**Presentation Order**

- Late-life depression: Symptoms, DSM-5 criteria for major depressive disorder
- Etiology, stigma and misinformation, and effects of untreated depression
- Evidence-based psychotherapy and access barriers
- Research Projects 1, 2, and 3
- Challenges among low-income homebound older adults
- Telehealth / telemental health policies
- Future of telemental health

**Who Experiences Depressive Symptoms?**

- Almost everyone—sometime in life
- Everyone knows someone who suffers/suffered from depression.
- Even if you have never been depressed, you can help someone if you have a better understanding of depression.

**Acknowledgment of Funding Sources for Research Projects 1-3**

- National Institute of Mental Health (R34 MH083872)
- National Institute on Minority Health and Health Disparities (1R01MD009675)
- AARP Foundation (national)
- St. David’s Foundation
- Mitte Foundation

**Signs of Late-life Depression**

- Loss of interest
- Depressed mood
- Worthlessness: sense of guilt
- Avoidance of people/low social engagement
- Recurrent death ideation and/or suicidal thoughts
- Concentration or memory problems
- Irritability
- Insomnia or hypersomnia
- Neglect of physical and mental “SELF-CARE”
- Psychomotor agitation or retardation
- Poor appetite or overeating

**Etiology of Depression**

- Brain chemicals
- Health problems (physical, mental, and cognitive)
- Genetics
- Money worries
- Loss and grief
- Relationship issues / lack of support
- Lack of activities / engagement, isolation, loneliness
- Maladaptive coping strategies
Why Some People Deny or Hide Their Depression?

**Signs of a weakness?**

**Crazy?**

Afraid of being fired?

Depression will affect your job performance if you do not get treatment - all the more reason to recognize depression and seek treatment.

Shame and Stigma

Misinformation about depression

Not seeking treatment

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Late-Life Depression and Cardiovascular Disease Burden: Examination of Reciprocal Relationship

Namhee G. Choi, Ph.D., Insook Kim, Ph.D., C. Nathan Marti, Ph.D., G. John Chen, M.D., Ph.D.

**Objectives:** Empirical studies of the relationship between depression and cardiovascular disease (CVD) tend to be limited to examination of survey relationships. This study assessed both cross-sectional and longitudinal reciprocal relationships between late-life depressive symptoms and CVD. Methods: The National Health and Aging Trends Study waves 1 (1982) and 2 (2012, one year later) provided the data. The study sample (N = 5,619) included Medicare beneficiaries aged 65 years or older. We fit structural equation models to examine: 1) cross-sectional associations between depression and CVD at each wave, and 2) longitudinal reciprocal relationship between T1 depression and CVD and between T1 CVD and T2 depression. **Results:** At T1, 26% reported a CVD diagnosis and a 23% 2-year history of depression. Severe depression was associated with an 8.3% higher risk of CVD, with depression being a significant predictor of CVD (HR = 1.05; 95% CI [1.01, 1.09]). Longitudinal analyses indicated a reciprocal relationship between depression and CVD (HR = 1.15; 95% CI [1.03, 1.30]).

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Physical Health Problems as a Late-Life Suicide Precipitant: Examination of Coroner/Medical Examiner and Law Enforcement Reports

Namhee G. Choi, PhD,1,4 Diana M. DiNitto, PhD, C. Nathan Marti, PhD,1 and Youtes Connwell, MD,1

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**Decision Editor:** Sally Peacock, PhD

**Abstract**

Background and Objective: To gain a better understanding of the factors that influence suicidal behavior in older adults, we examined late-life suicide cases involving physical health problems as a suicide precipitant. Older adults are at increased risk for suicide due to changes in life circumstances, such as health and social conditions. This study sought to identify the physical health problems that influence suicidal behavior in older adults.

**Methods:** A database of coroner/medical examiner reports and police reports was collected from a university medical center in Texas. The study sample (N = 183) was comprised of cases involving late-life suicide where physical health problems were identified as a precipitant. Statistical analyses included descriptive statistics and multiple logistic regression. Findings: Physical health problems were identified as a suicide precipitant in 44% of cases. The most common physical health problems were cardiovascular disease (47%), cancer (36%), and arthritis (21%). Other physical health problems included diabetes, kidney disease, and chronic pain. Conclusions: This study highlights the importance of recognizing physical health problems as a suicide precipitant in older adults. Suicide prevention interventions should focus on addressing physical health problems, such as cardiovascular disease and cancer, in order to reduce the risk of suicide among older adults.

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Outcomes and Predictors of Late-Life Depression Trajectories in Older Primary Care Patients

Xiaojia Cui, M.D., M.P.H., M.S., Jeffrey M. Lyness, M.D., Woon Tung, Ph.D., Xia Tu, Ph.D., Youtes Connwell, M.D.

**Objectives:** The naturalistic outcomes of depression in older primary care patients have been poorly characterized. The authors sought to identify depressive trajectories over 2 years and to examine specific outcomes predictors. **Setting:** University-based and independent practice primary care practices in greater Boston. **Participants:** 477 patients aged 55 years or older who had completed 2 waves of the study (75% response rate). **Measures:** Depression trajectories were defined by applying longitudinal cluster analysis to: baseline depression status, longitudinal depression status (at 2 waves), and late-life depression trajectories were defined by applying longitudinal cluster analysis to: baseline depression status, longitudinal depression status (at 2 waves), and late-life depression trajectories. Participants who had both baseline and late-life depression were included in the analysis. **Results:** Patients with late-life depression were more likely to have a higher baseline depression score, to be prescribed antidepressants, and to have a greater risk of transitioning to late-life depression. **Conclusions:** This study highlights the importance of identifying late-life depression in older primary care patients to prevent adverse outcomes.
### With Treatment

- Improved health (from improved self-care and more active daily living)
- Improved cognitive health
- More energy
- Better at relationships
- Improved quality of life

### Treatment: Pharmacotherapy

- Antidepressant medications are needed for severe depression.
- Medications alone have limited effect on late-life depression: It does NOT impart coping skills.
- May need to take them for life
- Some people experience side effects (e.g., dry mouth, headache, too much sleep...) especially with polypharmacy

### Treatment: Evidence-Based Psychotherapy

No digging up past issues (not effective)
Focus on “here and now”
Rational (vs. emotional) problem-solving / stress coping skills training
- Recognize and avoid depressive behaviors
- Behavior activation (BA): Participation in meaningful activities
- More structure in daily life by planning and engaging in activities that are meaningful in your chosen life areas
- Engage in at least one pleasant activity everyday!
- Practice, practice, and practice your coping skills!

### Depression in Homebound Older Adults

- Higher rates of major depressive disorder (MDD): 8.5% - 13.5% among 65+ age group (Bruce et al., 2002; Ell et al., 2005)
- Higher rates of clinically significant depressive symptoms among 65+ group: 10% - 25% (Ell et al., 2005; Li & Conwell, 2007; Sirey et al., 2008)
- Significantly higher rates of MDD (16%) and depressive symptoms (33%) among homebound adults age 50-60 than among 61+ (Chae et al., 2010)

### Low-Income Homebound Seniors: Barriers to Accessing Psychotherapy

- Lack of transportation to clinic-based therapy
- Lack of affordable, evidence-based, in-home psychotherapy programs
- Lack of insurance/co-pay
- Other competing life demands/stressors
- Stigma
- Lack of depression-related knowledge – denial of depression
- Shortage of geriatric mental health work force for in-person, in-home sessions

### Research Project 1 (completed):

**Telehealth Problem-Solving Therapy for Low-Income Homebound Older Adults**

**National Institute of Mental Health (R34 MH083872; 2009-2013)**

St. David’s Foundation & Mitte Foundation

Principal Investigator
Namkee G. Choi, PhD
With
Meals on Wheels Central Texas

First comparative efficacy trial of tele-PST versus in-person PST
Treatment: Problem-Solving Therapy (PST)

**PST**: 7-step problem-solving coping skills training (more effective for late-life depression than cognitive behavioral therapy or CBT)

- Over 6-8 weeks, six sessions
- via Skype (Tele-PST), or
- in-home, in-person (In-person PST)

Compared to 6 telephone support (care) calls

**Research Design**: 3-arm randomized clinical trial (RCT)

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**Telehealth problem-solving therapy: Effect on Depression**

![Figure 1. Changes in Predicted Mean HAMD Score](image)

**Effect sizes (dGMA-raw): Compared to telephone care calls**

- HAMD Score Changes:
  - At 12 weeks: 0.81 for tele-PST
    0.74 for in-persons PST
  - At 36 weeks: 0.88 for tele-PST
    0.20 for in-persons PST

- WHODAS-II Score Changes:
  - At 12 weeks: 0.58 for tele-PST
    0.53 for in-persons PST
  - At 36 weeks: 0.47 for tele-PST
    0.25 for in-persons PST

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**Telehealth problem-solving therapy: Effect on Disability**

![Figure 2. Changes in Predicted Mean WHODAS Score](image)

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**Effects on Death/Suicidal Ideation**

![Figure 3. Ideation Ratings by Treatment Group](image)

Effect sizes (compared to support call) at 36 weeks:
0.17 for in-person PST and 0.31 for tele-PST

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**Hopelessness Scores and Mediation Effects**

![Figure 4. Hopelessness Scores by Treatment Group](image)

All three mediation requirements were met for tele-PST, but not for in-person PST.
Reciprocal Effects of Depression & Disability (latent growth curve model-LGC-for mediation)

Impact on ED visit
- During 6 months prior to treatment participation: 22.3% reported 1 visit, 12.4% reported 2 visits, and 21.4% reported 3–9 visits.
- During 6 months post-treatment, 16.5% reported 1 visit, 5.8% reported 2 visits, and 7.5% reported 3–8 visits.
- ED visit frequencies at both times were significantly positively associated with depressive symptom scores.

Tele-PST Participants’ Feedback
- “I preferred in-person therapy and had some discomfort with tele-PST on the first day, but think it was effective and recognize that this works.”
- “I enjoyed it, I looked forward to it. I loved the computer part. ... I was skeptical at first, but found it worked great.”
- “It was great. Didn’t have to go anywhere, and could do it at home in my nightgown. A lot of people that don’t know about this that need help could really use this help.”
- “It is much better than going to a clinic where everyone can see you.”
- “I didn’t even think about it being any different [from in-person sessions].
- “I got as much out of it because it was like she [therapist] was here in person. Much better than telephone.”

BUT: Is Tele-PST Sustainable / Scalable???

Population Aging and Unmet Mental Health Needs
- Shortage of licensed geriatric MH clinicians (current and projected)
- Service fragmentation
- Success of lay MH providers in other countries

Calls to
- test effectiveness of lay MH workers for older adults and other underserved groups – Imperative to develop alternative geriatric MH workforce: Articles in Lancet, JAMA Psychiatry, New England J of Medicine…
- integrate evidence-based, short-term MH treatment into aging-service agencies and use technology in service delivery to facilitate access to treatment: Administration on Aging Issue Briefs, with funding from the Older Americans Act:
Research Project 2 (ongoing):

**Telehealth Treatments for Depression with Low-Income Homebound Seniors**

National Institute on Minority Health and Health Disparities (1R01MD009675; 2015-2019)
St. David’s Foundation

Principal Investigator
Namkee G. Choi, PhD

With
Meals on Wheels Central Texas (MOWCTX)

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**Specific Aims**

To improve access to depression treatment for low-income homebound persons aged 50+ through
- Collocated MH providers at MOWCTX for care coordination
- Tele-delivery for cost savings
- Evaluation of acceptability, clinical & cost effectiveness of Tele-SCM and Tele-PST compared to support calls (waitlist control condition)

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**Short-term Evidence-based Behavior Activation (BA) and Coping Skills Training**

- Tele-SCM by trained lay providers: 5-step BA: Manual (Choi et al., 2004) Adapted and validated for homebound older adults from the original BA manual (Lopez, et al. 2011)
- In-home baseline assessment, 5 tele-treatment sessions, 2 monthly booster calls, & 3 follow-up (F/U) assessments over 6 months
- Waitlist control condition: Telephone support calls (to account for interaction effect); after 36-w F/U, offered Tele-SCM or Tele-PST

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**Equipment**

Secure Video platform for tele-sessions (HIPAA compliant)

Laptops, LTE 4G wireless cards, and headphones loaned to clients

More practical than telephone sessions

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**Meals on Wheels Central Texas Telehealth Treatment Program Info.**

- [https://www.mealsonwheelscentraltexas.org/programs/telehealth-treatment-for-depression](https://www.mealsonwheelscentraltexas.org/programs/telehealth-treatment-for-depression)

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**Recruitment Flier**

- [Image of recruitment flier]
Motivational Talking Points

- Accept treatment (give it a try; nothing to lose)
- “I can do it by myself.” — Working with a professional is always a better option
- It is just one hour a week for five weeks: You can do it and deserve a healthier, more peaceful, and happier life.
- Understand how behavior activation can change brain (focus on “Here and Now”)
The Relationship Between Problem Solving skills and Depressive Symptoms

- effective problem solving → reduced symptoms
- ineffective problem solving → increased symptoms

Broad Goals of PST

- increase understanding of link between current problems and depressive symptoms
teach a systematic problem-solving strategy
- increase person's ability to clearly define their problems and set concrete and realistic goals
motivate clients to take action

Problem Solving Worksheet

<table>
<thead>
<tr>
<th>Problem Description</th>
<th>Strategy</th>
<th>Action Plan</th>
<th>Impact</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>Identify the problem to solve.</td>
<td>Choose a strategy.</td>
<td>Execute the plan.</td>
<td>Evaluate the results.</td>
<td>Achieve the goal.</td>
</tr>
</tbody>
</table>

Tele-Session via SecureVideo

Tele-Sessions via SecureVideo
Progress to date

Enrollment: 200
(Enrollment goal: 300 by 6/30/2019)

Few intervention dropout
High acceptance rating
Positive outcomes
Many grateful participants

Participant Characteristics

Preliminary Outcomes: HAMD Score
Changes Baseline to 36-week Follow-up

Female, 35 years old
Baseline: "Yes, I should have never been born. They were right. Yeah, I got tired of living."
Session Completion: "I'm proud of myself for coming up with this momentum. I'm having now, it's easing the stress and teaching me how to progress and go through the process to get the result. I'm speaking, it helps my ego and helps my overall condition. It encourages me to do things that I put off of felt I couldn't handle. I'm like superwoman now!"

Female, 58 years old
Baseline: "I feel like a porcelain doll on the shelf collecting dust."
Session Completion: "Client oriented, wearing herself on a plate, and how needing to clear the air, have the water, and trim the leavers is a way she must take care of herself."

Male, 68 years old
Baseline: "I never feel fine... not like I used to, 100%. I used to go out and feel good about myself. I was a dancer. I miss that. With limitations, what for?"
Session Completion: "I've been making progress since we last met over video. It has really paid off for me. I keep setting goals and working on them. I never used to be a person to set a goal and write it on paper. I used to always just say take it day by day and see what happens. But now I see how much I can accomplish by using the worksheets and steps. It's been so much better these last couple of months. It really works to improve my mood. I've been using the problem solving skills for many things, I think the deadlines help. I work on things a little at a time and after a while, I can really see the progress. It makes me feel good. I see that little by little I can get things done. My life matters."

Female, 72 years old
Baseline: "I feel like a fossil. I'm good for nothing. The future looks bleak."
Session Completion: "I feel like a new person, if I could walk really well, I'd be running! I'm going wild. I'm like an animal out of the cage. I look forward to these sessions. They make me feel happy. I started to get things in the works. I was just sitting here not doing anything. I got things up and running. I can keep going now. You really helped me put things in perspective, to see things in a better light. I think everybody at one time or another needs a little push when they get into a slump. I now see things I didn't think of before and now I know how to achieve these goals."
Challenges in Teledelivery for Low-income Homebound Older Adults

- High Internet subscription fee (getting more expensive in the future) and other digital divide (laptop ownership)
- Potential solution: The OAA mental health funding
- In-home teletherapy reimbursement
- Potential solution: See NY State Telehealth policies (see the next slide)

State Telehealth Policies


- NY State Department of Health:

  “Allowing patients to access care more conveniently by expanding the use of telehealth services…. including expanding the list of eligible originating sites so that patients can receive telehealth services in any setting, including their own homes (Feb, 2018).”

Telemental Health and mHealth at VA

- Over >200,000 patients and 1.4 million encounters, 2002-2014 alone
- Used for every DSM-5 diagnosis
- January 2018: The U.S. Senate passed the Veterans in E-Health and Telemedicine Support (VETS) Act of 2017: Anywhere to Anywhere telehealth program: To allow VA-credentialed healthcare professionals the authority to treat veterans via telehealth or telemedicine no matter where they’re located, bypassing state laws and licensing requirements.
Research Project 3 (ongoing):
Social Connectedness Project (SCP)
Funding from AARP Fdn.
10/2017-8/2019

- Comparison of effectiveness of Tele-BA vs. Tele-FV in New Hampshire [Dartmouth] and Central TX [UT])
- Prevention of depression for socially isolated homebound older adults

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- Nathan Marti, PhD, biostatistician
- John Chen, MD, PhD, MPH, telemedicine evaluator

Questions and Comments