

Study explores effects of family dynamics on oral health

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What does mental health have to do with dental health? Quite a bit, according to Richard Heyman, PhD, and Amy Smith Slep, PhD, psychologists who joined the New York University College of Dentistry (NYUCD) in July 2011.

Professors Heyman and Slep, who co-direct the family Translational Research Group within the NYUCD's Department of Cariology and Comprehensive Care, are part of a growing trend among dentists trying to understand how psychological factors affect [oral health](#), especially when it comes to cracking the code on the causes of early childhood caries.

The NYUCD faculty has long included psychologists, such as Hillary Broder, PhD, who have tended to focus on teaching [dental students](#) to treat patients with sensitivity and to communicate effectively with them. Professor Broder's research has focused on how dental care affects a patient's quality of life.

According to Mark Wolff, DDS, PhD, professor and chair of the NYUCD Department of Cariology and Comprehensive Care and associate dean for predoctoral clinical education, "There is a major change happening in our beliefs about the impact of psychological factors on both patient behaviors and on the biology of oral health. We need to ask how psychological events relate to [tooth decay](#). For example, when we ask why someone doesn't brush, we need to think about whether he or she suffers from depression."

Many factors contribute to the intransigence of early childhood caries. They include lack of [parental education](#) or acceptance of caries as normal, lack of access to dental care, and poor insurance coverage.

However, until now, family dynamics have not been explored systematically as a contributor to oral health. In early 2008, Professor Heyman was contacted by a program officer at the National Institute for Dental and Craniofacial Research (NIDCR), part of the National Institutes of Health (NIH), because the agency was seeking to fund novel approaches to improving oral health.

Professors Heyman and Slep, who research couples in conflict, immediately wondered whether it would be possible to find out whether conflict was affecting their research subjects' oral health.

Research had already shown that couples' conflict can lead to increases in blood pressure, lower immunological functioning, and slower wound healing. Professors Heyman, Slep, and their group, had collected data on how family and environmental factors affect children's and adults' physical and psychological health. It wasn't a stretch to ask whether these factors would also impact oral health, yet no one had researched this question. Seeking an oral health collaborator, Professors Heyman and Slep approached Associate Dean Wolff, and the team was awarded an NIH grant of \$1 million, in 2009, to conduct a study.

The team collected data on nearly 150 families, taking blood and saliva samples, conducting physical exams, and administering questionnaires. In September 2011, they were ready to present preliminary data to the NIDCR Council. The researchers found that the more verbal or physical aggression that occurred between parents, the more oral health problems occurred in the child. The question was, Why?

"There are two hypotheses about how oral health is affected by parental

discord," Professor Heyman says. "First, lax supervision of children, as an outgrowth of discord, directly impacts children eating sugary cereals and beverages, and not brushing. The second is a biological response. There is strong research showing that family conflict and stress affect the immune system."

Lax parenting may be an even stronger influence on tooth decay than violent behavior," says Associate Dean Wolff. "Allowing children to eat sugary food is something seen even among well-educated people. We have to understand the psychological causation of tooth decay to prevent it. A simple lecture on brushing isn't going to improve things. You have to change parenting behaviors."

Now, Professor Heyman's and Slep's group, together with Associate Dean Wolff and NYUCD's Dr. Ananda Dasanayake, professor of epidemiology and health promotion, are turning their findings into action, developing an intervention for couples where discord may impact the oral health of their very young children.

"The birth of a new baby is a good time to intervene with families, because past research has shown that's when they are most open to changes in their couple relationship," Professor Heyman says.

"Couples realize that a baby can put a strain on their relationship. The aim of the intervention is to lower risk factors and get messages out on good preventive health care."

The NIDCR awarded the team a clinical trial planning grant to adapt and test an intervention that has been shown to help couples develop healthier relationships with each other and with their children. The intervention was developed in Australia and is currently being tested by the team. NYU College of Dentistry researchers want to find out whether this intervention can also produce improvements in physical and

oral health.

Up to 30 families are being recruited from maternity wards at Bellevue Hospital Center and Stony Brook University Hospital. The researchers are seeking families whose newborn children are already considered at high risk for poor oral health due to low family incomes, parents who have no more than a high school education, and at least one non-European-American parent. Couples who participate will watch DVD segments on conflict resolution and healthy parenting. They also will be assigned a coach, who will check in and help them improve their conflict-resolution and parenting skills. And they will complete a workbook that reinforces those messages with exercises.

This project is the first to intervene with new parents on multiple levels to prevent childhood caries. The aim is that, by improving noxious family environments, instilling daily oral health-promoting behaviors in children, and encouraging parents to bring the child to regular dental check-ups, the children's early oral health will be demonstrably better than is typical.

The couples' intervention takes place over eight sessions, timed to intersect with the developmental stages of their infant, from three to 12 months. This timing covers the period of tooth eruption and transition to recommended dental visits. It also covers both the newborn and toddler periods and allows families breaks between sessions and time to review material and solidify their skills. To examine the impact on oral health, dental exams will be performed on the children at 15 months.

Researchers will look directly for early childhood caries as well as contributing factors such as bacteria and saliva hormones related to stress.

Provided by New York University

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