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## Using Simulated Family Presence to Decrease Agitation in Hospitalized Delirious Patients

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### The Problem

- Delirium is a serious and common medical condition affecting hospitalized patients.
- Delirious patients often display agitated behavior.
- Agitated behaviors can be detrimental to patients and increase healthcare costs.



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### The Purpose

- The purpose of this study is to examine the effect of a family video message on the agitation level of hospitalized, delirious, acutely agitated patients
- Video messaging = simulated family presence= pre-recorded video message one minute in length featuring family offering verbal reassurance and familiar information to their loved one
- Shown to patient on a lap top computer at the bedside during an episode of agitated delirium



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### Example of Family Video Message



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### Research Questions

- Is there a significant difference in agitation levels in hospitalized patients experiencing hyperactive or mixed delirium before, during, immediately after and 30 minutes after viewing a personalized family video, a nature video or usual care?
- What are the patient and family responses to the videos?



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### Review of the Literature/Background

- Delirium treated with medications and/or physical restraints often leads to **complications** like falls, aspiration, and functional decline.
- **Non-pharmacological interventions** and family involvement are evidence based strategies to improve outcomes for persons with delirium.
- **Simulated family presence with video** is effective in decreasing agitation in persons with dementia in long term care settings.
- **Pilot work** has shown a decrease in agitation in hospitalized delirious patients with family intervention and simulated family presence via video.



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### Theoretical Framework

#### • Embodied Social Presence Theory

Presence is embodied virtually  
Co-presence is established  
Goal directed activity  
Cognitive engagement  
Satisfaction

#### • Application of Theory

Family present in video  
Patient accepts family presence in video  
Patient watches video  
Patient engages  
Patient feels calm



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### Setting

- 850 bed inner city level one trauma center hospital
- Patients located on any inpatient unit (medical/surgical/ICU/step down)



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### Sample

- **Target population** : All hospitalized patients experiencing hyperactive or mixed delirium
- **Accessible population**: All hospitalized patients assigned to continuous observation for behavioral reasons (suicide excluded) n=422
- **Eligible participants** : age 18+; CAM+; RASS>0; English speaking family member willing to visit; free of severe hearing or vision loss; not experiencing substance withdrawal, exacerbation of a psychiatric disorder or terminal illness n=136
- Consecutive sampling 7/1/15- 3/2/16 Total enrolled = 126
- Block randomization to one of the 3 interventions
- Family video n=42 Nature video n=42 Usual care n=42  
(Thouye et al, 1990, Annals of Internal Medicine; Sessler et al, 2002, American Journal of Respiratory Critical care Medicine)



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## Measures

### Independent Variables

- 3 levels of intervention
  - Family video (1 min)+ usual care
  - Nature video (1 min) + usual care
  - Usual care

### Dependent Variables

- ABS (agitation score)
- Participant's verbal or non-verbal response to viewing video
- Family's verbal or non-verbal response to creating video



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## Research Design

Randomized Control Trial

Three group X 4 time points mixed factorial design

	T1	T2	T3	T4
<b>Family Video</b>	0	X	0	0
<b>Nature Video</b>	0	X	0	0
<b>Usual Care</b>	0	X	0	0



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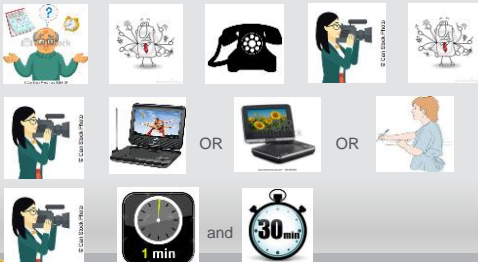
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## Methodology Time Line



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**Rating of Agitation- ABS Score** (Corrigan, 1989, Journal of Clinical and Experimental Psychology, 11, 261-277.)

- 14 behaviors (1-4) possible range = 14-56
- Watched and rated the 4 videos for each subject (pre/during/post/30 minutes post)
- Blinded to the type of intervention
- Blinded to the time period being observed
- Same rater for all participants




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**Results**

- n=126 enrolled and randomized
- n=111 completed the intervention
  - 34 family video
  - 40 nature video
  - 37 usual care

- Age and ABS scores were not normally distributed >use of non-parametric statistics
- No significant difference in baseline characteristics among the 126 enrolled, the 111 who completed and the 15 who did not complete the intervention
- No significant difference in baseline characteristics among those assigned to the family video, nature video and usual care groups

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**Results**

- Patient Participant**
- Median age 79 (range 19-99)
  - Male 53.2%
  - Caucasian 82.9%
  - No spouse (single/divorced/widowed) 60.4%
  - Internal source of delirium 73%
  - Medical admission 79.3%
  - Non-ICU 78.4%
  - Not under the effect of a behavioral med 79.3%

- Family Participant**
- 56 family members participated in 42 videos:
    - 76% featured adult children
    - 29% featured spouse
    - 15.5% featured other family
  - 45 family members appeared in the 34 videos shown:
    - 76.5% featured adult children
    - 41.2% spouse
    - 23.5% other family

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### Analysis

- Multiple non-parametric tests needed to be run on the same data to answer the research questions
- Friedman Test: within group differences (ABS)
- Kruskal-Wallis: among group differences (ABS)
- Wilcoxon Ranked Sum: between group differences (ABS)
- Pearson Chi-Square: between and among group differences (proportion/percentage)
- Bonferroni correction was applied to keep the overall alpha at .05 while setting the alpha to .0125 for each individual test.



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### Findings

- The family video and nature video groups displayed a significant change in agitation scores over the 4 time periods ( $p < .001$ ;  $p < .001$ ) where the control group did not ( $p < .042$ )
- There is a significant difference among the 3 groups during the intervention period with the family video group displaying the lowest agitation scores ( $p < .001$ )



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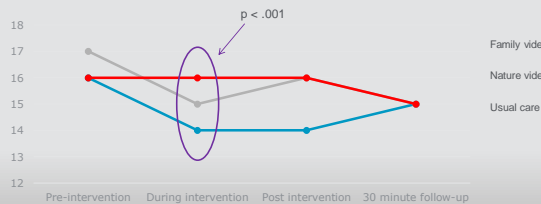
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### Median ABS scores per group at each time point



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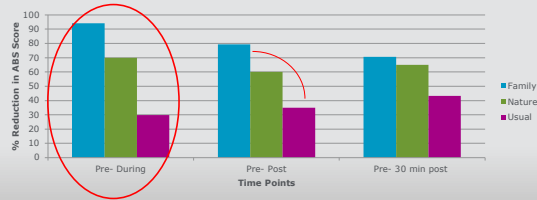
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### % of Participants Experiencing a Decrease in Agitation



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### Additional Findings:

- The majority of the participants displayed a positive or neutral response to both the family and nature video.
- The family members were generally open to creating the family video. The majority (86%) of the family videos in this study were rated as having positive content



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### Conclusions

- Hyperactive delirious patients can acknowledge and attend to a video.
- Patients in the video groups showed significant decrease in agitation over the 30 minute time period.
- Patients shown a video had lower agitation scores during the intervention period than the control group
- Patients shown the family video showed significantly greater decrease in agitation during and immediately following the intervention than those shown the nature video
- The significant effect of the videos was not present at 30 minutes



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### Practice Implications

- Implement Simulated Family Presence in hospitals to decrease agitation in patients with hyperactive or mixed delirium
- Consider the use of a nature video as an alternative intervention if creating a family video is not possible



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### Future Research

- Can videos be used to prevent delirium in high risk patients?
- Does the intermittent showing of a one minute video (every 15 minutes while awake) decrease and sustain decreased agitation levels in hospitalized delirious patients?
- What is the effect of making and using a family video on the stress level of the family?



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### Thank You

- Questions or Comments Welcome



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