



CAREGIVING

Patients Respond To Aquariums

A sneak peek at a new study reveals that fish tanks placed in dining areas can help improve nutritional intake in people with Alzheimer's

NANCY E. EDWARDS AND ALAN M. BECK

wards and Beck (2002).

Although a number of studies have been conducted looking at the reasons for weight loss, no study to date had examined the benefit of the interaction between animals and patients in preventing weight loss. Most animal studies involving patients with AD have utilized dogs and cats. But this presents difficulties in providing for the safety of both the animals and the patients and requires that the animals be under constant supervision.

Aquariums stocked with colorful fish, on the other hand, offer a unique opportunity to introduce the presence of animals, and hence nature, while providing a safe environment for both the fish and the patients. If properly secured, the tanks prevent any physical interaction between patients and fish, yet allow the patients to see and feel the presence of nature.

In the study, researchers introduced specially designed aquariums into dementia-specific units at three long term care settings. The idea was to determine the effect of the fish tanks on nutritional intake. Patients with AD tend to have one of two problems in regard to nutritional intake. On one hand, some patients are restless and pace or wander and are unable to sit still long enough to consume an adequate diet. Some patients, on the other hand, tend toward lethargy and are unable to stay alert enough to eat an adequate meal.

Researchers examined the effect of aquariums on nutritional intake of 62 patients with AD, with intake measured by weighing the food before and after each of the patients ate their meals. Baseline data were collected for all three meals for two weeks before the aquariums were intro-

duced.

Following the baseline data collection period, researchers placed the fish tanks in the activity or dining areas of the facilities in clear view of the patients. Nutritional intake was measured daily for an additional two weeks and then weekly for six weeks.

Researchers analyzed the influence of the aquariums on the treatment group by comparing the nutritional intake for the two-week baseline period with the two weeks after the introduction of the tanks. The results were interesting in that participating patients at all three facilities experienced a significant increase in nutritional intake—an average of 21.2 percent—in the presence of the aquariums. Even more interesting is that the nutritional intake continued to rise during the following six weeks, when weekly measures were taken.

Individual patients also showed an increase in nutritional intake. Fifty-four of the 62 patients had experienced a weight loss in the three months prior to the introduction of the aquarium. At the completion of the study, researchers noted that the patients had experienced a significant weight increase, with a mean increase of 1.65 pounds over a four-month period. While simply maintaining weight is a significant milestone for patients with AD, gaining weight overall is an astounding result.

Benefits To Patients, Facilities

Increasing nutritional intake in individuals with AD can have numerous positive implications for health care facilities. Maintaining nutrition helps prevent muscle wasting, which often leads to weakness, immobility, and a loss of functional independence. Decreased nutrition has been associated with orthostatic hypoten-

The relationship between Alzheimer's disease (AD) and weight loss has been well documented over the past two decades. In one study, reported by Donaldson and associates (1996), energy malnutrition, wasting, and low body weight were found in approximately 50 percent of older adults with AD. Weight loss is so common in individuals with AD that it was listed as a symptom consistent with the diagnosis by the National Institute of Neurological and Communicative Disorders and Stroke/Alzheimer's Disease and Related Disorders Association Work Group as far back as 1984.

Weight loss in individuals with AD has been shown to impact their health. White and associates (1998) found that weight—and, in particular, weight loss—is a strong predictor of mortality in AD cases. They also found that the risk of mortality and morbidity was decreased and the progression of the disease slowed with a gain in weight. Therefore, it is important to examine interventions that promote nutritional intake in an attempt to offset weight loss and its accompanying malnutrition.

A Natural Stimulant

A new study has looked at the influence of aquariums on the nutritional intake of patients with AD. The underlying assumption of the study was that nature and contact with natural surroundings reduce stress in individuals with AD and could influence food intake, according to Ed-

Special Considerations For Fish Tank Use

Aquariums used in long term care settings must be able to meet the rigors of the wear and tear that they will receive. Stability of the aquarium and ease of care are two considerations that should guide a caregiver's choice. The self-contained aquariums used in the study were specifically designed for use in long term care settings. The aquariums were set on large, wide wooden bases for stability, and the water units were secured with a key lock to keep patients from interfering with the fish

habitat and to prevent water from inadvertently splashing from the tank. Additionally, the units had automatic feeders that were set to distribute fish food into the tanks around the patients' mealtimes to increase fish activity. The viewing area was large, at 20 by 30 inches, and set at eye level to facilitate patient interaction with the fish. The lighted background was specially designed to make it easy to pick out contrasting fish and to ease patient viewing. Eight large brightly colored fish were placed in each tank.

sion that contributes significantly to falls. In addition, prevention of infections, pressure ulcers, and sepsis and promotion of wound healing are all noted benefits of adequate nutrition.

Aquariums in dementia-specific units have other benefits for patients. The presence of aquariums enriches an environment that can sometimes be too sterile. The movement of brightly colored fish adds novelty to the setting and can be incorporated into recreational activities. This study demonstrated that the aquariums held the interest of patients with AD.

Another benefit the researchers noted was a decrease in the use of nutritional supplements. Use of supplements to help patients with AD maintain weight and prevent weight loss is common in long term care facilities. Supplements, however, can be costly, especially in instances where much of the product is discarded because patients only consume small amounts. Many facilities have a policy that nutritional supplements be given if patients consume less than 50 percent of their meals. With this policy, increasing nutritional intake during mealtime may lead to a decrease in nutritional supple-

ment use. Use of nutritional supplements over the course of the study decreased approximately 25 percent with the presence of the aquariums. This reduction could result in significant cost savings to facilities, since the cost of supplements is not a reimbursable expense. It is even feasible that the cost savings could easily cover expenses associated with the aquariums over a relatively short period of time. Eating real food as opposed to supplements also stimulates patients with a variety of tastes and textures.

Unanticipated Benefits

Researchers also noted two unanticipated benefits during the aquarium study: The aquariums served both as a focal point from which family members could start conversations and as an instrument to encourage patients to reminisce. Often, family members, especially younger members like grandchildren, find it difficult to communicate with patients with dementia. The aquariums offered a topic that family members felt comfortable talking about and provided an additional source of sensory stimulation for the relative with AD.

The aquariums were also integral in serving as a reminiscence facilitator. One patient in the study who communicated very little was observing the fish in the aquarium and spoke up, "Fish Lady, are there six fish or eight fish?" It was amazing that this woman could even verbalize to that extent, let alone count the number

of fish, which was eight. In another incident, the fish intrigued an older individual who used to manage a bait shop. The fish were used to stimulate conversation as he reported the appropriate bait to be used to catch a particular type of fish.

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Nancy E. Edwards, Ph.D., RN.C, is an assistant professor at Purdue University School of Nursing, West Lafayette, Ind. Alan M. Beck, Sc.D., is a professor in Purdue University's Department of Veterinary Pathobiology and is the director of the Center for Human-Animal Bond.

Alzheimer's Drug Research Continues

Two recent studies have examined drugs that may significantly delay the progress of Alzheimer's disease. One is targeted toward patients whose disease is in the advanced stage, and a third study, performed using mice, indicates that a certain antibody may actually reverse memory loss in patients with Alzheimer's.

In the first case, a team of researchers from the Pittsburgh School of Medicine studied 135 patients presumed to have Alzheimer's who had taken a cholinesterase inhibitor (similar to drugs used for patients with high cholesterol) for an average of three years. The data were compared with those of patients with Alzheimer's disease who had never taken the drug.

The study, which was published in the *Journal of Neurology, Neurosurgery, and Psychiatry*, found that patients receiving the cholinesterase inhibitors had a slower decline of mental function during the first year and retained a greater ability to engage in activities of daily living. Forty percent of those taking the drug were admitted to a nursing facility, compared with 60 percent of those not taking it. Cholinesterase inhibitors are the first class of medication approved by the U.S. Food and Drug Administration (FDA) for treating illnesses involving memory decline.

The second drug study, conducted by

For More Information

■ The full aquarium study and its results will be published in the *Western Journal of Nursing Research* in October 2002.

researchers at the William and Silvia Silverstein Aging and Dementia Research Center at the New York University School of Medicine, tested a drug called Memantine. The drug has been successfully used in Germany for more than a decade to slow memory loss among patients in the advanced stages of Alzheimer's, and it was recently recommended for approval by the European Union's equivalent of the U.S. Food and Drug Administration.

The most severe stage of Alzheimer's can also be the longest lasting. However, researchers of Memantine have found that patients taking the drug deteriorated one-half to one-third more slowly than those taking a placebo. Slowing the rate of decline at advanced stages can mean that patients may be able to dress or bathe themselves or remain continent for longer, improving their quality of life.

U.S.-based Forrest Pharmaceuticals manufactures the drug and is expected to

file for FDA approval later this year.

Meanwhile, researchers at Indianapolis-based Eli Lilly have announced that a single dose of an experimental compound called a monoclonal antibody can reverse some types of memory damage in mice with Alzheimer's-like symptoms. In the Eli Lilly study, memory improved without affecting plaque deposits in the brain, which typically appear in patients with Alzheimer's disease. However, repeated doses of the monoclonal antibody in mice were shown to prevent additional plaque deposits from forming.

—Kathleen Vickery