

# Parkinson's Disease

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**November 2023**

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## 1. Unique characteristics of end-of-life hospitalizations in Parkinson disease.

**Authors:** Aamodt, Whitley W.;Dahodwala, Nabila;Bilker, Warren B.;Farrar, John T. and Willis, Allison W.

**Publication Date:** 2023

**Journal:** Frontiers in Aging Neuroscience 15, pp. 1254969

**Abstract:** Introduction: Persons with Parkinson disease (PD) are hospitalized at higher rates, have longer lengths of stay, and are more likely to die in the hospital than age-matched peers. Although prior studies have compared inpatient outcomes between persons with and without PD, little is known about inpatient outcomes across the PD trajectory, or whether hospitalizations occurring in the last 6 months of life differ from earlier hospitalizations. Methods: This cross-sectional study compared Medicare Part A and B beneficiaries aged 65 and older with a qualifying PD diagnosis who were hospitalized in 2017: decedents who died between 7/1/2017 and 12/31/2017 from all causes and were hospitalized at least once in their last 6 months of life, and non-decedents who were hospitalized between 1/1/2017 and 6/30/2017 and lived 6 or more months after discharge. End-of-life (EoL) hospitalizations were defined as those occurring in the last 6 months of life. Descriptive analyses compared patient-level variables (e.g., demographics, comorbidities, treatment intensity) and encounter-level variables (e.g., length of stay, total charges) between groups. Multivariable logistic regression models also compared rates of intensive care unit (ICU) admission and 30-day readmission between hospitalized decedents and hospitalized non-decedents, adjusting for age, sex, race/ethnicity, rural residence, and Charlson Comorbidity Index Score. Results: Of 26,492 Medicare decedents with PD, 16,187 (61.1%) were hospitalized in their last 6 months of life. Of 347,512 non-decedents with PD, 62,851 (18.1%) were hospitalized in a 6-month period. Hospitalized decedents were slightly older than hospitalized non-decedents (82.3 [SD 7.40] vs. 79.5 [SD 7.54] years) and had significantly more comorbidities. Compared to non-EoL hospitalizations, EoL hospitalizations were slightly longer (5 [IQR 3-9] vs. 4 [IQR 3-7] days) and more expensive based on total charges per admission (\$36,323 [IQR 20,091-69,048] vs. \$32,309 [IQR 18,789-57,756]). In covariate-adjusted regression models using hospitalized non-decedents as the reference group, hospitalized decedents were more likely to experience an ICU admission (AOR 2.36; CI 2.28-2.45) and 30-day readmission (AOR 2.43; CI 2.34-2.54). Discussion: Hospitalizations occurring in the last 6 months of life among persons with PD in the United States are longer, more costly, and more resource intensive than earlier hospitalizations and may stem from medical comorbidities. Once hospitalized, ICU admission and 30-day readmission may aid in prognostication and serve as markers of transition to the EoL period. Copyright © 2023 Aamodt, Dahodwala, Bilker, Farrar and Willis.

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## 2. Dysphagia and aspiration during a Parkinson's hospitalization: a care partner's perspective and recommendations for improving standards of care.

**Authors:** Brooks, Annie

**Publication Date:** 2023

**Journal:** Frontiers in Aging Neuroscience 15, pp. 1258979

**Abstract:** People with Parkinson's disease have a significantly increased incidence and risk of aspiration pneumonia when compared to those without. Aspiration pneumonia associated with dysphagia (swallowing issues), which is the leading cause of death among people with Parkinson's disease, accounting for 25% of Parkinson's deaths. There is relatively limited evidence of the most effective strategies to balance the competing needs of each Parkinson's patient as providers aim to prevent, diagnose, and manage dysphagia. Exacerbated, and in part caused, by the intricacies of dysphagia and Parkinson's disease, there is still limited understanding among hospital providers and the Parkinson's community regarding the most appropriate measures to prevent and manage dysphagia in Parkinson's disease. The Parkinson's Foundation Hospital Care Recommendations identified the prevention and management of dysphagia as a care standard necessary to eliminate

harm and attain higher reliability in care. This article discusses key components of dysphagia management in the hospital, provides a case example to demonstrate the challenges that people with PD and their care partners experience in the hospital related to dysphagia, and offers recommendations on how to better manage dysphagia and involve care partners in PD hospital care. Copyright © 2023 Brooks.

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### 3. Neuropsychiatric Symptoms and Parkinson Disease: Are We Looking Carefully Enough?.

**Authors:** Camicioli, R. M. and Colosimo, C.

**Publication Date:** 2023

**Journal:** Neurology 101(12), pp. 503-504

**Abstract:** Neuropsychiatric symptoms (NPS) include apathy, emotional dysregulation, impulse control disorders, social inappropriateness, and abnormal perception or thought content.<sup>1</sup> Such symptoms are common and affect quality of life and caregiver burden in people living with Parkinson disease (PD).<sup>2</sup> In this issue of Neurology, Lee et al.<sup>3</sup> publish a study in which they examined which profile of NPS is associated with the risk of cognitive decline in a large clinic-based cohort of patients with PD with mild cognitive impairment (PD-MCI). This single-center retrospective study involved 338 consecutive outpatients with PD-MCI seen at Severance Hospital, Seoul, South Korea, from January 2008 to July 2019. PD was diagnosed according to standard clinical diagnostic criteria, but to improve the diagnostic accuracy of the disease, all patients were confirmed as having dopaminergic depletion in the posterior putamen on 18F-N-fluoropropyl-2b-carbomethoxy-3b-(4-iodophenyl) nortropane (FP-CIT) PET. They all underwent complete neuropsychological testing using the Seoul Neuropsychological Screening Battery and completed the Neuropsychiatric Inventory (NPI) questionnaire. Copyright © American Academy of Neurology.

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### 4. Breaking ground: nursing-led approach to alleviating constipation in Parkinson's disease.

**Authors:** Geng, Wen Yao; Ren, Mengdie; Zhao, Feng; Yang, Fuguo and Liu, Heng

**Publication Date:** 10 13 ,2023

**Journal:** BMC Geriatrics 23(1), pp. 657

**Abstract:** BACKGROUND: Constipation is one of the most common non-motor symptoms in PD patients, and the constipation, can appear before motor symptoms. Incorrect treatment of constipation in PD patients can result in colonic volvulus and pseudo intestinal obstruction, as well as a reduction in the therapeutic effect of anti-PD drugs due to absorption issues. There is, however, no comprehensive and scientific nursing intervention plan for PD patients' constipation who are constipated. METHODS: A multi-disciplinary nursing research group of five people was established to construct the first draft of intervention plan through literature review. We chose 15 experts from 7 universities and tertiary hospitals spread over 5 provinces (cities), including 4 neurologists, 9 clinical nursing specialists in neurology, 1 dietician, and 1 rehabilitator. Two rounds of consultations were held from April to July 2022 with 15 experts to screen and revise the indicators at each level, confirming their importance and feasibility at each level. RESULTS: There were three primary indicators (pre-intentional stage, intentional stage, and action stage) in the two rounds of expert correspondence, nine secondary indicators (disease risk perception, adverse consequence expectation, self-efficacy and intention of action; action plan, coping plan and coping self-efficacy; produce healthy behaviors, maintain healthy behaviors, recover behaviors and recover self-efficacy), and 22 tertiary indicators. CONCLUSIONS: After the implementation of two rounds of Delphi method, the final formed constipation intervention program for PD patients provides the basis for clinical nursing practice, which has the characteristics of convenience, comprehensiveness, dependence, scientific and feasibility. Therefore, it has application and promotion value. Copyright © 2023. BioMed Central Ltd., part of Springer Nature.

## 5. Reducing the receipt of contraindicated medications in patients with Parkinson disease.

**Authors:** Goldin, Caroline;Sillau, Stefan;Worledge, Elisa;Bremmer, Jarrett;Cummins, Robbie;Tremolet de Villers, Kathryn and Fullard, Michelle E.

**Publication Date:** 2023

**Journal:** Frontiers in Aging Neuroscience 15, pp. 1271072

**Abstract:** Background: The administration of antidopaminergic medications to patients with Parkinson's disease (PD) can exacerbate symptoms, and in the hospital setting, can lead to complications and increased length of stay. Despite efforts to improve medication administration through provider education and patient-centered interventions, the problem persists, with an estimated 21-43% of hospitalized PD patients receiving dopamine blocking medications. Methods: In this study, a best practice alert (BPA) was developed that was triggered when an antidopaminergic medication was ordered in the Emergency Department or hospital for a patient with a diagnosis of PD in the EMR. The primary outcomes were receipt of a contraindicated medication, length of stay (LOS) and readmission within 30 days. These outcomes were compared between the 12 months prior to the intervention and the 12 months post intervention. Data were also collected on admitting diagnosis, admitting service, neurology involvement and patient demographics. Results: For pre-intervention inpatient encounters, 18.3% involved the use of a contraindicated medication. This was reduced to 9.4% of all inpatient encounters for PD patients in the first 3 months post-intervention and remained lower at 13.3% for the full 12 months post-intervention. The overall rate of contraindicated medication use was low for ED visits at 4.7% pre-intervention and 5.7% post-intervention. Receipt of a contraindicated medication increased the risk of a longer length of stay, both before and after the intervention, but did not significantly affect 30-day readmission rate. Conclusion: An EMR BPA decreased the use of contraindicated medications for PD patients in the hospital setting, especially in the first 3 months. Strategies are still needed to reduce alert fatigue in order to maintain initial improvements. Copyright © 2023 Goldin, Sillau, Worledge, Bremmer, Cummins, Tremolet de Villers and Fullard.

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## 6. Home initiation of apomorphine infusion: lessons from the COVID-19 pandemic and implications for current clinical practice.

**Authors:** Kobylecki, Christopher and Partington-Smith, Lucy

**Publication Date:** Nov ,2023

**Journal:** Journal of Neural Transmission 130(11), pp. 1485-1489

**Abstract:** Starting Parkinson's disease (PD) patients on subcutaneous apomorphine (APO) infusion is generally undertaken on a hospital day-case basis. During the COVID-19 pandemic, day-case facilities were unavailable. To avoid delays in treatment, a new procedure was developed for initiation of APO therapy in the patient's home. A home initiation protocol was developed and followed for each patient in this analysis. The hospital team worked in collaboration with APO nurses provided by the manufacturer of APO therapies to implement initiation and undertake follow-up. In this analysis, 27 PD patients were initiated onto APO infusion and 21 (77.8%) achieved a therapeutic response. Home initiation of APO infusion can be undertaken successfully and has benefits for both patients and healthcare teams. This protocol will now continue as a standard of care at our centre. Copyright © 2023. The Author(s).

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## 7. Perioperative Use of Intravenous Levodopa as an Anti-Parkinsonian Drug: A Propensity Score Analysis.

**Authors:** Kodama, S.;Jo, T.;Yasunaga, H.;Ohbe, H.;Michihata, N.;Matsui, H.;Okada, A.;Shirota, Y.;Fushimi, K.;Toda, T. and Hamada, M.

**Publication Date:** 2023

**Journal:** Movement Disorders Clinical Practice (pagination), pp. ate of Pubaton: 2023

**Abstract:** Background: Perioperative discontinuation of oral anti-parkinsonian medication can negatively impact the prognosis of abdominal surgery in patients with Parkinson's disease. Although intravenous levodopa may be an alternative, its efficacy has not yet been investigated. Objective(s): To determine the efficacy of intravenous levodopa as an alternative to oral anti-Parkinsonian drugs during gastric or colorectal cancer surgery. Method(s): We identified patients with Parkinson's disease who underwent surgery for gastric or colorectal cancer between April 2010 and March 2020, using the Diagnosis Procedure Combination database, a nationwide inpatient database in Japan. Patients were divided into two groups: those who received intravenous levodopa during the perioperative period and those who did not. We compared in-hospital mortalities, major complications, and postoperative length of stay between the groups after adjusting for background characteristics with overlap weights based on propensity scores. Result(s): We identified 648 patients who received intravenous levodopa and 1207 who did not receive levodopa during the perioperative period. In the adjusted cohort, the mean postoperative length of stay was 24.7 and 29.0 days (percent difference, -7.7%; 95% confidence interval, -13.1 to -1.5); in-hospital death was 3.2% and 3.3% (adjusted odds ratio, 0.95; 95% CI: 0.54-1.67); and incidence of major complications were 21.4% and 19.3% (adjusted odds ratio, 0.89; 95% confidence interval, 0.70-1.13) in those with and without intravenous levodopa, respectively. Conclusion(s): Intravenous levodopa was associated with a shorter postoperative length of stay, but not with mortality or morbidity. Intravenous levodopa may improve perioperative care in patients with Parkinson's disease. Copyright © 2023 The Authors. Movement Disorders Clinical Practice published by Wiley Periodicals LLC on behalf of International Parkinson and Movement Disorder Society.

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## 8. Impact of caregiver relationship on self-care in patients with Parkinson's disease: A cross-sectional study using Riegel's theory of self-care of chronic illness.

**Authors:** Lee, J.; Chung, M. L.; Kim, E. and Yoo, J. H.

**Publication Date:** 2023

**Journal:** Journal of Clinical Nursing (pagination), pp. no pagination

**Abstract:** Aims: To explore how the characteristics of patients and caregivers affect self-care in patients with Parkinson's disease (PD). Design(s): A multicentre cross-sectional study. Method(s): We followed the STROBE checklist. Parkinson's disease patients aged 50 years and older and their caregivers were recruited from two tertiary hospitals and the Korean Parkinson's Disease Association website. Patient characteristics, including social support, relationship quality with caregivers, self-care efficacy and self-care, were analysed. Caregiver characteristics were also evaluated, including caregiving duration, social support, relationship quality with patients, contribution to patients' self-care efficacy and contribution to patients' self-care. Result(s): The characteristics of patients and caregivers (103 pairs) were hierarchically regressed into patient self-care domains (maintenance, monitoring and management). Most patients and caregivers gave a self-care efficacy and self-care management rating of moderate. In three regression models, patient self-care efficacy was positively related to three domains of patient self-care. Self-care maintenance decreased as patients' disease duration increased. Self-care monitoring was positively related to the education level of patients and caregiving duration. Self-care management showed an inverse relationship with caregiving duration and a positive relationship with caregiver contribution. Conclusion(s): Self-care efficacy was important in promoting PD patients' self-care maintenance, monitoring and management. The contributions of caregivers were also critical in increasing PD patients' self-care management. Implications for the profession and patient care: To increase patients' self-care efficacy and self-care, educational interventions containing information about the disease, symptom management, and problem-solving should be implemented. Since caregivers are deeply involved in patients' self-care, educational interventions for caregivers should also be provided. Impact: This study closed the literature gap by examining the self-care efficacy and self-care of Korean PD patients. Findings demonstrated the importance of caregiver roles on patients' self-care and health. Patient or public contribution: Two tertiary hospitals and the Korean

### **9. Patient perspectives on digital health and physical activity in Parkinson' disease: a brief research report.**

**Authors:** McDermott, A. D.

**Publication Date:** 2023

**Journal:** European Journal of Physiotherapy (pagination), pp. ate of Pubaton: 2023

**Abstract:** Background: People living with Parkinson's disease (PwP) typically have lower levels of physical activity (PA) which predisposes them to heart disease, reduced bone density and low exercise tolerance. Digital health has been shown to be effective at promoting PA in several clinical cohorts and monitoring PA in PwP. In addition, PwP have reported positive experiences with using digital health modalities such as smartwatches and telehealth. However, the perspectives of PwP on how best to use digital health to promote PA has yet to be investigated. The aim of this study was to investigate current levels of digital skills in PwP and the perspectives and opinions of PwP on the use of digital health for PA interventions. Method(s): Eighty-nine PwP living in Ireland completed a cross-sectional questionnaire looking at current levels of PA and self-reported levels of digital skills. Result(s): The majority of participants believed that PA was beneficial for PwP and had a moderate to high level of digital skills. Important factors to consider when constructing a digital health PA intervention included ease of access, low cost, variety of exercises and physical activity options and a feedback function. Conclusion(s): PwP have a moderate to high level of self-reported digital skills. This study provides useful information on factors that should be considered when constructing a digital PA intervention for PwP. Copyright © 2023 Informa UK Limited, trading as Taylor & Francis Group.

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### **10. Electronic health record tools as a potential resource for improving care among hospitalized people with Parkinson's disease.**

**Authors:** Piccinin, Camila C.;Yu, Jeryl Ritzi T.;Brooks, Anne;Clark, Patricia;Shaffer, Shannon;Sokola, Brent S.;Lewin, Kim;Whitman, John-Paul;Sperling, Scott A.;Fernandez, Hubert H. and Walter, Benjamin L.

**Publication Date:** Nov ,2023

**Journal:** Parkinsonism & Related Disorders 116, pp. 105896

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### **11. Compliance with National and International Guidelines in the Treatment of Nonmotor Symptoms in Late-Stage Parkinson's Disease.**

**Authors:** Rosqvist, Kristina and Odin, Per

**Publication Date:** 2023

**Journal:** Parkinsons Disease 2023, pp. 6667339

**Abstract:** Background: National as well as international Parkinson's disease (PD) treatment guidelines are available to guide clinicians. Previous research has shown that nonmotor symptoms (NMS) are pronounced in late-stage PD and has suggested that current treatment is insufficient and could be improved. Objectives: The aim of this study was to investigate to which degree the national and international treatment guidelines are followed in the treatment of NMS in late-stage PD. Methods: This Swedish cohort was part of the Care of Late-Stage Parkinsonism (CLaSP) study. Late-stage PD was defined as Hoehn and Yahr stages IV-V in "on" and/or = 6 on an item of the NMSS; for dementia, a

cutoff of  $\geq 10$  on the GDS. Results: All 107 participants exhibited NMS to various degrees and severities; the median NMSS score was 91. Among symptomatic individuals, for depressive symptoms, 37/63 (59%) were treated with antidepressants; for hallucinations and delusions, 9/18 (50%) and 5/13 (38%) were treated with antipsychotics; and for dementia, 9/27 (33%) were treated with rivastigmine and 1 (4%) was treated with donepezil. For orthostatic hypotension, 11/19 (58%) with lightheadedness and 7/8 (88%) with fainting were treated with antihypotensives; for sialorrhea, 2/42 (5%) were treated with botulinum toxin; and for constipation, 19/35 (54%) were treated with laxatives. For insomnia, 4/16 (25%) were treated with hypnotics, and for daytime sleepiness, 1/29 (3%) was treated with psychostimulants. Conclusions: The present analyses suggest a need for clinicians to further screen for and treat NMS. Optimizing treatment of NMS according to the national and international treatment guidelines may improve symptomatology and enhance quality of life in late-stage PD. Copyright © 2023 Kristina Rosqvist and Per Odin.

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## **12. Anti-Seizure Medications on Trial Again: Accused of Parkinson's Disease!.**

**Authors:** Sarkis, R. A.

**Publication Date:** 2023

**Journal:** *Epilepsy Currents* 23(5), pp. 277-279

**Abstract:** Association Between Antiepileptic Drugs and Incident Parkinson Disease Belete D, Jacobs BM, Simonet C, Bestwick JP, Waters S, Marshall CR, Dobson R, Noyce AJ. *JAMA Neurol.* 2023;80(2):183-187. doi:10.1001/jamaneurol.2022.4699 Importance: Recent studies have highlighted an association between epilepsy and Parkinson disease (PD). The role of antiepileptic drugs (AEDs) has not been explored. Objective(s): To investigate the association between AEDs and incident PD. Design, setting, and participants: This nested case-control study started collecting data from the UK Biobank (UKB) in 2006, and data were extracted on June 30, 2021. Individuals with linked primary care prescription data were included. Cases were defined as individuals with a Hospital Episode Statistics (HES)-coded diagnosis of PD. Controls were matched 6:1 for age, sex, race and ethnicity, and socioeconomic status. Prescription records were searched for AEDs prescribed prior to diagnosis of PD. The UKB is a longitudinal cohort study with more than 500 000 participants; 45% of individuals in the UKB have linked primary care prescription data. Participants living in the UK aged between 40 and 69 years were recruited to the UKB between 2006 and 2010. All participants with UKB-linked primary care prescription data (n = 222 106) were eligible for enrollment in the study. Individuals with only a self-reported PD diagnosis or missing data for the matching variables were excluded. In total, 1477 individuals were excluded; 49 were excluded due to having only self-reported PD, and 1428 were excluded due to missing data. Exposures: Exposure to AEDs (carbamazepine, lamotrigine, levetiracetam, and sodium valproate) was defined using routinely collected prescription data derived from primary care. Main Outcomes and Measures: Odds ratios and 95% CIs were calculated using adjusted logistic regression models for individuals prescribed AEDs before the first date of HES-coded diagnosis of PD. Result(s): In this case-control study, there were 1433 individuals with an HES-coded PD diagnosis (cases) and 8598 controls in the analysis. Of the 1433 individuals, 873 (60.9%) were male, 1397 (97.5%) had their race and ethnicity recorded as White, and their median age was 71 years (IQR, 65-75 years). An association was found between AED prescriptions and incident PD (odds ratio, 1.80; 95% CI, 1.35-2.40). There was a trend for a greater number of prescription issues and multiple AEDs being associated with a greater risk of PD. Conclusions and relevance: This study, the first to systematically look at PD risk in individuals prescribed the most common AEDs, to our knowledge, found evidence of an association between AEDs and incident PD. With the recent literature demonstrating an association between epilepsy and PD, this study provides further insights. Copyright © The Author(s) 2023.

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## **13. More than medications: a patient-centered assessment of Parkinson's disease care needs during hospitalization.**

**Authors:** Shurer, J.;Golden, S. L. S.;Mihas, P. and Browner, N.

**Publication Date:** 2023

**Journal:** Frontiers in Aging Neuroscience 15(pagination), pp. no pagination

**Abstract:** Background: Parkinson's disease (PD) increases the risk of hospitalization and complications while in the hospital. Patient-centered care emphasizes active participation of patients in decision-making and has been found to improve satisfaction with care. Engaging in discussion and capturing hospitalization experience of a person with PD (PwP) and their family care partner (CP) is a critical step toward the development of quality improvement initiatives tailored to the unique hospitalization needs of PD population. Objective(s): This qualitative study aimed to identify the challenges and opportunities for PD patient-centered care in hospital setting. Method(s): Focus groups were held with PwPs and CPs to capture first-hand perspectives and generate consensus themes on PD care during hospitalization. A semi-structured guide for focus group discussions included questions about inpatient experiences and interactions with the health system and the clinical team. The data were analyzed using inductive thematic analysis. Result(s): A total of 12 PwPs and 13 CPs participated in seven focus groups. Participants were 52% female and 28% non-white; 84% discussed unplanned hospitalizations. This paper focuses on two specific categories that emerged from the data analysis. The first category explored the impact of PD diagnosis on the hospital experience, specifically during planned and unplanned hospitalizations. The second category delves into the unique needs of PwPs and CPs during hospitalization, which included the importance of proper PD medication management, the need for improved hospital ambulation protocols, and the creation of disability informed hospital environment specific for PD. Conclusion(s): PD diagnosis impacts the care experience, regardless of the reason for hospitalization. While provision of PD medications was a challenge during hospitalization, participants also desired flexibility in ambulation protocols and an environment that accommodated their disability. These findings highlight the importance of integrating the perspectives of PwPs and CPs when targeting patient-centered interventions to improve hospital experiences and outcomes. Copyright © 2023 Shurer, Golden, Mihas and Browner.

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#### 14. More than medications: a patient-centered assessment of Parkinson's disease care needs during hospitalization.

**Authors:** Shurer, Jessica;Golden, Shannon L. S.;Mihas, Paul and Browner, Nina

**Publication Date:** 2023

**Journal:** Frontiers in Aging Neuroscience 15, pp. 1255428

**Abstract:** Background: Parkinson's disease (PD) increases the risk of hospitalization and complications while in the hospital. Patient-centered care emphasizes active participation of patients in decision-making and has been found to improve satisfaction with care. Engaging in discussion and capturing hospitalization experience of a person with PD (PwP) and their family care partner (CP) is a critical step toward the development of quality improvement initiatives tailored to the unique hospitalization needs of PD population. Objectives: This qualitative study aimed to identify the challenges and opportunities for PD patient-centered care in hospital setting. Methods: Focus groups were held with PwPs and CPs to capture first-hand perspectives and generate consensus themes on PD care during hospitalization. A semi-structured guide for focus group discussions included questions about inpatient experiences and interactions with the health system and the clinical team. The data were analyzed using inductive thematic analysis. Results: A total of 12 PwPs and 13 CPs participated in seven focus groups. Participants were 52% female and 28% non-white; 84% discussed unplanned hospitalizations. This paper focuses on two specific categories that emerged from the data analysis. The first category explored the impact of PD diagnosis on the hospital experience, specifically during planned and unplanned hospitalizations. The second category delves into the unique needs of PwPs and CPs during hospitalization, which included the importance of proper PD medication management, the need for improved hospital ambulation protocols, and the creation of disability informed hospital environment specific for PD. Conclusion: PD diagnosis impacts the care experience, regardless of the reason for hospitalization. While provision of PD medications was a challenge during hospitalization, participants also desired flexibility in ambulation protocols and an environment that accommodated



their disability. These findings highlight the importance of integrating the perspectives of PwPs and CPs when targeting patient-centered interventions to improve hospital experiences and outcomes.  
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## 15. Loneliness and Risk of Parkinson Disease.

**Authors:** Terracciano, Antonio;Luchetti, Martina;Karakose, Selin;Stephan, Yannick and Sutin, Angelina R.

**Publication Date:** Nov 01 ,2023

**Journal:** JAMA Neurology 80(11), pp. 1138-1144

**Abstract:** Importance: Loneliness is associated with morbidity and mortality, including higher risk of neurodegenerative diseases. To our knowledge, no study has examined whether the association between loneliness and detrimental outcomes extends to Parkinson disease (PD). Objective: To assess whether loneliness is associated with risk of incident PD and whether the association is independent of other risk factors or modified by age, sex, and genetic vulnerability. Design, Setting, and Participants: This prospective cohort study included a population-based sample of UK Biobank participants aged 38 to 73 years with loneliness data and without a diagnosis of PD at baseline who were first assessed from March 13, 2006, to October 1, 2010, and followed up to October 9, 2021. Exposure: Feeling lonely and covariates that are known risk factors for or prodromal features of PD. Main Outcome and Measure: Incident PD was ascertained through UK National Health Service health records. Results: Of 491 603 participants (mean [SD] age, 56.54 [8.09] years; 54.4% female), 2822 developed PD during the 15-year follow-up. Individuals who reported being lonely had a higher risk of PD (hazard ratio [HR], 1.37; 95% CI, 1.25-1.51), an association that remained after accounting for demographic factors, socioeconomic status, social isolation, PD polygenic risk score, smoking, physical activity, body mass index, diabetes, hypertension, stroke, myocardial infarction, depression, and ever seeing a psychiatrist (fully adjusted model: HR 1.25; 95% CI, 1.12-1.39). The association between loneliness and incident PD was not moderated by sex (HR for interaction, 0.98; 95% CI, 0.81-1.18), age (HR for interaction, 0.99; 95% CI, 0.98-1.01), or polygenic risk score (HR for interaction, 0.93; 95% CI, 0.85-1.02). Contrary to expectations for a prodromal syndrome, when stratified by time, loneliness was not associated with risk for incident PD during the first 5 years (HR, 1.15; 95% CI, 0.91-1.45) but was associated with PD risk during the subsequent 10 years (HR, 1.32; 95% CI, 1.19-1.46). Conclusions and Relevance: This large cohort study found that loneliness was associated with risk of incident PD across demographic groups and independent of depression and other prominent risk factors and genetic risk. The findings add to the evidence that loneliness is a substantial psychosocial determinant of health.

### Sources Used:

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