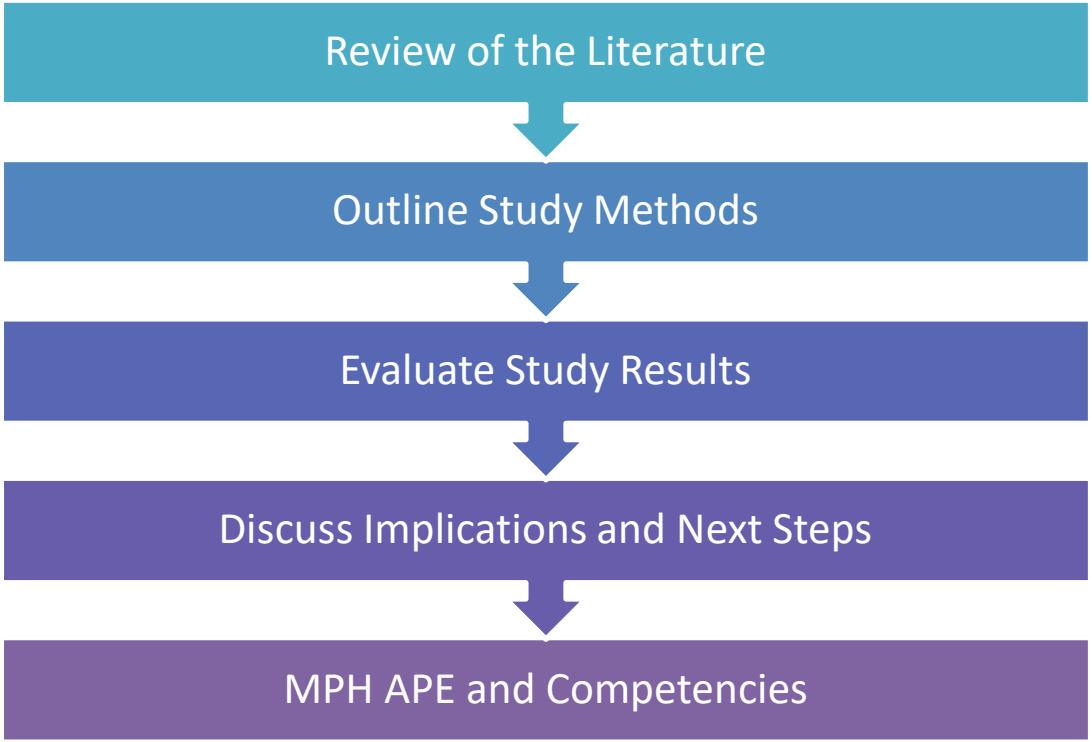
Facilitators and Barriers to Resident Physical Activity Participation in Rural Long-term Care Facilities: A Facility Perspective

By Kendra Marstall

Today's Agenda



Why this topic?

In the United States, there are 55.8 million older adults (ages 65+), accounting for approximately 16.8% of the total population.[1]

2.2 million older adults live in long-term care (LTC) facilities, and this number has been projected to triple by 2050.[2,3]

State of Kansas[16]

2000

2010

2020

A Personal Note

What is Long-term Care (LTC)?

Literature Review

Physical activity (PA) is linked to healthier aging[4]

Living in a rural location is associated with poor health outcomes and varying levels of PA[5-7]

Living in LTC has been associated with decreased quality of life[8]

PA for residents in LTC settings is much lower than their community-dwelling counterparts[9]

Literature Review

Facilitators

- Family support
- Group activities
- Quality of programming
- Staff encouragement
- Offering choices
- Integrating activities into daily routines
- Adequate financial funding
- Administrative support
- Space provision
- Outdoor spaces

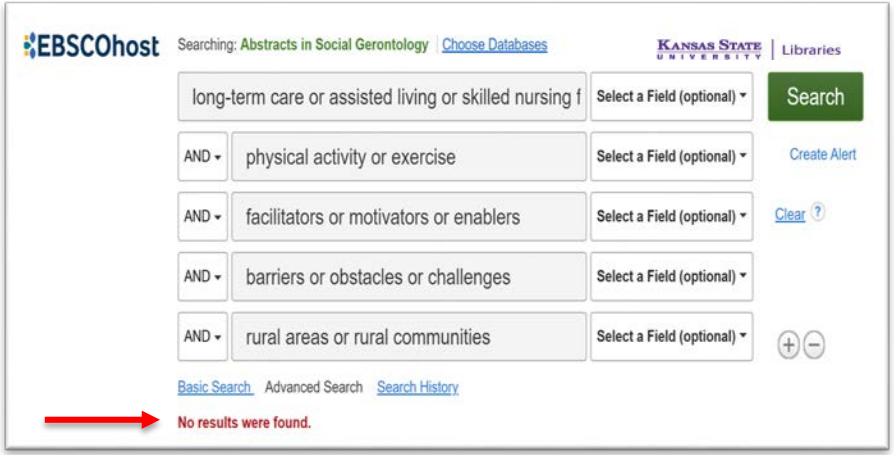
Barriers

- Low resident motivation
- Health limitations
- Safety concerns
- Dissatisfaction with programming
- Lack of PA knowledge
- Insufficient funding
- Lack of time
- Staffing
- Physical space and design

Gaps in the Research

Literature review demonstrates:

- Dated literature
  - Many = 10+ years old
- PA typically reviewed through a therapeutic lens
- Few took into account administrative positions
- Lack of representation of rural regions



Study Purpose

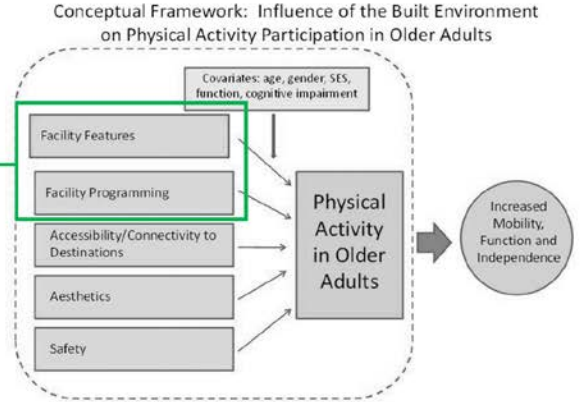
This study aimed to understand the facilitators and barriers to resident PA participation in rural LTC from a facility perspective.

RQ1: What are the facilitators and barriers to resident physical activity participation in rural long-term care facilities from a facility perspective?

RQ2: What are the strategies on how to improve resident PA participation in rural long-term care from a facility perspective?

Methods – Guiding Framework[17,18]

(Sallis et al., 2006)



(Haselwandter et al., 2015)

Social Climate, Programs, Culture, Norms, Social Capital

Social Climate, Culture, Norms, Social Capital

Facility Features

Facility Programming

Physical Activity Participation in Rural Long-term Care

Increased Mobility, Function, and Independence

Methods – Study Design

- Study type: Exploratory study
- Study design: Mixed methods
  - Survey
  - Interview
- Study variables:
  - Facilitators to PA
  - Barriers to PA
  - Strategies to increase PA

KANSAS STATE UNIVERSITY

Thank you for your interest in participating in this study. Physical activity and where we do physical activity can change as we age. In this study, we are interested in better understanding the facilitators and barriers to physical activity within rural long-term care settings from a facility perspective. We are also interested in learning more about facility attitudes and environments that influence physical activity promotion.

Please answer the following questions below to determine your eligibility to participate in this study. If you are not eligible for the study, we will not use your responses to this survey in our database. Thank you for your cooperation!

Methods – Study Population

1. Kansas Department for Aging and Disability Services (KDADS) List
   - Name and type of facility
   - Name of administrator
   - Phone number

2. Rural-Urban Continuum Codes (RUCC) – 2013 by the USDA
   - "Form a classification scheme that distinguishes metropolitan counties by the population size of their metro area, and nonmetropolitan counties by degree of urbanization and adjacency to a metro area." – USDA 2020

Methods – Study Population Cont.

Inclusion criteria:

1. Have worked full-time at the facility for at least four months
2. Hold an administrative position
   - e.g., facility administrator, wellness coordinator, activities director, director of nursing, etc.
3. Facilities are located within a rural region in the state of Kansas
   - i.e., population of <10,500
4. Facility is an assisted living facility AND/OR a skilled nursing facility only

Potential study sample size (N=79) facilities

Aiming for 25% response rate (n=20) facilities

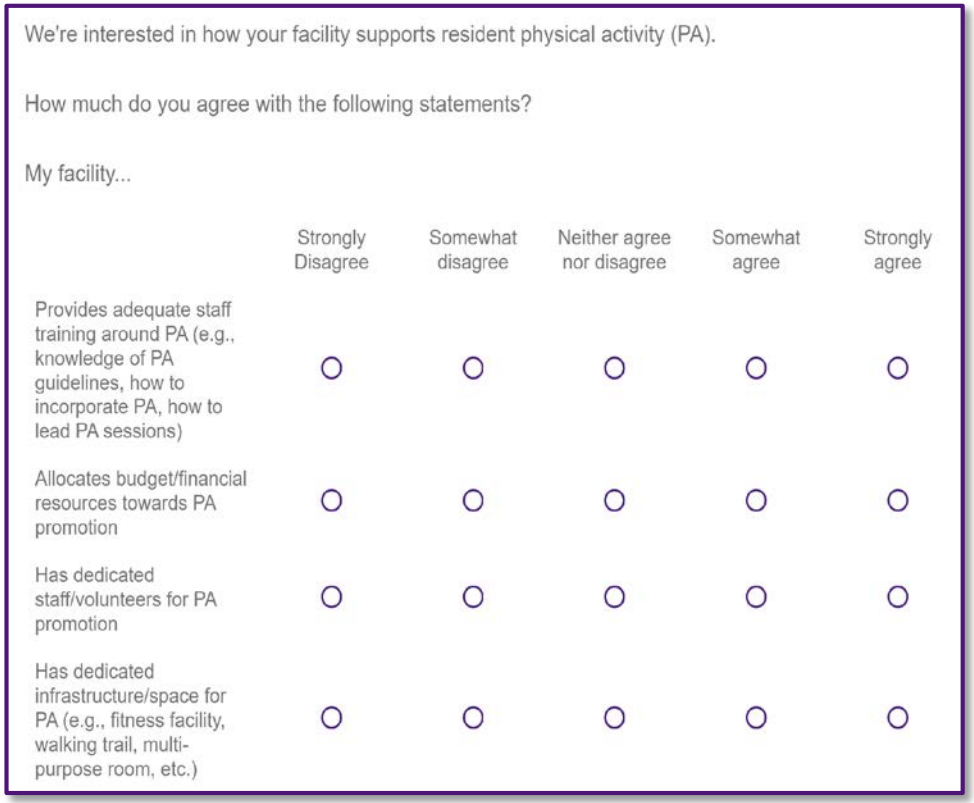
Methods – Recruitment Process

- Called facilities
- Acquired emails
- Sent initial email with survey
- Three rounds of follow-up
- Call for interviews
- Distribution of gift cards

Methods – Survey

- Survey = Qualtrics
  - 27 questions
  - Duration 10-20 minutes

- Survey questions aimed to:
  - Examine administrative perspectives of organizing PA in LTC facilities[10]
  - Understand facilitators and barriers to PA participation[11]
  - Review the types of PA programming available[12,13]
  - Evaluate PA environments, particularly outdoors[14,15]



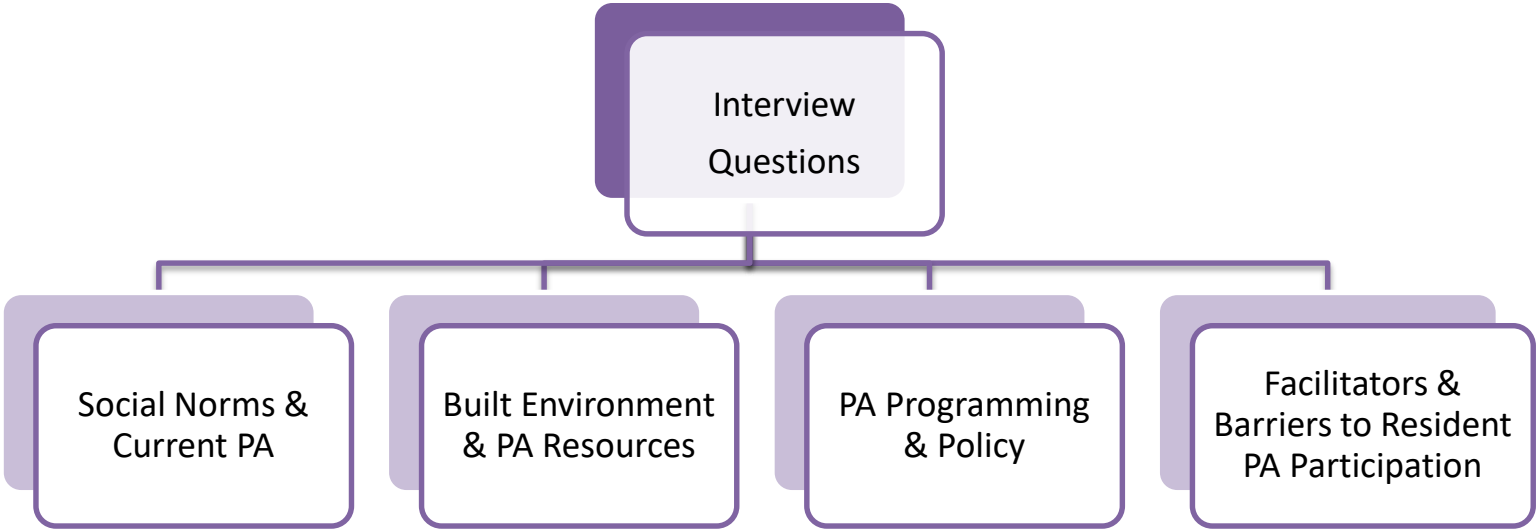
We're interested in how your facility supports resident physical activity (PA).

How much do you agree with the following statements?

My facility...

	Strongly Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
Provides adequate staff training around PA (e.g., knowledge of PA guidelines, how to incorporate PA, how to lead PA sessions)	○	○	○	○	○
Allocates budget/financial resources towards PA promotion	○	○	○	○	○
Has dedicated staff/volunteers for PA promotion	○	○	○	○	○
Has dedicated infrastructure/space for PA (e.g., fitness facility, walking trail, multi-purpose room, etc.)	○	○	○	○	○

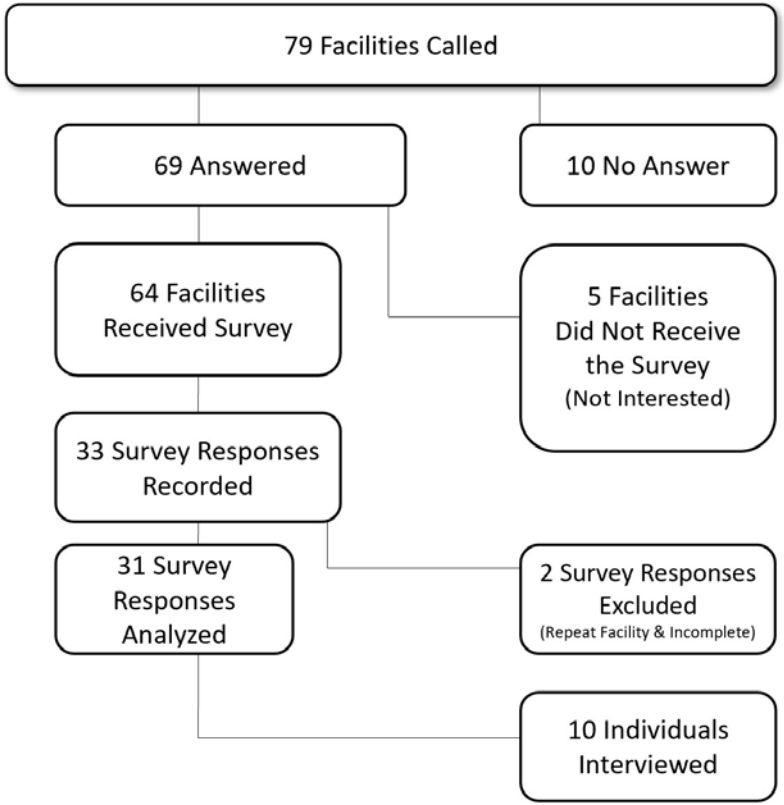
Methods – Optional Follow-Up Interview



Methods – Data Analyses

- Survey Data
  - Descriptives
    - Means, standard deviations, frequencies
- Interviews
  - Thematic analysis[19]
  - Two independent coders
  - Establishing trustworthiness[20]

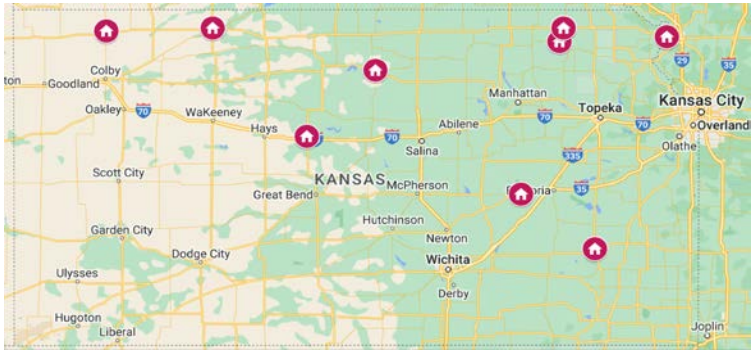
Results – Responses



48.4% survey response rate

39.2% of facilities reached

Surveys



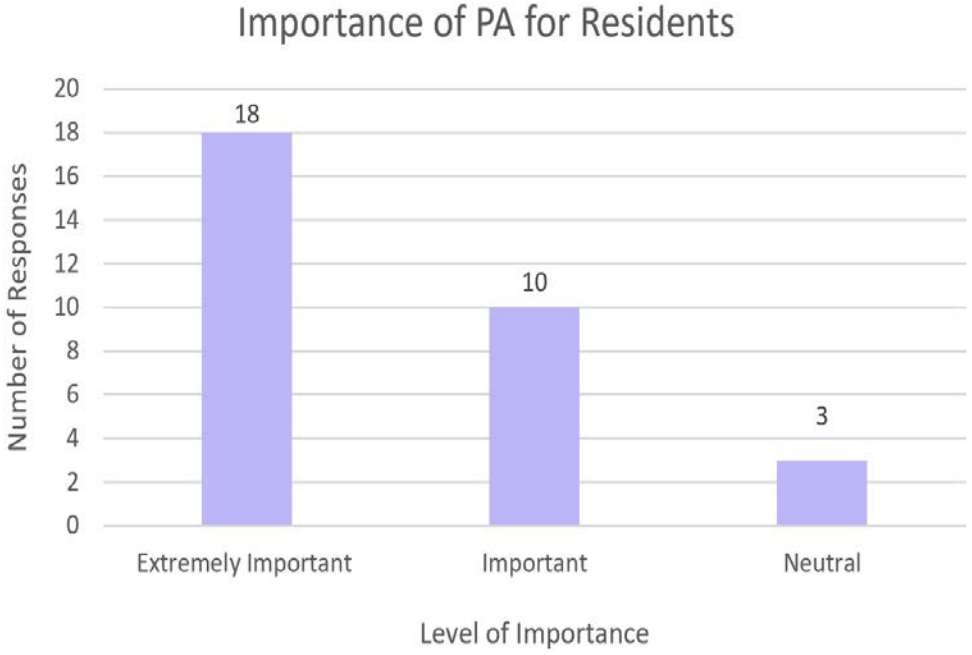
Interviews

Results – Survey Demographics

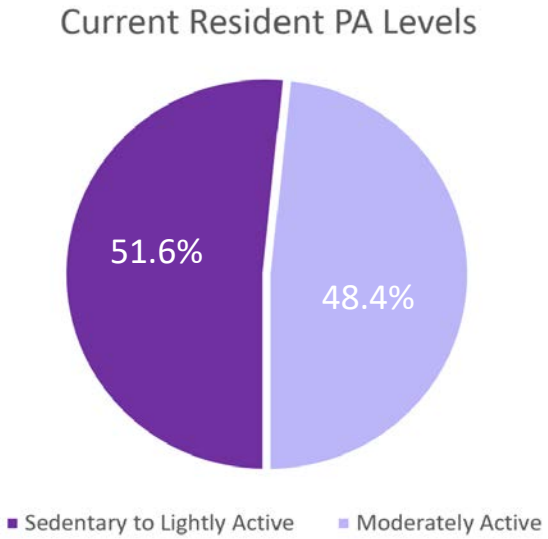
	Total (n)	Percentage (%)
Facility Position (n=31)		
Facility Administrator/Coordinator	17	54.8
Activities or Social Director	6	19.4
DON/ADON	5	16.1
Wellness Director	2	6.5
Other	1	3.2
Years of Working at the Facility (n=31)		
6-11 months	2	6.5
1-2 year	7	22.6
3-4 years	4	12.9
5+ years	18	58.0
Facility Type (n=31)		
Assisted Living	9	29.1
Skilled Nursing	15	48.3
Both	7	22.6
Approximate Number of Residents (n=31)		
11-20	2	6.5
21-30	7	22.6
31-40	11	35.4
41-50	7	22.6
51+	4	12.9
For-Profit (n=31)		
Yes	16	51.6
No	13	41.9
Don't know/unsure	2	6.5
Accept Medicaid Funding (n=31)		
Yes	29	93.5
No	2	6.5
Percent of Residents on Medicaid (n=29)		
1-25%	5	17.2
26-50%	3	10.3
51-75%	16	55.2
76-100%	4	13.9
Don't know/unsure	1	3.4

70.9

Results – Current PA

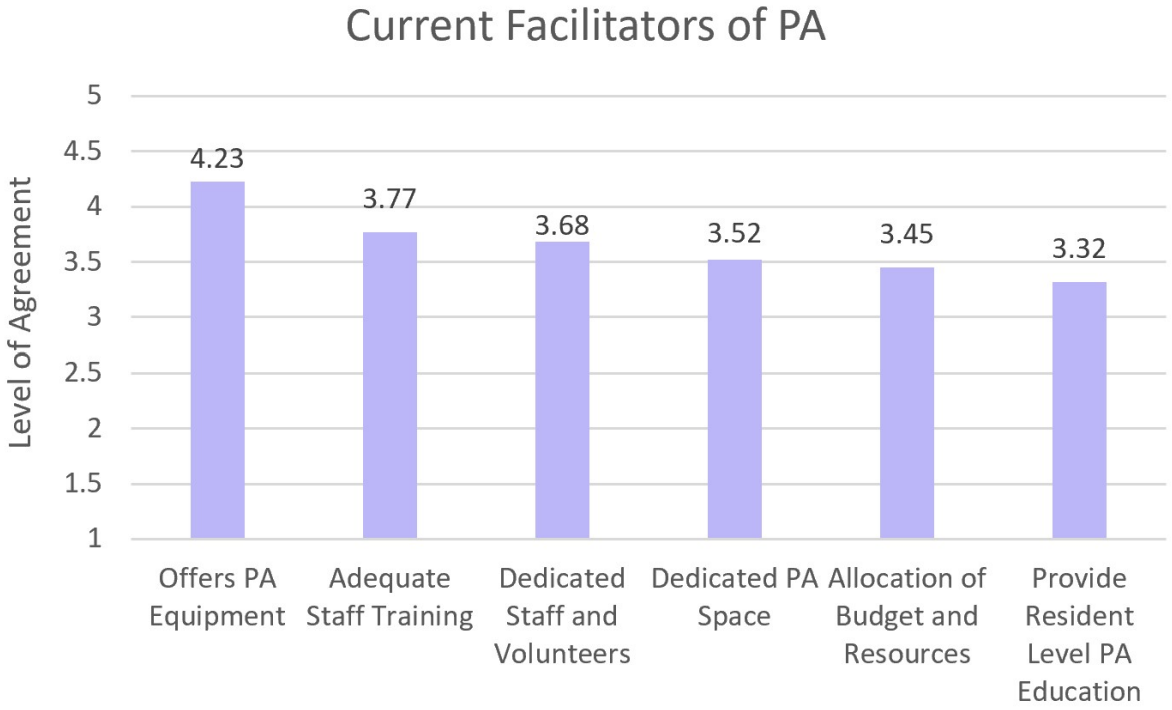


PA is of high importance (4.48±0.68 out of five)



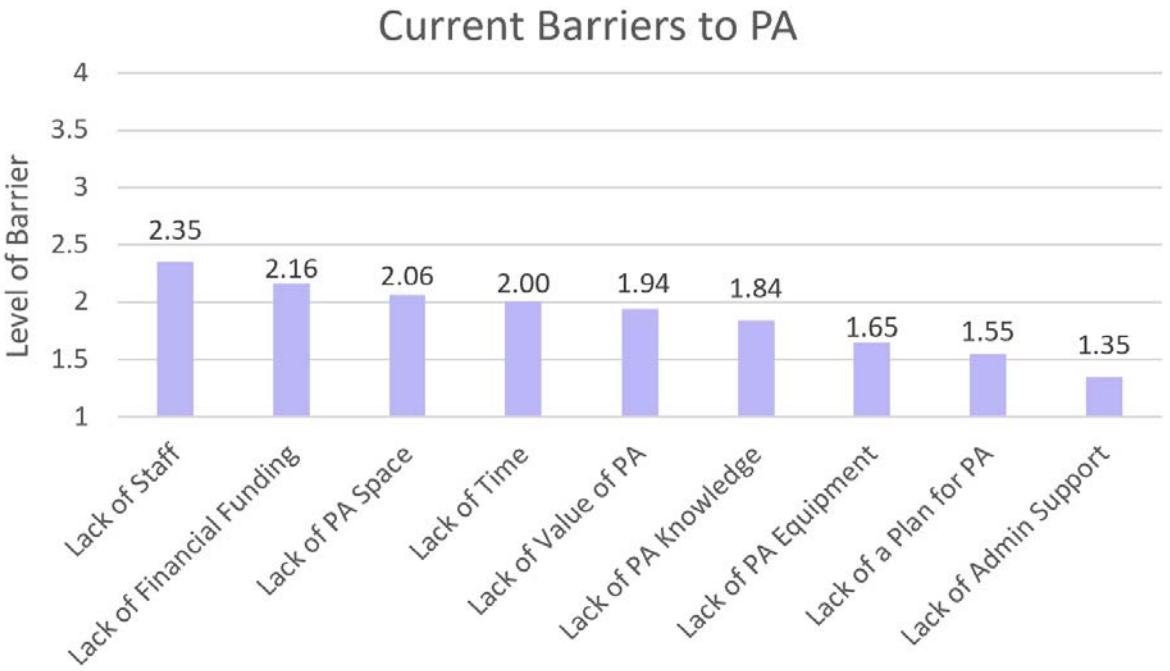
- 77.4% facilities had policies to promote PA
- 87.1% had existing PA programming

Results – Facilitators



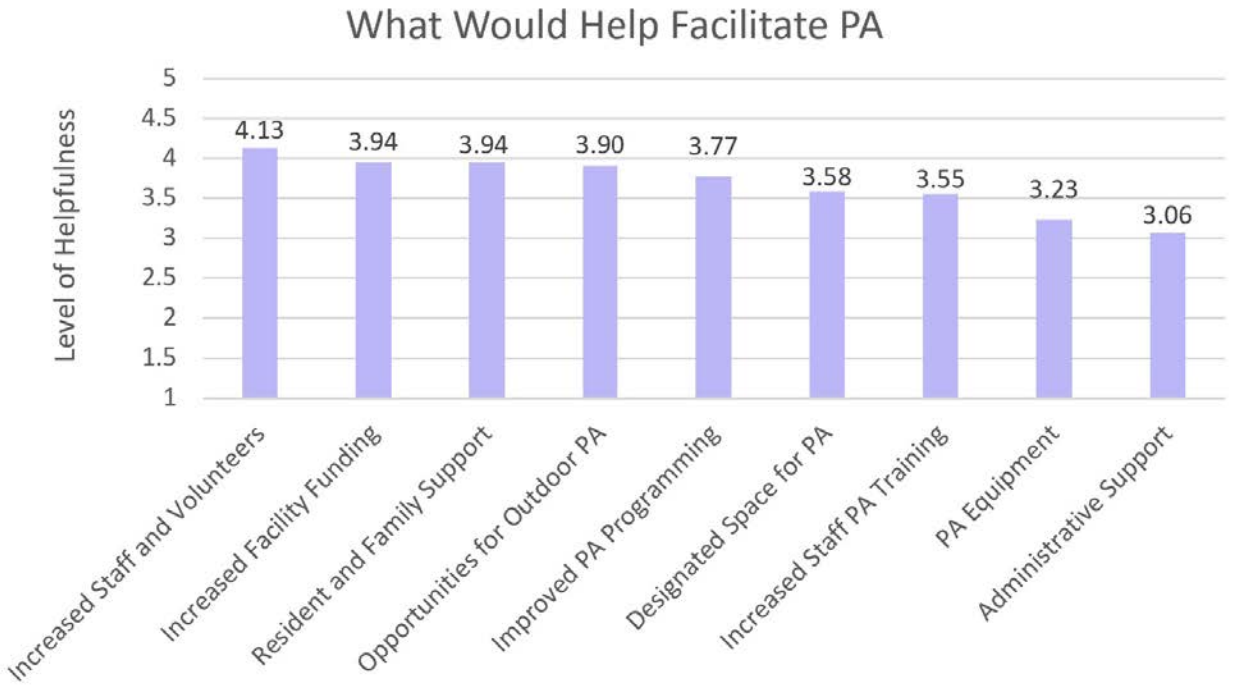
(1 = strongly disagree, 5 = strongly agree)

Results – Barriers



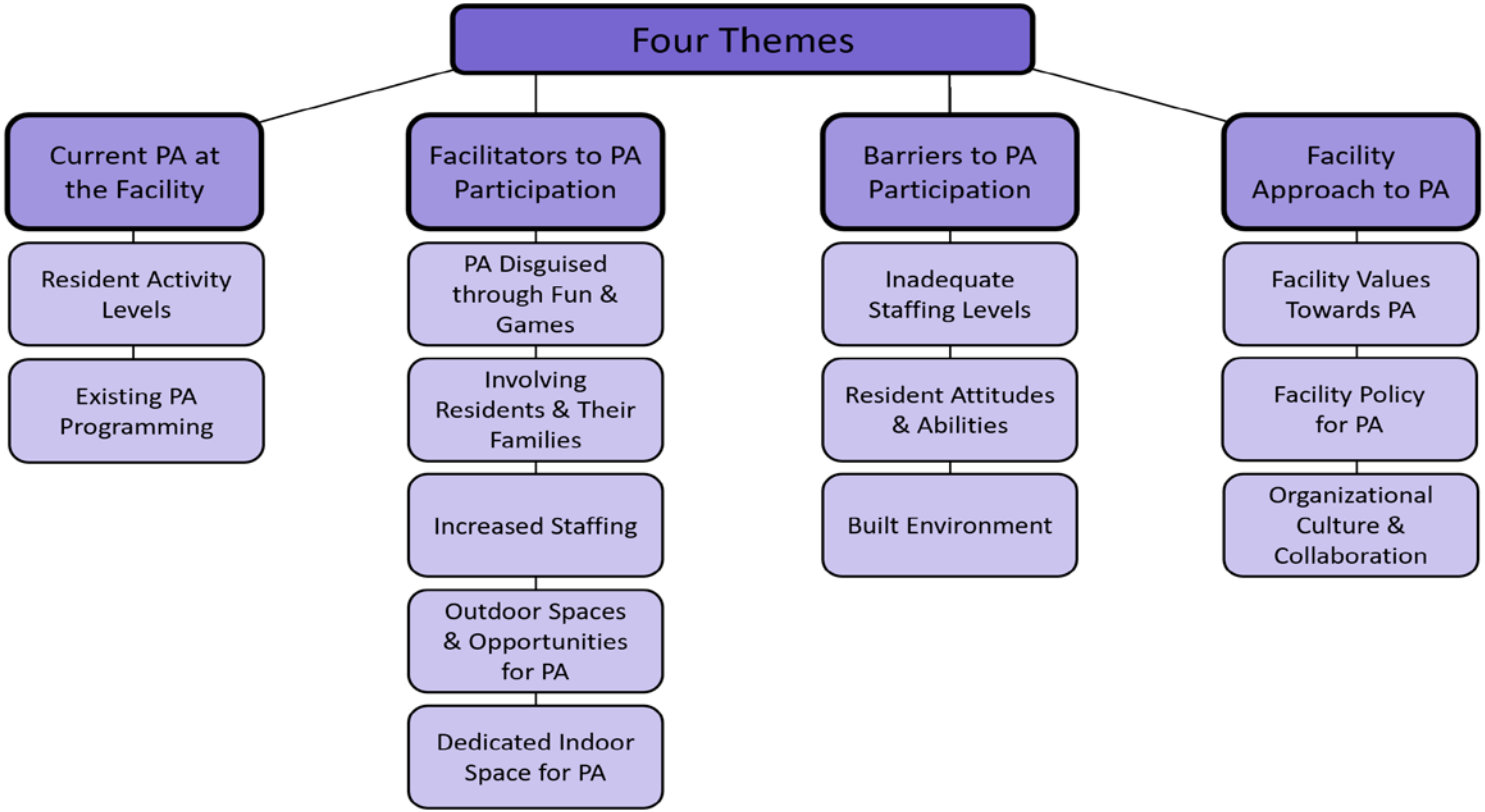
(1 = not at all a barrier, 4 = a major barrier)

Results – Strategies to Improve PA



(1 = not at all helpful, 5 = extremely helpful)

Results – Qualitative Themes



Results – Current PA

Resident Activity Levels

"Light to moderate (P6)."

"They're not as active over there as they used to be (P8)."

Physical Activity Programming

"We have an activity group a couple of times a week, like some sittercises, but that's really it (P10)."

Results – Facilitators

- Disguised PA through fun and games
- Outdoor spaces and opportunities for PA
- Involving residents and families
- Increased staffing
- Dedicated indoor space for PA

"If it's not fun, they're not going to do it. It becomes a job; it becomes something that they don't care to do (P9)."

They really like when you make their exercise a game… they don't really realize that they are actually exercising (P10)."

"Honestly, when it all is said and done, the best thing you can do is get them outside. It's the best. It's about the best way to get activity is to go out and to get fresh air. It rejuvenates the body, the mind, and the soul (P1)."

Results – Barriers

Inadequate Staffing Levels

"I think really our biggest barrier is just staffing (P4)."

"Physical activity has to take a step back just to make sure that their medical care and things like that are getting taken care of (P5)."

Resident Attitudes and Abilities

"Their bodies don't always work the way they want them to. Their mind might still be there, but they physically can't (P8)."

Built Environment

"We just don't have the space (P6)."

"You know, space wise, yeah, our facility isn't a big facility. Our building is probably 60 years old (P3)."

Results – Facility Approach to PA

Facility Values Towards PA

"The better the activity, the better the brain. And you can actually see improvement in people if you get them active (P1)."

Facility Policy for PA

"Residents' rights override anything we can do (P8)."

"One of our basic care plans that we do is about their activity level (P10)."

Organizational Culture and Collaboration

"I mean, I think everybody's just really good about it being encouraging to residents... (P4)"

"It can't be just one person. It's gotta be the team (P9)."

Discussion

RQ1: What are the facilitators and barriers to resident physical activity participation in rural long-term care facilities from a facility perspective?

Facilitators

- Family & resident involvement
- Dedicated staff & volunteers
- Staff training
- Staff encouragement & teamwork
- Administrative support
- Adequate financial funding
- Provision of space & PA equipment
- Outdoor PA opportunities
- Making PA Fun

Barriers

- Low resident motivation
- Health limitations
- Insufficient funding
- Time demands
- Low staffing
- Absence of physical space
- Poor facility design

Discussion

RQ2: What are the strategies on how to improve resident PA participation in rural long-term care from a facility perspective?

1. More staffing and volunteers
2. Increase facility funding
3. Enhance PA programming
4. Implement policies for PA at the facility level
5. Intentionally involve families and residents
6. Have dedicated space for PA (indoor and outdoor)
7. Make PA opportunities fun and enjoyable

Strengths and Limitations

Strengths

- Mixed methods study design
- Survey and interview questions grounded in literature
- Established trustworthiness in qualitative data

Limitations

- Definition of rurality
- Limited study parameters
- Cross-sectional study and subjective data
- Small sample size

Study Conclusions

1. Helped to fill in the gap that exists in current literature around PA in rural LTC
2. Staffing, funding, & space emerged as substantial barriers
3. Facilities need to have supportive administrators & effective team collaboration
4. PA programming needs to be fun & enjoyable for residents

Future Directions

Advocate for & implement policy that promotes PA within LTC

Develop PA programming that integrates evidence-based principles & components of fun

Continue PA research within rural LTC & explore differences across states

Applied Practicum Experience

Dallas Area Agency on Aging

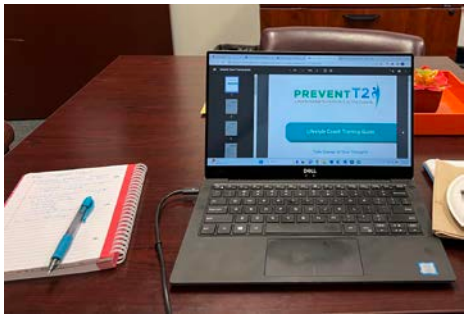
APE – A Snapshot

PUBLIC HEALTH ASSOCIATION TEXAS

Dallas AAA Area Plan FFY 2024 – FFY 2026

As Required by
Older Americans Act, As Amended in 2020: Section 306, Area Plans

Approved by HHSC Office of Area Agencies on Aging
Effective October 2023



APE Products and Core Competencies

Portfolio Product		Number and Competency Addressed	
1	Area Plan	18	Select communication strategies for different audiences and sectors
2 & 3	Needs Assessment & Caregiver Analysis	3	Analyze quantitative and qualitative data using biostatistics, informatics, computer-based programming and software, as appropriate
2 & 3	Needs Assessment & Caregiver Analysis	4	Interpret results of data analysis for public health research, policy or practice
2 & 3	Needs Assessment & Caregiver Analysis	7	Assess population needs, assets and capacities that affect communities' health
4	Journal of Daily Activity	21	Perform effectively on interprofessional teams
4	Journal of Daily Activity	22	Apply systems thinking tools to a public health issue

APE and Emphasis Area Competencies

MPH Emphasis Area: Public Health Physical Activity	
Number and Competency	
1	Population health
2	Social, behavioral, and environmental influences
3	Theory application
4	Developing and evaluating physical activity interventions
5	Support evidence-based practice

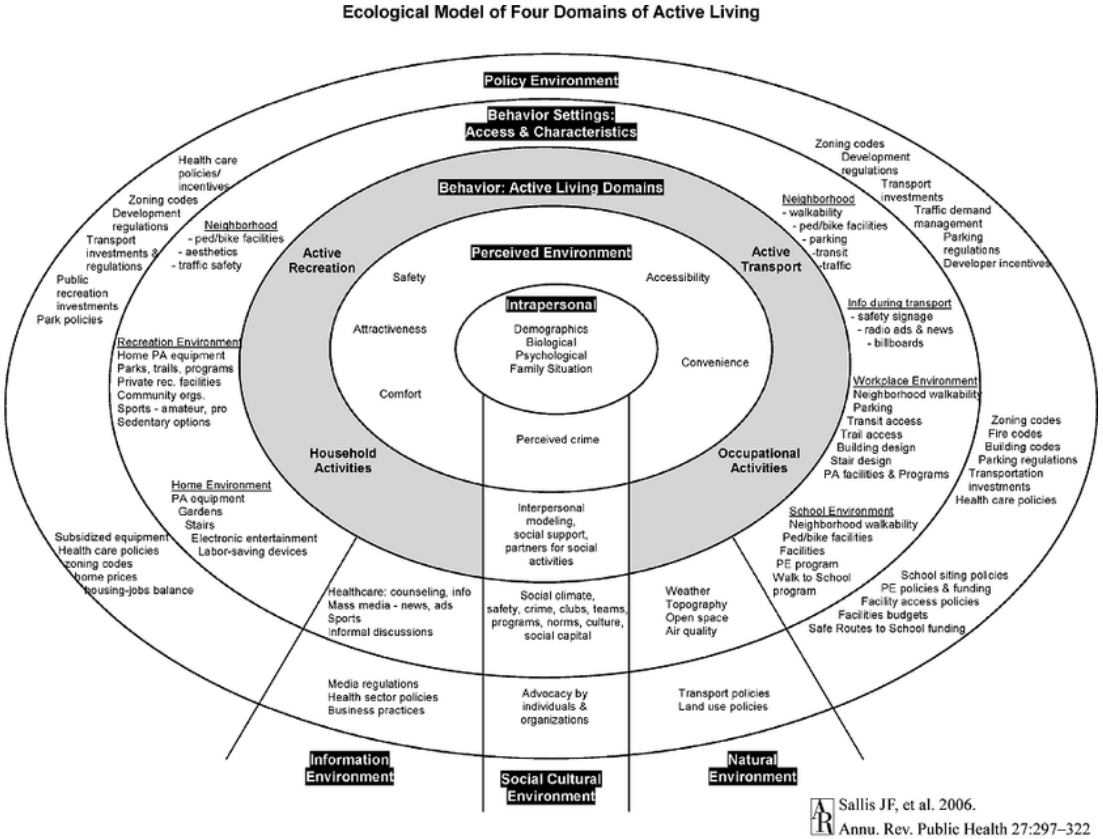
Acknowledgements

Closing Thoughts

“They aren’t fragile… They can do more, and we need to push that, and we need to encourage that… The big takeaway is they aren’t fragile. They aren’t here to die. They’re here to live (S1).”

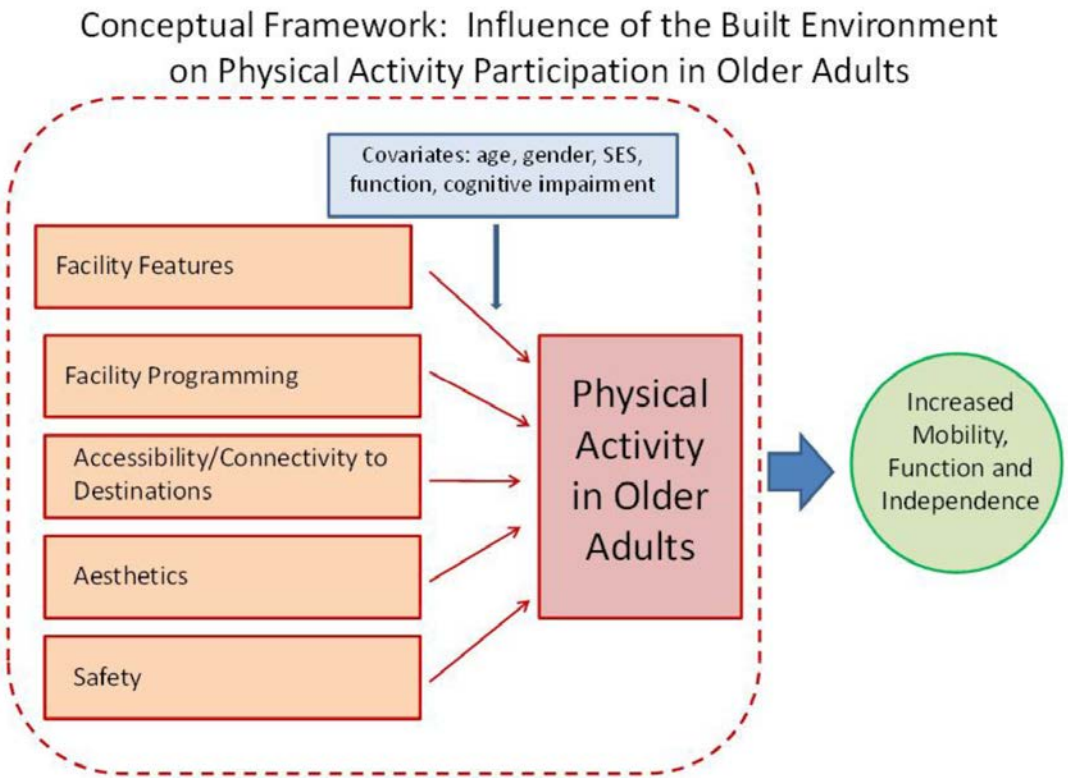
Questions?

Sallis et al. (2006) – Model[18]



Sallis JF, et al. 2006.
Annu. Rev. Public Health 27:297–322

Haselwandter et al. (2014) – Model[17]



Rural-Urban Continuum Codes

Code Value	Definition
1	Metro - Counties in metro areas of 1 million population or more
2	Metro - Counties in metro areas of 250,000 to 1 million population
3	Metro - Counties in metro areas of fewer than 250,000 population
4	Nonmetro - Urban population of 20,000 or more, adjacent to a metro area
5	Nonmetro - Urban population of 20,000 or more, not adjacent to a metro area
6	Nonmetro - Urban population of 2,500 to 19,999, adjacent to a metro area
7	Nonmetro - Urban population of 2,500 to 19,999, not adjacent to a metro area
8	Nonmetro - Completely rural or less than 2,500 urban population, adjacent to a metro area
9	Nonmetro - Completely rural or less than 2,500 urban population, not adjacent to a metro area

USDA, 2013

Thematic Analysis Process[19]

- Familiarization of data
- Generation of codes
- Combining codes into themes
- Reviewing themes
- Determine significance of themes
- Reporting of findings

Current Study:

1. Two independent coders
2. 92 codes generated
3. 13 categories
4. 4 main themes

Establishing Trustworthiness[20]

Credibility

- Followed appropriate interviewing and training techniques and peer debriefing procedures
- Conducted qualitative analysis under the mentorship of an experienced qualitative researcher

Dependability

- Kept detailed logs to record the data collection process for the interviews
- Utilized interviewed questions that were modified from previously published literature

Confirmability

- Employed data triangulation
  - Interview audio, video recordings, and field notes
  - Used two independent coders
- Practiced reflexivity when reviewing the data

Transferability

- Aimed for data saturation

Additional Stats Ran – Independent T-tests

- Exploring differences between for-profit and nonprofit facilities
  - Sample size: (n=29)

- Only two significant differences
  - For-profit facilities were less likely to need increased staff and volunteer help to facilitate PA participation ($t(27) = -2.48$, $p = .021$)
  - For-profit facilities were more likely to have higher administrative support for offering PA programming ($t(27) = 2.37$, $p = .025$)

- No other significant differences between for-profit and nonprofit were found

Survey Design – What I Would Have Done

- Consult literature
  - Idea generation of questions
  - Use existing surveys in previously published literature
- Consult experts
  - Perform cognitive interviews
  - Delphi technique with panel of field experts
- Run multivariate analyses
  - Factor analysis
  - Principal component analysis
  - Cronbach's alpha

What this helps with:

1. Provides standardized questions
2. Enhances validity and reliability of survey tool
3. Improves confidence in survey results
4. Allows for greater comparison to previous literature findings

Survey Data Tables

Facilitators

Current PA Facilitators	1		2		3		4		5		Mean	SD
	F	%	F	%	F	%	F	%	F	%		
Offers PA equipment	0	0.0	2	6.5	4	12.9	10	32.3	15	48.4	4.23	0.92
Adequate staff training	1	3.2	3	9.7	6	19.4	13	41.9	8	25.8	3.77	1.05
Dedicated staff and volunteers	3	9.7	1	3.2	8	25.8	10	32.3	9	29.0	3.68	1.22
Dedicated PA space	3	9.7	5	16.1	6	19.4	7	22.6	10	32.3	3.52	1.36
Allocation of budget and resources	1	3.2	3	9.7	11	35.5	13	41.9	3	9.7	3.45	0.93
Provides resident level PA education	4	12.9	4	12.9	7	22.6	10	32.3	6	19.4	3.32	1.30

Barriers

Current PA Barriers	1		2		3		4		Mean	SD
	F	%	F	%	F	%	F	%		
Lack of staff	3	9.7	18	58.1	6	19.4	4	12.9	2.35	0.84
Lack of financial funding	10	32.3	11	35.5	5	16.1	5	16.1	2.16	1.07
Lack of PA space	11	35.5	11	35.5	5	16.1	4	12.9	2.06	1.03
Lack of time	10	32.3	14	45.2	4	12.9	3	9.7	2.00	0.93
Lack of value of PA	12	38.7	12	38.7	4	12.9	3	9.7	1.94	0.96
Lack of PA knowledge	9	29.1	18	58.1	4	12.9	0	0.0	1.84	0.64
Lack of PA equipment	15	48.4	12	38.7	4	12.9	0	0.0	1.65	0.71
Lack of a plan for PA	18	58.1	10	32.3	2	6.5	1	3.2	1.55	0.77
Lack of admin support	21	67.7	9	29.0	1	3.2	0	0.0	1.35	0.55

Survey Data Tables

Strategies to Improve PA

What Would Help PA	1		2		3		4		5		Mean	SD
	F	%	F	%	F	%	F	%	F	%		
Increased staff and volunteers	0	0.0	1	3.2	4	12.9	16	51.6	10	32.3	4.13	0.76
Increased facility funding	2	6.5	3	9.7	2	6.5	12	38.7	12	38.7	3.94	1.21
Support & interest from residents and families	1	3.2	1	3.2	8	25.8	10	32.3	11	35.5	3.94	1.03
Increased opportunities for outdoor PA	1	3.2	2	6.5	7	22.6	10	32.3	11	35.5	3.90	1.08
Improved PA programming	2	6.5	2	6.5	6	19.4	12	38.7	9	29.0	3.77	1.15
Designated space for PA	2	6.5	4	12.9	5	16.1	14	45.2	6	19.4	3.58	1.15
Increased staff PA training	1	3.2	4	12.9	10	32.3	9	29.0	7	22.6	3.55	1.09
PA Equipment	3	9.7	5	16.1	8	25.8	12	38.7	3	9.7	3.23	1.15
Administrative support	4	12.9	5	16.1	9	29.0	11	35.5	2	6.5	3.06	1.15

Why Rural Regions

- Higher percent of older adults live within rural regions
  - Estimated 10.6 million older adults living in rural areas[21]
- Increased risk for:
  - Chronic disease[5-7]
  - All-cause mortality[5-7]

Barriers to PA[22-27]

- Inadequate infrastructure
- Limited access to resources
- Insufficient transportation options
- Differences in cultural norms
- Policy challenges

Future Steps of What I Could Do

- Conduct a similar study with residents, families, and staff with validated measures
- Perform facility audits and objectively measure resident PA levels
- Explore differences in facilitators and barriers across states
- Design PA programming and training interventions for rural LTC facilities
- Advocacy: policies briefs and op-eds

References

1. AHR. America's Health Rankings analysis of CDC WONDER, Single-Race Population Estimates: Adults Ages 65+ in the United States. America's Health Rankings. Published 2021. Accessed June 1, 2023. https://www.americashealthrankings.org/explore/measures/pct_65plus
2. PAHO. Number of older adults with long-term care needs will triple by 2050, PAHO warns - PAHO/WHO | Pan American Health Organization. Published January 1, 2019. Accessed June 1, 2023. https://www.paho.org/en/news/1-1-2019-number-older-adults-long-term-care-needs-will-triple-2050-paho-warns
3. CDC. FastStats. Published December 15, 2022. Accessed June 1, 2023. https://www.cdc.gov/nchs/fastats/nursing-home-care.htm
4. Cunningham C, O' Sullivan R, Caserotti P, Tully MA. Consequences of physical inactivity in older adults: A systematic review of reviews and meta-analyses. *Scand J Med Sci Sports*. 2020;30(5):816-827. doi:10.1111/sms.13616
5. Warren M, Beck S, Lieberman D. *The State of Obesity: Better Policies for a Healthier America Special Feature: COVID-19, Social Determinants of Health, and Obesity*.; 2021:92.
6. Singh GK, Siahpush M. Widening Rural–Urban Disparities in All-Cause Mortality and Mortality from Major Causes of Death in the USA, 1969–2009. *J Urban Health*. 2014;91(2):272-292. doi:10.1007/s11524-013-9847-2
7. Schiller JS, Lucas JW, Ward BW, Peregoy JA. Summary health statistics for U.S. adults: National Health Interview Survey, 2010. *Vital Health Statistics*. 2012;10(252):1-207. doi:10.1037/e403882008-001
8. Scocco P, Rapattoni M, Fantoni G. Nursing home institutionalization: a source of eustress or distress for the elderly? *Int J Geriat Psychiatry*. 2006;21(3):281-287. doi:10.1002/gps.1453
9. Keadle SK, McKinnon R, Graubard BI, Troiano RP. Prevalence and trends in physical activity among older adults in the United States: A comparison across three national surveys. *Preventive Medicine*. 2016;89:37-43. doi:10.1016/j.ypmed.2016.05.009
10. Baert V, Gorus E, Calleeuw K, De Backer W, Bautmans I. An Administrator's Perspective on the Organization of Physical Activity for Older Adults in Long-Term Care Facilities. *Journal of the American Medical Directors Association*. 2016;17(1):75-84. doi:10.1016/j.jamda.2015.08.011
11. Benjamin K, Edwards N, Caswell W. Factors Influencing the Physical Activity of Older Adults in Long-Term Care: Administrators' Perspectives. *Journal of Aging and Physical Activity*. 2009;17(2):181-195. doi:10.1123/japa.17.2.181
12. Hanson HM, Hoppmann CA, Condon K, et al. Characterizing Social and Recreational Programming in Assisted Living. *Can J Aging*. 2014;33(3):285-295. doi:10.1017/S0714980814000178
13. Wasner MG, Rimmer JH. A Survey of Exercise Programs in Senior Living Facilities in the State of Illinois. *Journal of Aging and Physical Activity*. 1997;5(3):262-272. doi:10.1123/japa.5.3.262
14. Mahrs Träff A, Cedersund E, Abramsson M. What Promotes and What Limits Physical Activity in Assisted Living Facilities? A Study of the Physical Environment's Design and Significance. *Journal of Aging and Environment*. 2020;34(3):291-309. doi:10.1080/02763893.2019.1683669

References

15. Kerr J, Carlson JA, Sallis JF, et al. Assessing health-related resources in senior living residences. *Journal of Aging Studies*. 2011;25(3):206-214. doi:10.1016/j.jaging.2011.03.004
16. US Census Bureau. How Has Our Nation's Population Changed? Census.gov. Published May 25, 2023. Accessed September 14, 2023. https://www.census.gov/library/visualizations/interactive/how-has-our-nations-population-changed.html
17. Haselwandter EM, Corcoran MP, Folta SC, Hyatt R, Fenton M, Nelson ME. The Built Environment, Physical Activity, and Aging in the United States: A State of the Science Review. *Journal of Aging and Physical Activity*. 2015;23(2):323-329. doi:10.1123/japa.2013-0151
18. Sallis J, Cervero R, Ascher W, Henderson K. An Ecological Approach to Creating Active Living Communities. *ANNUAL REVIEW OF PUBLIC HEALTH*. 2006;27.
19. Braun V, Clarke V. Using thematic analysis in psychology. *Qualitative Research in Psychology*. 2006;3(2):77-101. doi:10.1191/1478088706qp063oa
20. Lincoln YS, Guba EG. *Naturalistic Inquiry*. SAGE; 1985.
21. Smith AS, Trevelyan E. The Older Population in Rural America: 2012-2016. Published online 2020.
22. Gustat J, Anderson CE, Chukwurah QC, Wallace ME, Broyles ST, Bazzano LA. Cross-sectional associations between the neighborhood built environment and physical activity in a rural setting: the Bogalusa Heart Study. *BMC Public Health*. 2020;20(1):1426. doi:10.1186/s12889-020-09509-4
23. Hansen AY, Umstattd Meyer MR, Lenardson JD, Hartley D. Built Environments and Active Living in Rural and Remote Areas: a Review of the Literature. *Curr Obes Rep*. 2015;4(4):484-493. doi:10.1007/s13679-015-0180-9
24. Kramer-Kostecka EN, Folk AL, Friend S, et al. A novel method to map community- and neighborhood-level access to rural physical activity built environments in the United States. *Preventive Medicine Reports*. 2022;30:102066. doi:10.1016/j.pmedr.2022.102066
25. McWhinney S, McDonald A, Dawkins-Moultin L, Outley C, McKyer EL, Thomas A. Barriers Affecting Physical Activity in Rural Communities: Perceptions of Parents and Children. *Journal of Family and Consumer Sciences*. 2011;103(4):38-44.
26. Barnidge EK, Radvanyi C, Duggan K, et al. Understanding and Addressing Barriers to Implementation of Environmental and Policy Interventions to Support Physical Activity and Healthy Eating in Rural Communities. *The Journal of Rural Health*. 2013;29(1):97-105. doi:10.1111/j.1748-0361.2012.00431.x
27. Lo BK, Morgan EH, Folta SC, et al. Environmental Influences on Physical Activity among Rural Adults in Montana, United States: Views from Built Environment Audits, Resident Focus Groups, and Key Informant Interviews. *Int J Environ Res Public Health*. 2017;14(10):1173. doi:10.3390/ijerph14101173