Telemedicine /Video-Based Data Collection

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I Digress

Telephone visit Satisfaction Questionnaire

Televisit Satisfaction Questionnaire Items Shared By Both Participants and Clinical Research Coordinators

- Visit Conducted by Cellphone
- Satisfaction with Voice Quality
- Personal Comfort with Telehealth
- Satisfaction with Accuracy of Data

Participant
Clinical Research Coordinator
Telephone visit Satisfaction Questionnaire

Televisit Satisfaction Questionnaire
Items Specific to Participants

Is Someone There Who Can Assist with Tele-Visit?
- Yes
- No

Satisfaction with Length of Time to Complete Eval
- Very
- Fairly
- Not At All

Satisfaction with Respect for Your Privacy
- Very
- Fairly
- Not At All
Telemedicine/Video

• Tele-video more closely mimics the clinical experience than phone visit
• Has demonstrated effectiveness in conducting sensitive physical exams including neurological and psychiatric exams.
• Established utility in dementia management
• Potentially cheaper and more convenient
• Most patients (and providers) are relatively unfamiliar with telemedicine
Tele-Video in Research
Issues for implementation

• Acceptability and Satisfaction
• Reliability: Achieving reliable data and diagnosis
• Comparability: Is data interchangeable with F2F
• Change: Detection of progression
• Setting: home vs. center/assist
• Burden: Both participant and staff
• Sampling Bias: Who is excluded with this medium
Interest in Telehealth Among Adults Age 50-80

• Only 4% had a telehealth visit
• Perception: Telehealth vs. In-person
  – Convenience: same or better 65% better (T)
  – Clinically:
    • Feeling cared for (56%) IP
    • Communicating (55%) IP
    • Time with HCP (53%) IP
    • Quality of care (58%) IP

When Telehealth holds advantage

- 64% unexpected illness while traveling
- 58% return visit
- 55% one-time follow-up after a procedure or surgery
- 34% new health problem
- 28% mental health concern

Latino & African American Concerns

• Privacy and Confidentiality

1 Survey: N=2,256; resembles US population; 50-80 yo; May 2019
2 George et al 2012
Neurological Exam Comparability

• Time:
  – remote exam 12.6 min (8-21 min) vs Inperson 8.9 min (5-18 min)
• Kappa: ranged from 0.32 (muscle tone) - 0.82 (language) fair to excellent agreement
• Kappa in stroke evals: (weighted)H k 0.85-0.99.

Handschu et al 2003
Tele-neuropsychology

- High comparability for discriminating diagnostic groups for TM vs. IP
- Limitations
  - Most studies assess TM in clinic, with standard equipment
  - Minimal technical difficulty
  - Reliability assessed within brief intervals (2-3 hrs)
  - Little data on change over time
  - Few studies conducted in-home or with different platforms***

Wadsworth 2018
Who uses; Who excluded

• Center assisted:
  – Provides human and technical assistance
  – Helpful in rural or remote areas

• Home use:
  – Extends reach
  – Requires resources and equipment, excluding URG the very old, or those living alone

Roughly four-in-ten seniors are smartphone owners

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<th>Age</th>
<th>Smartphone</th>
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<td>65–69</td>
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<td>70–74</td>
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<td>75–79</td>
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<td>80+</td>
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<td>Some college</td>
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<td>College+</td>
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<table>
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<th>Household income</th>
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<td>&lt;$30K</td>
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<td>$75K+</td>
<td>81</td>
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What do (Cognitively Intact) Older Adults do online & on phone

Among the 66% online with computers*:

- >10% track health. (Overall 6% track health)

Among the 70% with Smart phone

- 24% track health (Overall 17%)

Anderson GO. Technology Use and Attitudes Among Mid-Life And Older Americans; AARP December 2017.
Summary

• Tele(Video)medicine
  – May extend outreach
  – Increased convenience; if time is managed well
  – May reduce burden; some comfort of being in home
  – Highly reliable diagnostically, especially for clinical exam
  – Increase efficiency; fewer missed visit, or delays with travel, more cost effective

• Challenges
  – Limited reach for URG
  – Unknown reliability for in-home assessment
  – Speech recognition over internet may hinder cognitive assessment (IH vs IC)
  – Site distractions may not be easy to monitor
  – Dependent on technology availability and expertise
  – May reduce biomarker characterization

• Recommendations: Strong for clinical evaluation; limited for cognitive until stable platforms can be assured