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Dirty Mouths Lead to Broken Hearts

ScienceDaily (May 5, 2011) — Nurses who care for patients with dementia now have a tailored approach to dental hygiene for their charges, thanks to a pilot study by a team of nurses.

"Poor oral health can lead to pneumonia and cardiovascular disease as well as periodontal disease," said Rita A. Jablonski, even though these illnesses are not usually associated with the mouth. According to Jablonski, assistant professor of nursing, Penn State, persons with dementia resist care when they feel threatened. In general, these patients cannot care for themselves and need help.

Jablonski and her team introduced an oral hygiene approach called Managing Oral Hygiene Using Threat Reduction (MOUTh) specifically for dementia patients. Many of their strategies focus on making the patient feel more comfortable before and while care is provided, the researchers report in the current issue of *Special Care in Dentistry*.

"We have come up with 15 strategies -- techniques to help reduce threat perception," said Jablonski. These strategies include approaching patients at eye level if they are seated, smiling while interacting, pantomiming, and guiding patients to perform their own care by placing a hand over the patient's hand and leading.

People with dementia are often no longer able to distinguish low or non-threatening situations from highly threatening situations. This happens when the parts of the brain that control threat perception -- particularly the fight, flight or freeze responses -- begin to deteriorate. The amygdala is the part of the brain that houses the fear response. The hippocampus and cerebral cortex receive and send messages to the amygdala, telling it how to react.

"Think of the hippocampus, cerebral cortex and amygdala as being in the woods," said Jablonski. "In a person with dementia, the path in the woods is blocked with tumbleweeds and the message from the cortex and hippocampus can't get to the amygdala." In turn, patients with dementia often react to something as intimate as a nurse brushing their teeth as a perceived threat.

In the past 30 years the number of nursing-home residents who still have their own teeth has risen significantly. Many of these people need assistance with their dental hygiene, as well as with other hygiene.



Rita Jablonski, assistant professor of nursing, Penn State, demonstrates how to use the Managing Oral Hygiene Using Threat Reduction method on an actor, while inserting dentures. (Credit: Gene Maylock, copyright 2008 Penn State School of Nursing/Center for Excellence in Geriatric Nursing)

Jablonski and her team conducted a pilot study with seven people who had either moderate or severe cases of dementia. The researchers used the MOUTH technique on the subjects for two weeks, recording the state of the patients' mouths and how the patients reacted throughout the study.

At the beginning of the study all seven subjects had poor oral health, as determined by the Oral Health Assessment Tool. Eight categories concerning oral health are scored between zero and two. The lower the score the healthier the mouth. The average score for the subjects at the start of the study was 7.29. By the end of the study the average score was 1.00.

"To my knowledge, we are the only nurses in the country who are looking at ways to improve the mouth care of persons with dementia, especially those who fight and bite during mouth care," said Jablonski. "Our approach is unique because we frame resistive behavior as a reaction to a perceived threat."

Other researchers on the project were Ann Kolanowski, Elouise Ross Eberly Professor; Mia Gabello and Alexandra Brock, graduate students, all in the school of nursing, Penn State; Barbara Therrien, associate professor in nursing, University of Michigan; and Ellen K. Mahoney, associate professor in nursing, Boston College.

The Brookdale Leadership in Aging Foundation supported this pilot study. Jablonski is the 2009-2011 Brookdale Leadership in Aging Fellow. The National Institutes of Health has awarded Jablonski a grant to continue this research.

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