Social network changes associated with group activity programming using nature-focused livecam broadcasts in assisted living

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Online Engagement with Nature



• Since COVID-19, online resources are increasingly used in AL for economical and quarantine-resistant group activity content (Rodrigues et al., 2022)

Xa

- Online engagement with nature helps people who cannot experience nature directly still reap the benefits of nature (Darcy et al., 2022; Yeo et al., 2020)
- Online engagement with nature is associated with enhanced prosocial behaviors or attitudes that can lead to increased social connectedness (van Houwelingen-Snippe et al., 2020)
 - Can be a social experience when people:
 - Share same physical space/equipment (Darcy et al., 2022)
 - Receive help from others to use technology (Darcy et al., 2022)
 - Connect virtually with other online users on a platform (Mauldin et al., 2024a)



Nature-Focused Livecam Broadcasts

Current Study

The benefits of viewing naturefocused livestreams provided the rationale for using them in group activities in assisted living (i.e., the *RASCALs* program)

RQ: How do co-resident social networks differ for residents receiving *RASCALs* programming compared to those who do not?



Methods

Research Overview

- Quasi-experiment with pretest and posttest
- Intervention (*RASCALs*) delivered twice/week for 3 months (January to April 2023) in the experimental group "houses" for a total of 21 sessions
- RASCALs replaced the regular group activity on the day's schedule for the experimental group houses
- Otherwise, and in the comparison group, activities continued as usual
- Field notes





The Intervention



RASCALs: Reinforcing and Advancing Social Connectedness in Assisted Living

- This pilot study used Days at Dunrovin platform
 - daysatdunrovin.com
- Session ≈ 45 minutes
- Included flyers introducing content, viewing livecam broadcasts, viewing video archives with reminiscence, and live broadcasts (Mauldin et al., 2024b)





About the Ranch

Dunrovin Ranch is in Lolo, Montana, nestled along the beautiful Bitterroot River, between two mountain ranges, just 8 miles south of Missoula, home to the University of Montana.



Owners SuzAnne and Sterling Miller officially opened Dunrovin Ranch in 2005, and since then, thousands of people from all over the world have come and gone, enriching the ranch in many ways. Special events, joyous weddings, theatrical performances, wildfires in the mountains with firefighters harbored in the ranch's pastures, wild horses in the mountains, the river's flooding and freezing, late spring storms, horseback riding lessons, brilliant autumn colors, and fascination with the ospreys have all punctuated the years.



With four web cameras that stream live 24/7, Dunrovin Ranch documents a plethora of activities year-round. Webcam viewing can run the gamut from soothing sunsets to live interactive trail rides, to osprey eggs hatching. We throw in some donkey shenanigans (or rather THEY do) and we offer a variety of planned, participatory programs to lure you into joining us so we can get to know one another.







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Site & Participants

- Assisted living community in North Texas
 - Beehive model with 4 assisted living "houses"
 - Experimental group 2 houses
 - Comparison group 2 houses
- Eligibility living in one of the four assisted living houses
- 58% of residents enrolled in the study
- Non-participants in experimental houses could attend *RASCALs*
- Amazon gift cards for completing baseline pretest (\$20) and posttest (\$10)



DVs: Social Network Measures

- Roster with names and photographs of residents were provided
 - <u>Acquaintances</u>: "Look over this list of other residents and circle (or highlight) the names of the **people you** *know*."
 - <u>Socializing partners</u>: "Do you spend time interacting or socializing with [Resident] in a given week, beyond just passing by or saying hello?" (Schafer 2011, 2016)
 - <u>Confidants</u>: "From time to time, people will often talk with others about things that are important to them. This could include sharing good news, or bad news, sharing about concerns they might have, or otherwise just talking about things they find very important or significant. Is [Resident] someone that you can talk to about things that are important to you?" (Schafer, 2015)



Social Network Measures

If socialize or confidant:

- Closeness
 - How close are you to [name]?
 - 1 = Not very close
 - 2 = Sort of close
 - 3 = Very close
- Frequency of interaction
 - \circ $\,$ How often do you talk to this person?
 - 1 = Hardly ever
 - 2 = Occasionally
 - 3 = Often

(PhenX Toolkit, 2022,2024)

Control Variables

- Residential stability within a house
 - Jaccard index = $N_{11}/(N_{10} + N_{01} + N_{11})$
- Number of sessions attended
 - Attendance taken by facilitators



Analyses



Social networks within house constructed using directed ties

Binary networks: $x_{ij} = 0$ or $x_{ij} = 1$ Valued networks: 0 to 3



Analyses



Social networks within house constructed using directed ties

Binary networks: $x_{ij} = 0$ or $x_{ij} = 1$ Valued networks: 0 to 3



Ego network statistics calculated

Ego network size

Ego network density

Average ego network closeness and frequency of interaction (1-3)



Analyses



Social networks within house constructed using directed ties Ego network statistics (DVs) calculated

Binary networks: $x_{ij} = 0$ or $x_{ij} = 1$ Valued networks: 0 to 3 Ego network density Average ego network closeness and frequency of interaction (1-3)

Ego network size



Series of multiple regression models

DVs = posttest ego network statistics

IV = group

Control variables = corresponding network statistic at pretest; egonet size (for egonet density only), Jaccard index, number of sessions attended

For significance, α set at .10, adjusted for multiple tests to α = .05 (Lyderson, 2021)



Results

Sample Demographics N = 39

51%--experimental group 49%--comparison group • Age 60-93; M = 81 years old (SD = 8.4 years)

- 70% female
- 54% White; 31% Black/African American; 8% Hispanic/Latine; 3% American Indian/Alaskan Native or Middle Eastern/North African respectively
- 38% married; 39% widowed; 10% divorced; 8% single/never married; 3% separated
- 49% high school education or less; 31% some college; 18% graduate degree



Sample: Key Study Variables at Baseline

- Acquaintance Ego Networks
 - Average Size = 6.65 people (SD = 2.9)
 - Average Density = .67 (*SD* = .19)
- Socializing Partners Ego Networks
 - Average Size = 2.8 people (SD = 2.0)
 - Average Density = .28 (*SD* = .27)
 - Average Closeness = 1.8 (SD = .61)
 - Average Frequency = 2.1 (SD = .62)
- Confidant Ego Networks
 - Average Size = 1.8 people (SD = 2.1)
 - Average Density = .17 (*SD* = .24)
 - Average Closeness = 1.4 (SD = .99)
 - Average Frequency = 1.8 (*SD* = .97)

Quasi-Experimental Findings

Note:

- Attendance among experimental group
 - Range = 0 21 sessions
 - *M* = 11.3; *SD* = 8.5
- Jaccard index
 - *M* = .587 (experimental houses)
 - *M* = .618 (comparison houses)
 - t(37) = 1.545, *p* = .131





Acquaintances

- Controlling for ego networks at baseline:
 - No group differences in size or density of posttest ego networks
 - More frequent attendees had larger (β = .806; p = .003) and denser (β = .893; p = .006) ego networks



Socializing Partners

- Controlling for ego networks at baseline:
 - No significant differences in ego network size or density
 - Experimental group had *less* average closeness ($\beta = -.809$; p = <.001) with their socializing partners.
 - Those who attended more sessions had *higher* average closeness (β = .832; p = <.001) with their socializing partners



Confidants

- Controlling for ego networks at baseline:
 - No significant differences by group or attendance



Discussion

- RASCALs attendance seems to be associated with increases in "weak ties" (i.e., acquaintances), which can be beneficial for older adults (Greenfield & Reyes, 2015; Huxhold et al, 2020)
- The three-month program duration may have been too short to see positive changes in the number of the more involved or intimate social relationship types (i.e., socializing, confidants)
- Small sample and house-level anomalies may relate to negative experimental group findings for closeness with socializing partners
 - Interpersonal conflict in one of the experimental houses and (seemingly as a result) many research participants did not attend any sessions;

Limitations and Future Directions

- Small sample
- Lack of random assignment to group
- High levels of cognitive support needs made it difficult for participants to recognize nonparticipants on the roster because they did not provide photographs, so ego network measurement may be biased
- Future research using larger sample and true experimental design to examine the effects of *RASCALs*
- Longer-term study may be able to detect changes in relationships that may take longer to develop



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Date/Time Location	Туре	Presentation
Thursday, 10 am Room 612	Symposium paper	Social network changes associated with group activity programming using nature-focused livecam broadcasts in assisted living
Saturday, 2-3:15 Exhibit Hall 4AB	Poster – Anna Tulloh	Using the interpretive framework to create and deliver meaningful group activities for older adults.
Saturday, 3:30 Room 213	Symposium paper – Keith Anderson	Feasibility of a virtual care farm for older adults with cognitive and physical limitations

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