Challenges Faced by Rural Primary Care Providers Caring for Parkinson’s Disease Patients in Neighbor Islands of Hawai‘i

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Summer Research Internship 2022
Background

- Parkinson's Disease (PD) is a chronic neurodegenerative disease
- Severity and type of symptoms (motor and non-motor), and disease progression rate varies among PD patients
- PD care is complex and multifaceted
- Access to ancillary services and specialist care are limited in rural areas
  - Ex. Bruno et. al. (2022)
    - 2013-2018 → 3 neurologist prescribed PD meds in rural HI
    - In urban HI, ~75% of PD meds prescribed by neurologists
    - In rural HI, ~25% of PD meds prescribed by neurologists
Objective

To understand the challenges and barriers faced by rural providers in Hawai‘i for Parkinson’s Disease (PD) care.
National Medicare Provider Utilization & Payment Data: Part D Prescriber (Public files)

- Prescribed PD meds (carbidopa/levodopa, pramipexole, ropinirole) in HI
- Between 1/2017 and 12/2019
- 252 providers

Sent mail (info sheet, self-administered 20 item survey, & stamped return envelope) to eligible providers

- 247 providers
- Response rate = 12.6% (31 surveys)
- Within 1 month

31 responses included in final sample

- Submission of survey served as consent
- Anonymity kept

5 excluded

- Having been convicted or elicited illegal acts
- Provider no longer practiced in HI
- Unknown mailing address
Survey Design

- Demographics (e.g., age, gender, specialty, city of practice)
  - To assess satisfaction & comfort level with their ability to diagnose, assess, and treat PD
  - To assess utilization & access to specialists, ancillary services, and community resources
  - To access provider’s perspectives on barriers to quality PD care
Statistical Analysis

- 2 Comparison groups: O‘ahu providers & neighbor island providers
  - Neighbor island = Islands of Hawai‘i, Kaua‘i, & Maui
- Survey responses stored in Excel
- Descriptive statistics (e.g., frequencies and percentages)
- Fisher Exact Test via R Studio
- Unpaired T-tests via Excel
RESULTS & DISCUSSION
Demographics: Island of Residence

- O‘ahu: 61%
- Hawai‘i: 26%
- Maui: 6%
- Kaua‘i: 7%
- Moloka‘i: 0%
- Lana‘i: 0%

- Oahu: 61%
- Neighbor Islands: 39%
Overall Specialty Distribution

- Internal Medicine: 48%
- General Neurology: 20%
- Family Medicine: 23%
- Nurse Practitioner: 3%
- Physician Assistant: 3%
- Physical Medicine & Rehabilitation: 3%
Are the following ancillary services accessible to your patients?

### Oahu (Out of 19)
- Social Work: 100%
- Geriatric Services: 89% (11% No)
- Psychologist/Psychiatrist/Mental Health Professional: 100%
- Occupational Therapist: 100%
- Speech Therapist: 100%
- Physical Therapist: 100%

### Neighbor Islands (Out of 12)
- Social Work: 55% (45% No)
- Geriatric Services: 33% (67% No)
- Psychologist/Psychiatrist/Mental Health Professional: 50% (50% No)
- Occupational Therapist: 83% (17% No)
- Speech Therapist: 83% (17% No)
- Physical Therapist: 92% (8% No)
My patients usually receive the services I recommended.

- Strongly Agree
- Agree
- Neither Agree or Disagree
- Disagree
- Strongly Disagree

Number of providers:
- Neighbor Islands
- Oahu
Rate the barriers to utilization & access of services:

For O‘ahu:
- Lack of transportation: 3
- The services are too expensive: 2
- Patients are not interested in: 4
- The services are not available in: 3

For Neighbor Islands:
- Lack of transportation: 5
- The services are too expensive: 4
- Patients are not interested in: 6
- The services are not available in: 6

Response rate:
- Oahu: 21%
- Neighbor Islands: 50%
Insignificant Associations

- Island of residence: Oahu vs Neighbor Islands
- Type of resources providers seek for PD education (p=0.2071)
- Type of criteria used for PD diagnosis (p = 0.8784)
- Comfort level of PD medication, except Amantadine

<table>
<thead>
<tr>
<th>PD Medication</th>
<th>P-value</th>
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<tbody>
<tr>
<td>Carbidopa-Levodopa</td>
<td>0.30</td>
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<tr>
<td>Amantadine</td>
<td>0.05</td>
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<td>MAO-inhibitors</td>
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<td>Dopamine Agonists</td>
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<tr>
<td>Trihexyphenidyl</td>
<td>0.32</td>
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<tr>
<td>COMT-Inhibitors</td>
<td>0.89</td>
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Limitations

• Ascertainment bias
  • Low response rate (12.6%)
  • Results are not generalizable to overall population of Hawai‘i providers
  • Results may not portray the true reality of accessibility
Conclusion

• No significant differences among O’ahu and neighbor island providers on their comfort level in providing certain aspects of PD care

• In contrast to O’ahu, neighbor island providers reported less accessibility to ancillary services
  • Psychologists/psychiatrists/mental health professionals
  • Geriatrics
  • Social work
Acknowledgements

• Mentor: Dr. Michiko Bruno, MD
• Emma Krening, BS
• Brendan Seto
• Queen’s Summer Research Internship
• Lori Tsue
• Kimberly Spencer
Reference

MAHALO!

Question?
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