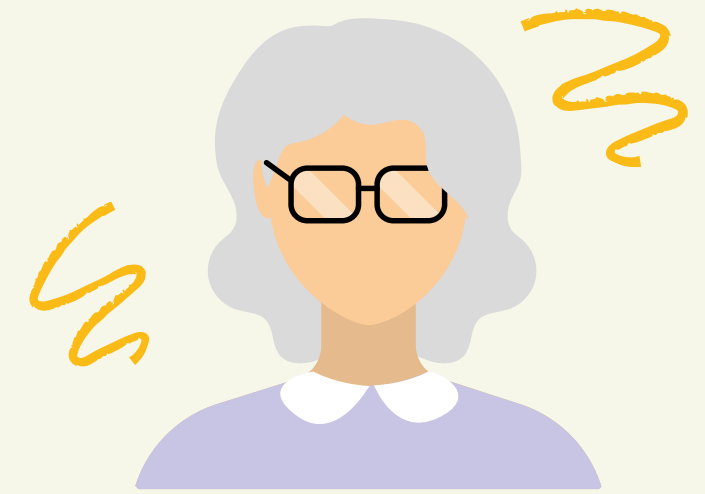# IMPLEMENTATION OF TECHNOLOGY IN NURSING HOMES TO COMBAT PSYCHOSOCIAL EFFECTS OF COVID-19

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## ABSTRACT

Nursing home residents have experienced unique social and emotional challenges due to their increased vulnerability to the COVID-19 virus. According to the CDC, more than 81% of COVID-19 deaths occur in people over age of 65, and the number of deaths among this population is 97 times higher than people ages 18-29 years (1). Therefore, it is essential to implement significant isolation measures in nursing homes to reduce the chances of exposure. While isolation is the best way to keep these individuals safe, there is evidence of negative social and psychological effects. Current research links social isolation to poor physical and mental health, including reduced lifespan and greater prevalence of anxiety and depression. Technological developments have aided in reducing the severity of social isolation and allowed the country to operate during the pandemic. In addition to uncovering the social and psychological effects of COVID-19 in this population, we explore how the implementation of technology may reduce the negative effects of social isolation on nursing home residents. The use of video-calling technology in nursing homes provides a sense of independence, empowerment, and an improvement in health and quality of life, which is essential during a time of fear and social isolation.

## EFFECTS OF COVID IN NURSING HOMES

- There was a major shortage of rooms in nursing homes which contributed to the spread of COVID-19 and worsened mental health.
- Another major effect was nursing homes being severely short-staffed and staff not having the proper PPE.
- Researchers believe that increased social isolation escalated the mental health crisis that has greatly impacted residents with Alzheimer's disease (AD) and AD-related dementia.
- Effects have also been seen in the families of the residents, as they were not able to stay up-to-date with information about their family members and were found to have difficulty staying engaged which contributed to the worsening mental health of the residents (4).
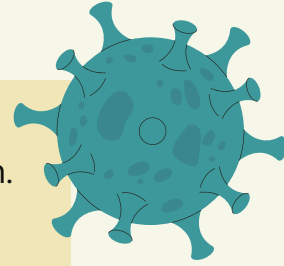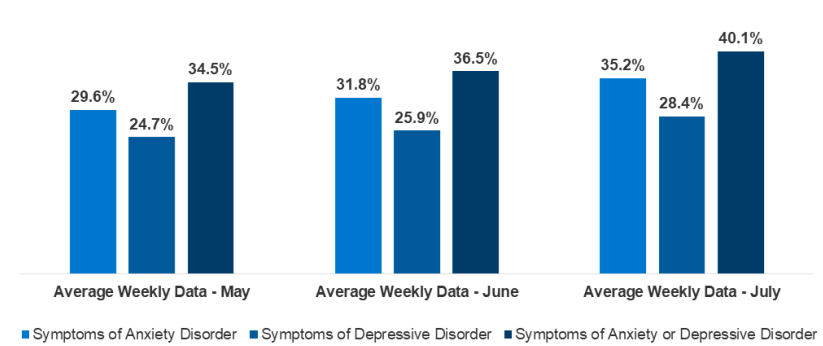
Figure 1

Average Share of Adults Reporting Symptoms of Anxiety or Depressive Disorder During the COVID-19 Pandemic, May-July 2020

| Average Weekly Data - May | Average Weekly Data - June | Average Weekly Data - July |
|---|---|---|
| 29.6% | 31.8% | 35.2% |
| 24.7% | 25.9% | 28.4% |
| 34.5% | 36.5% | 40.1% |

■ Symptoms of Anxiety Disorder  ■ Symptoms of Depressive Disorder  ■ Symptoms of Anxiety or Depressive Disorder

NOTES: These adults, ages 18+, have symptoms of anxiety or depressive disorder that generally occur more than half the days or nearly every day. Data presented for "symptoms of anxiety or depressive disorder" also includes adults with symptoms of both anxiety and depressive disorder. Data presented for May is the average of the following weeks of data: May 7-12, May 14-19, May 21-26, May 28- June 2; for June, data is the average of June 4-9, June 11-16, June 18-23, and June 25-30; for July, data is the average of July 2-7, July 9-14, and July 16-21 (last week of published data).
SOURCE: U.S. Census Bureau, Household Pulse Survey, 2020.

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## ETHICAL CONSIDERATIONS OF ISOLATING NURSING HOME RESIDENTS

- **Autonomy**: The ethical consideration here is whether or not it is better to respect the resident's autonomy and support either their physical well-being or mental well-being, depending on which they choose to prioritize.
- **Nonmaleficence & Beneficence**: Similar to the ethical considerations surrounding autonomy, it comes down to the choice between physical or mental wellness. In each scenario, you still put the resident at risk of harm.
- Implementing technology in nursing homes would address each of these ethical considerations by allowing for physical isolation as well as social interaction via screen time, providing a sense of empowerment and control.

## CASE STUDY (95 Y/O MARY O'REILLY)

Nursing home resident Mary O'Reilly suffers from dementia and tested positive for COVID-19 but presented as asymptomatic (3). Due to isolation measures, staff would not allow Mary to see her family and she could not understand why. She questioned her family as to why they were not visiting her, and eventually lost interest in keeping up with her children as she felt abandoned and confused. Mary's family was concerned because the nursing home did not communicate well about her illness or how the lack of social interaction with her family was affecting her.

## EFFECTS OF TECHNOLOGY TO ENHANCE QUALITY OF LIFE

- Information and Communication Technologies (ICTs) have been found to have a positive impact on older adults' health and quality of life by decreasing depression and loneliness.
- It has also proven to increase participation in activities, boost self-confidence and increase empowerment of independent life.

## LLM CARE INTERACTIVE SOFTWARE STUDY

- **Purpose:**
  - Promote cognitive gaming exercises in the weekly routine of nursing home residents using an interactive software to improve quality of life.
- **Interactive Software – BrainHQ**
  - BrainHQ designed with more than 29 cognitive game-based exercises in a personalized environment focusing on attention, brain speed, people skills, navigation, and intelligence
- **Guidelines used for COVID-19:**
  - "Beneficiaries' COVID-19 Self-Management Guide"
  - "Associating Entities' COVID-19 Management Guide

- **Result:**
  - Participants with improved well-being tended to report decreased subjective distress caused by COVID-19.
- **Conclusion:**
  - Nursing home residents' engagement with technology can potentially minimize the negative outcomes of COVID-19, as well as mitigate the symptoms of depression, anxiety, and loneliness.
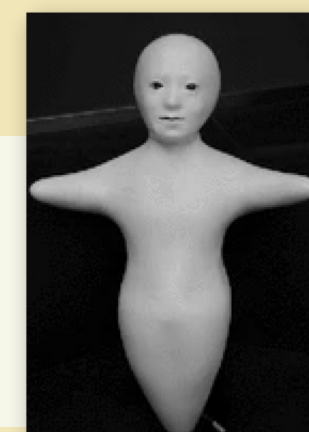
## VIDEO CALL TECHNOLOGY – A FOCUS GROUP STUDY

- **"Skype-on-Wheels"** (SoW) is a simple mobile device comprising of an iPad and a telephone handset that users can utilize to socialize with others regardless of distance.
- Elderly individuals often hold negative attitudes toward technology due to their lack of experience utilizing it.
- **Purpose:**
  - Researchers hypothesized whether allowing residents to decorate their SoW device would lead to greater acceptance of the device and increase usage.
- **Results:**
  - "Dressing up" the SoW device improved resident's understanding of the technology, reduced fear of the device, and increased level of usage among patients with and without dementia (8).

## TECHNOLOGY OF THE FUTURE

- A case study was performed that explored the usage of the **Telenoid**, a telecommunication device with human-like appearance, as a way of reducing social isolation.
- The study showed positive attitudes towards the Telenoid in which the participants engaged in meaningful conversation and physical touch (7).
- It was noted that interaction with the Telenoid reduced feelings of loneliness and improved positive affect among the test subjects.

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