

Investigating Social Drivers of Medication Adherence and Their Impact on ADRD-Related Outcomes in Older Adults

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SHARE
Scholars in Health and
Alzheimer's Research
Engagement



College of Pharmacy
UNIVERSITY OF SOUTH CAROLINA

Aims and Conceptual Model

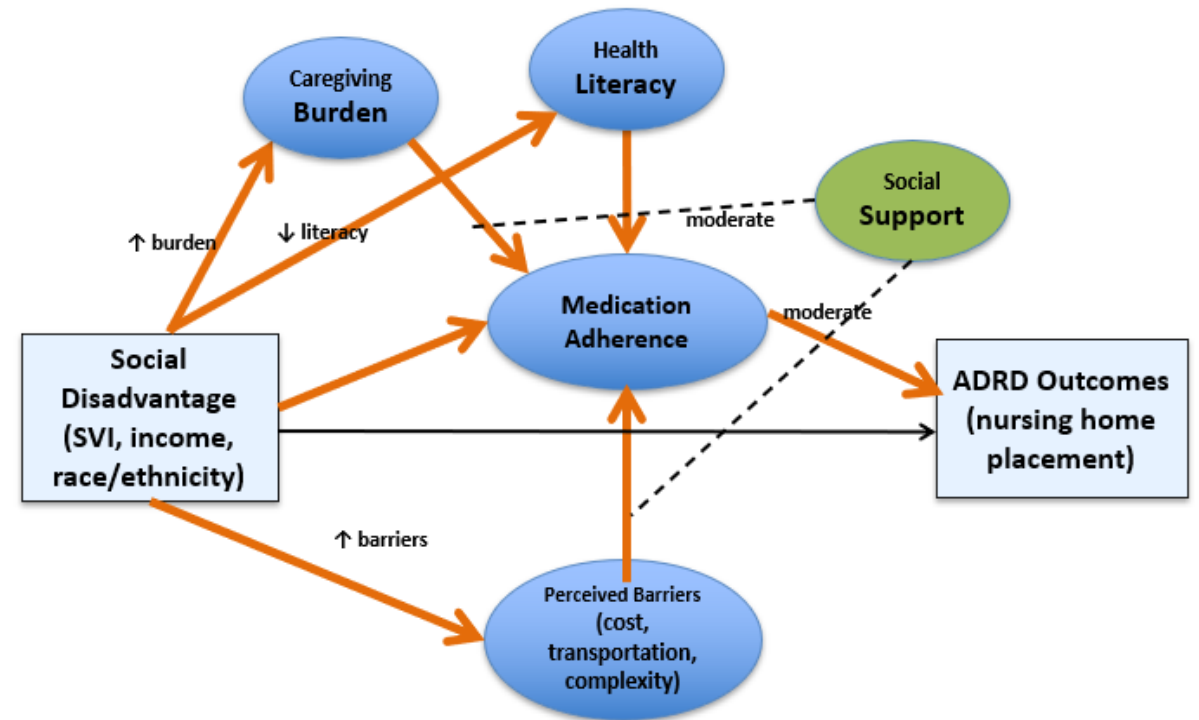
Aim 1

- To assess the association between social vulnerability index and medication adherence among older adults with ADRD.

Aim 2

- To investigate the extent to which medication adherence mediates the relationship between social disadvantage and other ADRD-related outcomes

Conceptual of Moderated mediation



Methods

Quantitative analyses estimate associations and mediation effects

Qualitative survey questions explain why/how the observed patterns occur and identify implementation-ready targets.

Setting: Prisma Health SeniorCare Program For All-Inclusive Care Of The Elderly (PACE)

Population: caregivers or adults with ADRD enrolled in Prisma Health SeniorCare.

Data sources: caregiver input in survey; chart review

Primary outcome: medication adherence

Secondary outcomes: nursing home placement, hospitalizations, emergency department (ED) visits, and proxies of clinical progression (e.g., antipsychotic initiation).

Measures

Primary outcome: adherence

Secondary outcomes: time to NHP, all cause hospitalization/ED visits, progression proxies (e.g., antipsychotic initiation)

Exposures/covariates: caregiving burden (ZBI-12); health literacy (BHLS or S-TOFHLA); social support (MOS-SSS short form); SVI

OUR OBJECTIVE

We are conducting a study to understand how well older adults with memory problems take their medications and how this impacts their health.

INTERESTED?

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✉ caic@mailbox.sc.edu

📍 715 Sumter St,
Columbia, SC, 29208

RESEARCH PARTICIPANTS NEEDED: MEDICATION ADHERENCE AND ADULTS WITH MEMORY PROBLEMS



WHO CAN PARTICIPATE?

- Anyone who is the primary caregiver for an individual with memory problems enrolled in Prisma Senior Care PACE center.
- Adults with memory problems and enrolled in Prisma Senior Care PACE center.
- Participation is voluntary

PARTICIPATION INVOLVES

- Completing a phone survey
- Your responses will help improve care for individuals with memory problems.
- A gift card of your choice will be provided.



Scan to Sign Up!

Timeline	Activity
October 2025	Kick off the SHARE pilot project
November 2025	Initiate the IRB review process
January 2026	Adjusted data collection procedures, including removing pill counts and replacing administrative EHR data with chart review. Revised the primary outcome to medication adherence and designated nursing home placement as a secondary outcome. Added more open-ended questions in survey.
February 2026	Finalize the survey, design flyer
March 2026	Received IRB approval including Prisma IRB
April 2026	Recruited the first participant
August 2026	34 participants have been recruited so far. Recruitment is still on-going.

SHARE Study

ANY COMMENTS BETWEEN *** ARE NOTES FOR THE INTERVIEWER AND NOT TO BE READ AS PART OF THE INTERVIEW ***

*** Caregiver of participants who are enrolled in PRISMA Health Senior Care PACE Center with diagnosed with AD/AD ***

*** STEP 1: WHEN PHONE IS ANSWERED, READ THE FOLLOWING: ***

Hello Mr./Mrs. _____,

My name is _____. I am a graduate student in the PharmD program at the University of South Carolina College of Pharmacy, and I work at the PRISMA Health Senior Care. I am working with researchers at USC on a study to learn more about medication adherence and how well patients with dementia follow directions for taking their medicine(s). You are invited to participate because you are caregiver of a patient at PRISMA Health Senior Care.

If you agree to participate, I will ask you to answer questions about your family member's medications, including whether you or your family member have any problems administering and taking the medications, as well as questions about your knowledge of health issues and the burdens you encounter as a caregiver. The interview will take approximately 60 minutes to complete. You may choose not to answer any question that you do not wish to answer.

Participation is voluntary and confidential. Your participation is not connected with the regular care delivered by PRISMA and is not part of those services. The information that you provide will be deidentified (names, address, etc. removed) and kept in a secure location at the University of South Carolina.

You will receive \$25 gift card for participating in the study.

Would this time be good for you to conduct this interview?

☐ Yes (record your initials) _____

☐ No (Record this call in the attempts log; reschedule the interview)

*** STEP 2: IF YOU REACH AN ANSWERING MACHINE, LEAVE THE FOLLOWING MESSAGE: ***

My name is _____ and I work with University of South Carolina College of Pharmacy and PRISMA Health Senior Care. I am trying to reach _____, I will try to reach you again later.

*** Record all attempts to call subject on the log ***

LOG OF ATTEMPTS TO CONTACT SUBJECT

Attempt	Date	Time	Outcome (e.g., no answer, message on machine)
1			
2			
3			
4			

ID NUMBER _____

Are you the primary caregiver of the individual enrolled in PRISMA Health Senior Care?

☐ Yes

☐ No (if no, the request the name and a telephone contact number for the appropriate person)

Name: _____

Telephone Number: _____

Are you compensated for providing care for this person?

☐ Yes, I am paid caregiver

☐ No, I am unpaid caregiver

Does the person you care for live in the same household as you?

☐ Yes

☐ No

What's your relationship with the patient or participant enrolled in PRISMA Health Senior Care?

☐ Daughter

☐ Son

☐ Wife

☐ Husband

☐ Daughter-in-Law

☐ Son-in-Law

☐ Parent

☐ Sister

☐ Brother

☐ Grandchild

☐ Niece or Nephew

☐ Cousin

☐ No blood relationship

☐ Other _____

*** Brief Medication Questionnaire (BMQ) ***

1. Please tell me about all medications that the person you care for took in the **PAST WEEK**. For each medication you share, I will then ask a few follow-up questions.

Medication name	How many days per week did he/she take it?	How many times per day did he/she take it?	How much did he/she take each time?	How many times did he/she miss taking it?	For what reason is he/she taking it?	In your opinion, how well does this medication work for the person you care for? 1 = very 2 = somewhat 3 = not at all 4 = don't know

2. Do any of medications bother the person you care for or make caregiving harder?

☐ Yes

☐ No

IF YES, please name the medication(s) and explain the issue:

Medication Name	How does it bother your family <u>member</u> or make caregiving harder?

3. For each of the following statements, please share how much of a concern they are for you (not concerned, a little concerned, very concerned). *** [circle one] ***

	Not concerned	A little	Very
a. Medications cause side effects in the person I am caring for	☐	☐	☐
b. It is hard for me to remember all the doses	☐	☐	☐

- | | | | |
|---|--------------------------|--------------------------|--------------------------|
| c. It is hard for me to pay for the medication | ☐ | ☐ | ☐ |
| d. It is hard for me to open the container | ☐ | ☐ | ☐ |
| e. It is hard for me to pick up refills on time | ☐ | ☐ | ☐ |
| f. It is hard for me to read the print on the container | ☐ | ☐ | ☐ |
| g. The dosage times are inconvenient | ☐ | ☐ | ☐ |
| h. Medication causes other <u>problem</u> or concern | ☐ | ☐ | ☐ |

If other problem or concern, please explain: _____

4. Did the person you care for stop taking any medication in the **PAST SIX MONTHS**?

☐ Yes

☐ No

If YES, please list the medications that were stopped and answer the questions below.

Medication name	For what reason was he/she taking it?	How well did the medication work? 1 = very 2 = somewhat 3 = not at all 4 = don't know	How much did it bother the person you care for? 0 = none 1 = a little 2 = a lot

*** Caregiver Burdens ***

*** Instrument: A 12-item short-version Zarit Burden Interview (ZBI-12) will be applied to measure the informal caregiver burdens of non-institutionalized people living with ADRD ***

	Never	Rarely	Sometimes	Frequently	Nearly Always
1) Do you feel you don't have enough time for yourself because of caregiving?	0	1	2	3	4
2) Do you feel stressed between caring and meeting other responsibilities?	0	1	2	3	4
3) Do you feel angry when you are around your relative?	0	1	2	3	4
4) Do you feel your relative affects your relationship with others in a negative way?	0	1	2	3	4
5) Do you feel strained when are around your relative?	0	1	2	3	4
6) Do you feel your health has suffered because of your involvement with your relative?	0	1	2	3	4
7) Do you feel you don't have as much privacy as you would like, because of your relative?	0	1	2	3	4
8) Do you feel your social life has suffered because you are caring for your relative?	0	1	2	3	4
9) Do you feel you have lost control of your life since your relative's illness?	0	1	2	3	4
10) Do you feel uncertain about what to do about relative?	0	1	2	3	4
11) Do you feel you should be doing more for your relative?	0	1	2	3	4
12) Do you feel you could do a better <u>job</u> in caring for your relative?	0	1	2	3	4

*** Health Literacy – Caregiver ***

***Instrument: Brief Health Literacy Screen (BHLS) ***

Q1: How confident do you feel filling out medical forms by yourself for the person you care for?

1. Quite a bit
2. Somewhat
3. A little bit
4. Not at all

Q2: How often do you need help reading medical or health-related materials (such as hospital or clinic instructions) for the person you care for?

1. Always
2. Often
3. Sometimes
4. Never occasionally

Q3: How often do you have trouble understanding written information about the medical condition(s) for the person you care for?

1. Always
2. Often
3. Sometimes
4. Never occasionally

***2 Open-ended Questions ***

Q1: What are some of the things that make it hard for the person you care for to take their medications consistently?

Q2: In what ways do transportation, finances, social support, understanding of treatment plans or prescriptions, or other factors influence how consistently the person you care for takes their medications?

Preliminary Results (n = 33)

Recruitment is still on-going.

Demographics		n	%
Are you compensated for providing care for this person?	yes	2	6%
	no	31	94%
Does the person you care for live in the same household as you?	yes	24	73%
	no	9	27%
What is your relationship with the patient or participant enrolled in PRISMA Health Senior Care?	Daughter	13	39%
	Sister	4	12%
	Son	3	9%
	Husband	2	6%
	Daughter-in law	2	6%
	Brother	2	6%
	Wife	1	3%
	Parent	1	3%
	Niece or nephew	1	3%
	No blood relation	1	3%
	Other	3	9%

Preliminary Results (n = 33)

Recruitment is still on-going.

Brief Medication Questionnaire (BMQ)	min	max	mean
How many medications does the person who you are caring for currently take?	1	10	5

Chart Review		n	%
Medication adherence/compliance level	Level 1: takes medications ≥80% of the time	22	71%
	Level 2: takes medications 60–80% of the time; MediPak users	9	28%
	Level 3: takes medications <60% of the time	0	0%
	missing	2	-

	n	mean	median	min	max
SVI (social vulnerability index)	31	0.531	0.489	0.039	0.946

SVI by medication adherence level (from chart review)

Adherence	n	Mean SVI ± SD	Median SVI (IQR)	Range
Level 1 (≥80%)	22	0.590 ± 0.279	0.522 (0.397–0.879)	0.194–0.946
Level 2 (60–80% / MediPak)	9	0.385 ± 0.268	0.260 (0.246–0.555)	0.039–0.835

$p = 0.097$ (Mann–Whitney U test)

Preliminary Results (Caregiver Burden)

Recruitment is still on-going.

Caregiver burden by medication adherence (from chart review)

- For the caregiver burden analysis, I used the common 0–4 coding:
Never = 0, Rarely = 1, Sometimes = 2, Frequently = 3, Nearly always = 4
- With 12 questions, the possible total score is 0–48, with a higher score representing greater burden.

Chart-reviewed adherence	n	Mean $\pm$ SD burden	Median (IQR)	Range
Level 1 ($\geq 80\%$)	22	11.4 $\pm$ 11.8	6 (2–16.75)	0–36
Level 2 (60–80% / MediPak)	9	11.0 $\pm$ 8.4	10 (6–16)	1–28
Total	31	—	—	—

Note: 2 participants were excluded due to missing adherence data.

The median burden was numerically higher in Level 2 caregivers (**10**) than Level 1 caregivers (**6**), but the distributions overlap considerably.

Preliminary Results (Health Literacy)

Recruitment is still on-going.

1. Confidence completing medical forms

Higher confidence: “Quite a bit”
Potential challenge:
“Somewhat,” “A little bit,” or “Not at all”

Confidence	Level 1 (n=22)	Level 2 (n=9)
Quite a bit	14 (63.6%)	7 (77.8%)
Less than quite a bit	8 (36.4%)	2 (22.2%)

2. Needing help reading medical/health materials Dichotomization:

No challenge: Never
Potential challenge:
Sometimes/Often/Always

Needs help reading	Level 1 (n=22)	Level 2 (n=9)
Never	13 (59.1%)	6 (66.7%)
Sometimes/Often/Always	9 (40.9%)	3 (33.3%)

3. Trouble understanding written medical information

No challenge: Never
Potential challenge:
Sometimes/Often/Always

Needs help reading	Level 1 (n=22)	Level 2 (n=9)
Never	13 (59.1%)	6 (66.7%)
Sometimes/Often/Always	9 (40.9%)	3 (33.3%)

Based on this preliminary sample, caregiver health-literacy challenges were not significantly associated with poorer chart-reviewed medication adherence (all $p > 0.05$).

Thank you!



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Mentors

- Dr. Matthew Lohman
- Dr. Maggi Miller
- Dr. Tessa Hastings

Collaborators

- Dr. Karen McGee

Peers

- SHARE Scholars

Student Researchers

- Victoria Bozarth (P2)
- Eric Kish (Pre-pharmacy)
- Mallory Ayers (P3)
- Courteney Hicks (P3)
- Ruby Glennon (P3)