Therapy Dogs or Robots for Nursing Home Residents?

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A new study compares the impact of robots and therapy dogs in nursing homes.

When they were in their mid-80s, my parents wanted to be closer to their grown kids and grandchildren so they moved from their home in rural upstate New York to a retirement community outside of Seattle. The facility was terrific, and animals figured prominently among the amenities. A cockatiel held court in a large sunny atrium, and a session with a therapy dog was often the highlight of my mom and dad’s day. But would a robot have been just as fun for them to hang out with?

Animal visitation programs are now standard in many retirement communities and assisted living facilities. Given their popularity, however, we know surprisingly little about their impact. Many studies on animal-assisted interventions in nursing homes are methodologically weak and have produced inconsistent results. That’s why a new study by Dr. Karen Thodberg and her colleagues at the University of Aarhus in Denmark is important.

"Animal" Assisted Activities With Dogs, Robots, and Toys

Their project was ambitious. It involved 100 individuals residing in four nursing homes in Denmark. The participants were, on average, 85 years old, and 30% of them were diagnosed with some form of dementia.

The residents in each of the nursing homes were randomly assigned to one of three "animal" visitation conditions.

- The therapy dog group – The therapy dogs were Labs, Golden Retrievers or crosses. Residents interacted with the same dog on each visit.

- The robot group – Individuals in this group socialized with PARO, a sophisticated robot that resembles those adorable big-eye baby seals you sometimes see on animal protection brochures. PARO was developed in Japan expressly for people with dementia. These fake seals move, respond to touch and sounds, and can move their flippers, blink their eyes, and make funny noises.

- The toy group – “Billie the Cat” is a cute soft doll which, like PARO, was developed to comfort people with special needs. But unlike PARO, Tom is inert. He just sits.

The researchers addressed two sets of questions. The first focused on the immediate effects of animal visitations – how nursing home residents interact with a real dog as compared to an
interactive robotic pet or a cuddly stuffed animal. The second was related to the long-term impact of the visitations -- do regular interactions with real or fake animals actually improve the psychological well-being and cognitive abilities of nursing home residents?

**Fake and Real Animal Visitations**

Each resident was visited twice a week for six weeks by an “animal” and its handler. The visits took place in the residents’ rooms. An observer was also in the room to record behaviors during the sessions. Each visit lasted 10 minutes, and the residents were encouraged to interact with, touch, and talk to or about the animal as they wished. To examine how the participants interacted with real versus fake animals, the researchers recorded variables such as the frequency and duration of talking, petting, and making eye-contact with the real dogs and the fake animals.

To examine the long term impact of the visits, the residents were given psychiatric evaluations before the start of the study and at the end of the study six weeks later. These included assessments of their cognitive status and dementia, their ability to handle activities of daily living, and levels of depression, confusion and delirium. Finally, because disturbed sleep is associated with declines in cognitive abilities, the researchers obtained measures of the quality of the residents’ sleep before the study began, and again after three and six weeks and a week after the study was over.

Karen first told me about the study at a meeting of the International Society for Anthrozoology a couple of years ago. I was intrigued, but it was too early to write about the research as it had not yet been submitted to an academic journal. The team now has two papers in the publication pipeline. Here is what they found.

**The Good News**

The findings on how the nursing home residents interacted with the real versus fake animals will appear in a forthcoming issue of the journal *Anthrozoos*. Here is how Karen summarized the results to me in an e-mail. "There were not very big differences in responses to the dog and the robot at first. The residents touched, talked and looked more at both the robot and the dog compared to the toy cat. But over time, the probability and duration of talking to and about the animals, and the likelihood of looking at the animals decreased for the robot and the toy cat, whereas it was constant for the dog."

This trend is illustrated in this graph which shows the probability of talking to therapy dog (red), PARO (blue), and Billy the Cat (green). While initially high, utterances directed to PARO consistently declined. In contrast, most of the residents continued to talk to the dogs throughout the course of the study. (Women, by the way, talked more to the animals than the men did.)
One of the most interesting findings of the study concerned differences between high functioning residents and those with dementia. As you can see in the graph below, the more cognitively impaired participants talked more to both the real and the fake animals. The higher functioning residents, on the other hand, tended to direct their conversations to the humans in the room rather than the animals.

The Bad News

The results on the long-term impact of interacting with therapy animals were recently published in the journal Psychogeriatrics. They can be summarized in one sentence. There were no
measurable benefits of six weeks of interactions with either fake or real therapy animals. Even the therapy dogs had no impact on the cognitive abilities of the residents or their level of depression or their psychiatric symptoms or their ability to function in everyday life. (The residents in the therapy dog group did sleep better for a little while, but this effect did not persist beyond two weeks.)

**Why Is This Research Important?**

The Danish research team's study is the first large randomized control study of the impact of animal visitations on people living in nursing homes. Methodologically, the study had a lot going for it – a reasonably large sample size, random assignment of participants to the real and fake animal conditions, multiple research sites, and objective behavioral measures.

The results are important. The researchers found when it comes to the impact of animal-assisted interventions on social interactions, real dogs are better than robots. However, the fake animals did help individuals with severe cognitive impairments get out of their shells during the visits. This suggests that PAROs might play useful role in facilities for individuals with dementia.

On the other hand, while interacting with animals produced a temporary pick-me-up for nursing home residents, even regular sessions with a friendly therapy dog did not produce remissions in depression or relieve the soul-stealing impact of forms of dementia such as Alzheimer’s disease.

The bottom line is that the researchers did demonstrate that over the long haul, dog visitations do brighten the days of people living in assisted living facilities in ways that robotic pets cannot. My mom and dad would certainly have agreed.

**References:**


Thodberg, K., et. al. (in press) Behavioral responses of nursing home residents to visits from a person with a dog, a robot seal, or a toy cat. Anthrozoos.