervention, Comparator, Outcome, and Studies (PICOS) frameworks were used to structure the protocol for the review strategy (Table 2) [35].

The PICOS framework was used to outline key themes that shaped the search strategy (Table 3), with themes relating to the population (healthcare professionals), intervention (PD AND self-management interventions), and outcomes (evaluation).

Table 2. PICOS framework [35]

PICOS	**Detail**
Population	Healthcare Professionals (HCP) treating patients
Intervention	Digital interventions for self-management for PwP (people with Parkinson) e.g. telehealth, exergaming, websites, smart homes, mobile application, web-based systems, wearable devices, which offer a clinician portal or similar which may enable clinical use e.g. e-record integration, messaging feature, remote monitoring, or treatment decision support
Comparator	None
Outcomes	Primary outcome: Clinician usability and acceptability of digital interventions for self-management in PD care Secondary outcomes: Factors that might impact the usability of these systems including regulatory requirements, training protocols, and any other elements that may influence the overall user experience for both PwP and clinicians
Study types	Qualitative and quantitative studies, e.g. case-control studies, case series, longitudinal studies, cohort studies, or RCTs

The scoping review will be utilized to systematically chart and synthesize data to identify key themes and gaps in the existing literature, thereby providing a comprehensive overview of current research results and studies to build the foundation for subsequent stages of this research, ensuring that relevant aspects are actual and addressed. The database search will be performed in August 2024 using PubMed (MeSH terms), CINAHL (abstract), Scopus (title/abstract), ACM digital library (full text), IEEE Xplore (full text). A preliminary exploration of identified relevant terms based on the PICOS framework was used to develop the search strategy (Appendix 2: Search string of sample search). The search strategy will include a set of keywords relating to digital self-management tools and their user-friendliness and user acceptance. Keywords were derived from medical subject headlines related to the subject and used as search terms (Table 3).

Table 3. MeSH terms and keywords used for literature search

Category	**MeSH**	**Keyword (in Title/Abstract)**
Parkinson’s Disease	Parkinson disease OR parkinsonian disorders	“Parkinson’s disease” OR parkinson OR parkinson’s OR “parkinson disease”
Healthcare	Physicians OR health personnel	“Healthcare professional” OR

professional		"healthcare personnel" OR clinician OR practitioner OR doctor OR nurse OR "care professional"
Self-management intervention	Electronic OR technology OR data collection OR internet-based intervention OR digital health OR telemedicine OR computing methodologies OR software OR wearable electronic devices OR self-help devices OR rehabilitation OR computer-user training	"Digital intervention" OR technology OR system OR portal OR remote OR home-based OR database management system OR internet-mediated therapy OR remote consultation OR personal health services
Evaluation	Quality of healthcare OR healthcare evaluation mechanism OR program evaluation OR attitude OR behaviour OR acceptance process OR acceptance processes OR treatment adherence and compliance OR communication methods, total OR security measures OR educational measurement OR time management OR efficiency, organizational	Evaluation OR attitude OR user experience OR acceptability OR usability OR impact OR acceptance OR compliance OR conformity OR efficiency

Eligibility

Studies eligible for inclusion are papers that analyse self-management systems for people with Parkinson's disease and their healthcare professionals (HCP), embed clinical measures or focus on clinical evidence of acceptability and/or usability. A comprehensive definition of self-management interventions was employed to enable the collection of various intervention types. Any digital form of intervention, whether websites or mobile applications, are considered for inclusion if the system's intention includes enhancing any aspect of patient self-management in Parkinson's disease. Inclusion criteria for literature encompass published studies at any given time, including randomised controlled trials (RCTs), cohort studies, and case-control studies. There will be no limit of the publication date as this review aims to have a full overview of available self-management systems for patients with Parkinson's.

Studies which do not review or analyse self-management intervention for Parkinson disease will be excluded as well as editorials, perspective articles, conference papers and protocols. Literature that is not published in English will be excluded as the research team does not have necessary resources to assess these.

Screening and selection of studies

The selection of studies will be determined by review of study titles and abstracts in the indexed databases to assess their relevance to the use of digital self-management systems for Parkinson's. Selected references will be managed, and duplicates will be eliminated using the citation management software EndNote X21. The initial screening of these references, based on search strategy keywords, will be conducted through EndNote X21's search function. Two authors will screen the title and abstract of each record and will either include or exclude using the eligibility criteria previously described. Once title and abstract screening is completed, selected records will be obtained for full text screening. Full-text screening will be undertaken following the eligibility criteria. The stages of the scoping review process and selection of records will be presented using the PRISMA-ScR Flow Chart [35]. The data extraction and analysis process for this scoping review are described in stage three.

Stage Two: Product Search

Search

The second stage includes the search and selection of digital interventions currently available on app stores. The process will be executed by searching the Apple App Store, and Google Play Store using relevant keywords to identify and assess digital interventions. The keywords 'Parkinson' and 'Parkinson's Disease' will be searched separately on both app stores; all results from each search will be extracted, and the lists combined, and duplicates removed before screening. This stage is designed to encompass a diverse range of self-management tools available that are specific to PD or of potential relevance for patients managing specific symptoms caused by PD. This stage aims to respect the dynamic nature of the systems available for clinicians, ensuring the inclusion of real-world offerings to facilitate a holistic analysis of practical implications for available digital solutions.

Eligibility

Any digital self-management intervention, such as websites, web portals, mobile apps, or wearable devices, will be considered eligible if it primarily focuses on providing self-management services for individuals diagnosed with Parkinson's disease. The system will be designed to operate as a standalone product, eliminating the need for the combination of multiple devices. This was chosen to account for operational or financial consequences for the patient in acquiring the system. The system may adopt a paid subscription model, feature in-app purchases, or be offered free of charge to users. Systems included for review must be available in the Apple App store or Google Play store and accessible in English and in the UK App store. Eligible apps are any systems for the use of PD self-management. Detailed eligibility criteria are presented in Table 4.

Table 4. Eligibility criteria for systems on App stores included in the study

Inclusion criteria	
	Systems available on the UK Apple App Store or UK Google Play store
	Systems available in English
	Systems intended for the self-management of Parkinson's disease
Exclusion criteria	
	Systems not available on the UK Apple App Store or UK Google Play store
	Systems not available in English
	Systems not yet released for public use or access

Screening and selection of self-management systems

All self-management systems found in the scoping review or product searches will be documented in a Microsoft Excel file, and duplicate entries will be removed. Systems meeting the criteria will be accessed and purchased, if necessary, and downloaded to either MacOS system, or iOS or Android devices. Any systems that, upon closer inspection, does not meet the inclusion criteria will be excluded. In case of disagreements between the reviewers, these will be discussed and, if required, resolved by a third reviewer.

Stage Three: Data Analysis

Data extraction

Following completion of the screening process and de-duplication using EndNote 21 software, eligible studies will be transferred to a Microsoft Excel spreadsheet for further data extraction (Table 4). Any modifications to the data extraction items will be recorded contemporaneously and reported in the final review.

Table 4: Full data charting list

Literature: System Description	
	Name
	Year of launch
	Technology Domain (e.g. IoT, mobile app or website)
	Costs
	Evaluation method
	Type of self-management intervention
	Description of self-management intervention
Product Evaluation: System Characteristics	
	Intervention Outcome/ Intention
	Possibility of Data Exchange (Clinician - Patient)
	Peer Collaboration (Clinician - Clinician)
	Feedback Mechanism
	Possibility of Uploading E-health Records
	(Real-Time) Remote Monitoring
	Alerts and Notifications
	Training Support
	Appointment Scheduling
	Integration of Wearables

Data analysis

Data extracted from the studies included in the literature review will be analysed and synthesised narratively. The criteria used to assess the systems found through literature and product searches will be adapted from the Oxford Centre for Evidence-Based Medicine (OCEBM) guidelines [7]. In this categorisation, systems will be classified based on the strength of their evidence, ranging from case reports to randomised-controlled trial (RCT) methodology. We will characterise self-management systems described in these reports based on different types of technology, such as mobile applications, websites, web-portals, telehealth, digital communication platforms, digital solutions for data management, wearable devices, online training systems. The analytical narrative synthesis of the reviewed literature will examine what self-management techniques are used within the systems and how clinicians are incorporated, investigating if their perspectives are solicited and the degree to which such feedback influences the design and evolution of these digital tools. Systems will be summarised focussing on clinical and operational intention to identify key trends and outcome measures will be examined. Results of this will be tabulated to facilitate visualisation of identified systems and their characteristics and elaborated in the discussion of the review. Following the summarisation of the findings from the literature review and system selection, the final stage will be a synthesis of qualitative findings from eligible studies combined with information derived from the system search and system descriptions or reviews on the app stores. By categorising systems based on technology domain and examining the qualitative data about user experiences, stage three aims to synthesise information found, enabling a deeper understanding of digital self-management solutions for patients and clinicians in relation to the type and features of the technology to ensure that the systems not only serve patients but also include integral components in the clinical workflow, fostering an efficient and collaborative care environment. The synthesis of qualitative insights with system evaluations will reveal how well current tools support this vital relationship, guiding the development of future solutions to better meet the needs of both patients and healthcare professionals.

Results

The results will be included in a review paper, which we aim to publish in 2024.

Discussion

This review will examine currently available self-management systems within Parkinson's disease care with a particular focus on their acceptability and usability. The review will adopt a three-stage approach, involving a scoping review, product search, and evidence of evaluation across various databases.

In the scoping review, there is also a potential publication bias, as the narrative synthesis may rely on published literature that predominantly reports positive outcomes, potentially overlooking negative or inconclusive results. Additionally, selection bias could arise from the criteria used to assess and include systems, potentially favouring certain types of technology or studies with more rigorous methodologies. Lastly, reporting bias might affect the qualitative synthesis, as the perspectives of clinicians and users reported in app store reviews or system descriptions may not fully capture the range of experiences, particularly those of individuals who did not engage with the tools or had negative experiences. To mitigate these biases, we will include a comprehensive range of studies, apply rigorous inclusion criteria, and seek diverse sources of qualitative data to ensure a balanced and representative analysis. Potential biases in data selection and interpretation may arise from the single-reviewer methodology, which is due to time and resources constraints.

Choosing only the Apple App Store and Google Play Store can be limiting, especially for health-related apps, as it may exclude specialised or region-specific app stores that offer unique or locally relevant health solutions. Additionally, some innovative or niche health apps might only be available on alternative platforms like the Amazon Appstore, Samsung Galaxy Store, or F-Droid, potentially overlooking valuable resources for comprehensive health management.

The scope of the study will include an examination of the presence and extent of clinician-focused evaluations in existing research but will not deeply synthesize factors affecting clinicians' acceptability and usability. This is a gap in the literature, but not within the scope of this review due to resource and logistical limitations and the purpose of scoping review to provide an overview of the literature. Understanding how to best support clinician adoption and use will be an important factor in the implementation of such systems and a good target for further research.

Despite the limitations, the review is expected to contribute to the literature by addressing a gap in research on the acceptability and usability of self-management systems for clinicians. It will provide a comprehensive summary of self-management systems adopting different types of technology used in PD care and differentiate between patient-centred and clinician-centric tools, aiming to offer recommendations that can inform future system designs.

Authors’ Contributions

The review protocol was conceived and supervised by MMI and EM. Clinical feedback was provided by CC. SB drafted the protocol, including the research question, PICOS and search strategy. All authors contributed revisions.

Funding

This review was supported by external funding by Parkinson’s UK Non-Drug Awards Programme (Grant Number: NDA-21). Views expressed in this review are those of the authors and are not funding agencies or their affiliated institutions. The review is supported by the National Institute for Health Research (NIHR) Newcastle Biomedical Research Centre (BRC) based at The Newcastle upon Tyne Hospital NHS Foundation Trust, Newcastle University and the Cumbria, Northumberland and Tyne and Wear (CNTW) NHS Foundation Trust.

Conflicts of Interest

None declared.

Abbreviations

AI: Artificial Intelligence

PD: Parkinson's Disease
HCP: Health Care Practitioner
CP: Care Practitioner
PRISMA-ScR: Preferred Reporting Items for Systematic Reviews and Meta-Analyses Extension for Scoping Reviews

Multimedia Appendix of supplementary files

Appendix 1: PRISMA-ScR (Preferred Reporting Items for Systematic review and Meta-Analysis Extension for Scoping Reviews) 2015 checklist: recommended items to address in a scoping review*

Section and topic	Item No	Checklist item	Page No
ADMINISTRATIVE INFORMATION			
Title:			
Identification	1a	Identify the report as a protocol of a systematic review	1
Update	1b	If the protocol is for an update of a previous systematic review, identify as such	n/a
Registration	2	If registered, provide the name of the registry (such as PROSPERO) and registration number	n/a
Authors:			
Contact	3a	Provide name, institutional affiliation, e-mail address of all protocol authors; provide physical mailing address of corresponding author	1
Contributions	3b	Describe contributions of protocol authors and identify the guarantor of the review	9
Amendments	4	If the protocol represents an amendment of a	n/a

		previously completed or published protocol, identify as such and list changes; otherwise, state plan for documenting important protocol amendments	
Support:			
Sources	5a	Indicate sources of financial or other support for the review	9
Sponsor	5b	Provide name for the review funder and/or sponsor	9
Role of sponsor or funder	5c	Describe roles of funder(s), sponsor(s), and/or institution(s), if any, in developing the protocol	9
INTRODUCTION			
Rationale	6	Describe the rationale for the review in the context of what is already known	3
Objectives	7	Provide an explicit statement of the question(s) the review will address with reference to participants, interventions, comparators, and outcomes (PICO)	4-5
METHODS			
Eligibility criteria	8	Specify the study characteristics (such as PICO, study design, setting, time frame) and report characteristics (such as years considered, language, publication status) to be used as criteria for eligibility for the review	4-5
Information sources	9	Describe all intended information sources (such as electronic databases, contact with study authors, trial registers or other grey literature sources) with planned dates of coverage	5-6
Search strategy	10	Present draft of search strategy to be used for at least one electronic database, including planned limits, such that it could be repeated	Appendix 1
Study records:			
Data management	11a	Describe the mechanism(s) that will be used to manage records and data throughout the review	5
Selection process	11b	State the process that will be used for selecting studies (such as two independent reviewers) through each stage of the review (that is, screening, eligibility, and inclusion in meta-analysis)	5
Data collection process	11c	Describe planned method of extracting data from reports (such as piloting forms, done independently, in duplicate), any processes for obtaining and confirming data from investigators	5-6
Data items	12	List and define all variables for which data will be	5

		sought (such as PICO items, funding sources), any pre-planned data assumptions and simplifications	
Outcomes and prioritisation	13	List and define all outcomes for which data will be sought, including prioritisation of main and additional outcomes, with rationale	5
Risk of bias in individual studies	14	Describe anticipated methods for assessing risk of bias of individual studies, including whether this will be done at the outcome or study level, or both; state how this information will be used in data synthesis	6
Data synthesis	15a	Describe criteria under which study data will be quantitatively synthesised	7-8
	15b	If data are appropriate for quantitative synthesis, describe planned summary measures, methods of handling data and methods of combining data from studies, including any planned exploration of consistency (such as I2, Kendall's τ)	8
	15c	Describe any proposed additional analyses (such as sensitivity or subgroup analyses, meta-regression)	n/a
	15d	If quantitative synthesis is not appropriate, describe the type of summary planned	8
Meta-bias(es)	16	Specify any planned assessment of meta-bias(es) (such as publication bias across studies, selective reporting within studies)	n/a
Confidence in cumulative evidence	17	Describe how the strength of the body of evidence will be assessed (such as GRADE)	n/a

Appendix 2: Search strings of sample search

Database	Search String	Retrieved
PubMed	(((("Parkinson disease"[MeSH Terms]) OR ("parkinsons") OR ("Parkinsonism" OR ("parkinson's") OR ("parkinsonian disorders"[MeSH Terms])) AND ((telemedicine[MeSH Terms]) OR ("internet-based intervention") OR ("digital health") OR ("remote") OR ("home-based") OR ("electronic") OR ("technology") OR ("software") OR ("m-health") OR (""computing methodologies") OR ("system") OR ("self-management system") OR ("portal") OR ("computing methodologies"[MeSH Terms]) OR ("e-health") OR ("wearable electronic devices"[MeSH Terms]) OR ("self-help devices"))) AND (evaluation)	6,041
CINAHL	AB (parkinson disease or parkinson and disease or parkinson disease or parkinson's disease) AND TX (software or system or remote or portal or technology or digital health or telemedicine or telehealth or ehealth or e-health or mhealth or m-health) AND TX (evaluation or analysis or perspective or attitude or user-experience or acceptability or usability or perspective or UX or barriers or perception)	5,172
Scopus	TITLE-ABS-KEY (("Parkinson disease" OR "parkinsonian disorders" OR "parkinsons") AND ("telemedicine" OR "digital health" OR "internet-based intervention" OR "remote" OR "home-based" OR "wearable electronic devices" OR	7,820

	"computing methodologies" OR "electronic" OR "technology" OR "software" OR "m-health" OR "system" OR "portal" OR "e-health" OR "self-help devices") AND ("attitude" OR "user-experience" OR "acceptability" OR "usability" OR "perspective" OR "UX" OR "barriers" OR "perception"))	
ACM digital library	[[Full Text: "parkinson disease"] OR [Full Text: "parkinson's disease"] OR [Full Text: "parkinsonian disorders"]OR [Full Text: "parkinsons"] OR [Full Text: "parkinson"]] AND [[Full Text: "telemedicine"] OR [Full Text: "digital health"] OR [Full Text: "internet-based intervention"] OR [Full Text: "remote"] OR [Full Text: "home-based"] OR [Full Text: "wearable electronic devices"] OR [Full Text: "computing methodologies"]OR [Full Text: "electronic"] OR [Full Text: "technology"] OR [Full Text: "software"] OR [Full Text: "m-health"] OR [Full Text: "system"] OR [Full Text: "portal"] OR [Full Text: "e-health"] OR [Full Text: "self-help devices"] OR [Full Text: "mhealth"]] AND [[Full Text: "evaluation"] OR [Full Text: "attitude"] OR [Full Text: "user-experience"] OR [Full Text: "acceptability"] OR [Full Text: "usability"] OR [Full Text: "perspective"] OR [Full Text: "ux"] OR [Full Text: "barriers"] OR [Full Text: "perception"]]	1,855
IEEE Xplore	("All Metadata":"Parkinson disease" OR "All Metadata":"parkinsonian disorders" OR "All Metadata":"parkinsons") AND ("All Metadata":telemedicine OR "All Metadata":digital OR "All Metadata":remote OR "All Metadata":internet OR "All Metadata":electronic OR "All Metadata":technology OR "All Metadata":software OR "All Metadata":system OR "All Metadata":portal OR "All Metadata":"e-health" OR "All Metadata":"m-health" OR "All Metadata":"self-help devices" OR "All Metadata":"internet-based intervention" OR "All Metadata":"remote") AND ("All Metadata":evaluation OR "All Metadata":attitude OR "All Metadata":user OR "All Metadata":acceptability OR "All Metadata":usability OR "All Metadata":perspective)	222

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Supplementary Files

Multimedia Appendixes

Prisma-ScR checklist.
URL: http://asset.jmir.pub/assets/6a6eb71c67cad4b10a3d45336d4c21a5.docx

Search strings of sample search.
URL: http://asset.jmir.pub/assets/f962bf3ce3f3bee835da30a08404afa1.docx