Public Health Learning Modules
Using Healthy People 2020 to Improve Population Health

APTR
ASSOCIATION FOR PREVENTION TEACHING AND RESEARCH

Module 15: Oral Health

Part 4: Older Adults

Hi, my name is Marc Wolff and today we're going to speak about the oral health of older adults. The oral health of older adults is an often neglected area of health care. And today, we'll speak a little bit about both the issues that face older adults and why these issues are such a prominent problem for them.

Oral health was addressed in the Healthy People 2020 Objectives and in a large series of areas, but today we're going to focus a little bit on reducing the proportion of adults with untreated decay, reducing the proportion of adults with untreated root surface decay which is very specific, and reducing the portion of adults with moderate to severe periodontitis. We'll explain both diseases. We'll explain how they occur and why it's important that we attend to these diseases as part of the general healthcare maintenance of the patient.

We'll also speak very specifically to who in the health care team can address this particular issue. Surprise, it's not just the dentist. We can actually all address this issue and get better health outcomes for our patients. Seniors, 65 and older face a myriad of oral health problems, but being free of pain and discomfort, and maintaining a nutritious diet is an absolute goal that we must set for our older population. For that matter, for everybody in the population.

Not only are health problems more frequent in patients as they age, but health problems in older adults with dental problems often are much greater. Seven percent of all adults 65 years of age and older report having tooth pain at least twice during the past six months. That is nearly 1 in 12, 1 in 15 people that have had tooth pain during the past year several times. That's a very significant portion of our population, so we need to be able to more than just recognize when somebody says it's hurting understand how we may best prevent that pain from ever occurring.

Ninety-two percent of our seniors have had decay. That makes a lot of sense. We've had fillings any time or restorations any time from being a small child all through aging. Only 15 to 25% of our seniors today have no teeth at all. That's an interesting statistic. So we have a lot of seniors today with teeth. Twenty-three percent of the seniors have decaying teeth that is untreated and that sometimes, untreated is a difficult word, conventionally untreated. We're going to speak about some unconventional or less conventional treatments that will have the effect of arresting the decay and bringing it under control.

Nearly 37 to 60% of the population has periodontal disease. We'll both define that and understand what that means to a person. Seventy-five percent of the population has at least one site with periodontal disease. That's incredible. And periodontal disease is an inflammatory and infectious process that we must be very concerned about.

As we look at people with issues associated with access to care and wealth, we see that 90% of the people with income less than 200% of the poverty line have significant dental issues. The increase in restorative work required between now and 2030 for those over the age of 50 will nearly double. And this is a product of a number of different items.

First, seniors are getting older and having more teeth. That raises a very specific issue. We do have some barriers though to them actually getting the care. There are no programs nationally that fund dental health care. So Medicare, our old primary health care program for the aging does not address dental issues with the exception of infection and the periodic needing to have a tooth extracted for infection.

There are programs all over for general medicine, but there are none for dental health. Many states have no dental health care inclusion in Medicaid, the state supported dental care program. Loss of teeth affects patient's esteem, their ability to communicate, their ability to eat well and this makes the people that have the lowest incomes and the most disease, most difficult for us to get treatment for.

Tooth loss, it's obvious. We can eat less fiber. We have less ability to grind the issues. We wind up eating fattier foods as a result of that. We do see weight loss associated with really severe tooth problems. We decrease chewing ability and affect digestion. We have obvious impairment of speech when our teeth are not stable and allow us to phonate properly. We have all sorts of issues associated with quality of life. I need to remind you that even as people age, their aesthetics are a major issue.

And as a matter of fact, one of the major keys of aging is loss of teeth and that's a major problem. We'll say to an aging population, you need to have this tooth extracted. And to that patient, it represents . . . We'll speak to a patient about having to lose a tooth and to that patient it is the concrete evidence that they're growing older. They will take that with great difficulty. So this self-esteem, this quality of life is somewhat under measured, but has a major effect on aging populations and we need to pay attention to this.

So the population is growing older. We're growing older while retaining our own teeth. We're retaining more of those teeth, but even so the teeth that we are retaining because when we're younger received more dental work in them. So we're getting these very complex restorations on the teeth that now need to be maintained, special flossing, special brushing, special oral health care. And this is posing an extreme issue in the aging population. The repair of these complex restorations is terribly difficult. The patients have less finance and the work that they're going to need to be done frequently is more expensive than the original work they have.

So we also face a number of physiologic changes that make oral health more difficult and we'll speak about those in a moment. But saliva and less saliva results in the patient's inability to actually heal and prevent tooth decay. They become physiologically less able to brush and maintain their teeth and floss. All of this goes to a change in the patient's likelihood of maintaining health over the long period of time.

Brief stop at the discussion of tooth decay. Tooth decay involves a number of things. First, you definitely need a tooth and whether or not that tooth has had fluoride over its lifetime or not influences whether it's more or less likely to get tooth decay. We need to have bacteria that cause tooth decay. Virtually, everybody has this bacteria. And if we feed it right with this substrate, if we feed it right, we wind up growing lots of the bacteria that generate acids that cause the tooth to dissolve and create tooth decay.

So when all three of these things come together, we get tooth decay. What are our protectants? We keep saliva hanging out there on the outside and this is a slide that was originally developed by a salivary scientist, Leo Sreebny, this particular concept of as we reduce the amount of saliva in the mouth, we see this inability to remineralize, inability to neutralize acids, inability to flush away the foods, and it becomes more and more likely that we get tooth decay. That's a significant issue here because we take medications and we develop conditions that result in xerostomia.

So over 1,000 medications have the effect of causing xerostomia, dry mouth, reduced salivary flow, the antihypertensive, the antidepressants, the antihistamines. All–hint, hint–to reduce saliva. Saliva is what brings the buffering capacity. It's what brings calcium for remineralization. So this poses a significant issue.

In addition, as we grow older we get many autoimmune diseases ranging from rheumatoid arthritis to Sjogren's disease. So Sjogren's Syndrome is a condition where the salivary glands no longer produce the saliva needed. So between the medications and the autoimmune disease that affect salivary secretion, we can see as much as 25% of our population that suffers from dry mouth, inability to control decay even if they wanted to because there is no saliva to help them.

Root caries is not something particularly special. This is a slide from Dr. Miriam Robins and what you see on it when we look in these areas here are these very ugly fulminating decay. The mechanisms of causing this decay are absolutely the same as we talked about a moment ago.

You need to have tooth. In this case, we have exposed root which is more susceptible to decay. It dissolves easier. We need to have the bacteria. This patient obviously is not cleaning their teeth well and allows the accumulation of plaque on the surface. The plaque contains lots of bacteria. And they are feeding the bacteria well with sugars. And it doesn't have to be a lot of sugar. It can be very little sugar fed over the course of a whole day causing the patient to develop this tooth decay.

And this tooth decay can be very rampant and extremely difficult to restore, but we do have mechanisms of controlling it. Aging, in and of itself, does not result in root caries. We do see the population having fewer teeth as they get older and of those teeth, more and more of them have root caries.

Well, our gums recede a little bit as we age. We wind up with more exposed root. I said earlier it dissolves easier and if they aren't able to take care of their teeth, they develop tooth decay there. At the age of 64 about 50% of the population have one tooth with root decay. By 79, we see that number jump up to 70%. We need to develop strategies that get the tooth clean and place preventive mechanisms on the tooth to try and reduce the likelihood of developing decay.

The other thing that is really quite remarkable to us is the number of teeth and the number of surfaces of teeth that people are retaining. In 1960, 65% of 65-year-olds had no teeth. Today, 65-year-olds have an average of 19 teeth, two of which have had decay on the root surface, either filled or currently decayed. Seventy-five-year-olds have 16 teeth with three of those surfaces with decay. We have a significant issue that we need to pay attention to.

Well, let's stop for a moment and look at periodontal disease. Periodontal disease is a disease that affects the attachment of soft tissue and bone to the tooth. It's caused by bacterial infection tending to be anaerobic bacteria. It's caused by the accumulation of plaque. We can see at the collar of this tooth, this accumulation of plaque. We can see this bright red gingiva. That bright red gingiva is increased vascularization and increased inflammation. That's a significant combination. So we have bacteria, inflammation, and bacterial colonization in that area.

And as a matter of fact, it's leaky. We get serum leaking out. We get bleeding of these gums when the patient's brush their teeth. They start to get a destructive collagenase mediated break down of bone around the tooth. The teeth become loose and they're eventually lost. Leaving this inflammation around the teeth has implications in that it increases the body's burden of inflammation which is implicated in other issues like heart disease, stroke, developing vascular plaques that accumulate in the blood vessels. So this is a disease none of us want to leave around.

Now, one of the really good news is just cleaning these teeth very well, dentists followed by good home care can control this bacterial burden in the large extent. So let's look at what we need to do as a team. There is a myriad of locations that our patients are in. They range from being at home, free living, independent, capable of taking care of themselves in all respect to being in absolute skilled facilities and having all care delivered to them.

We are in some stages of independence to absolute need of being dependent throughout our entire life. It's important for the health care professionals around them whether we're speaking about social workers, nurses, physicians, any person in the health care field, to recognize where that person is in the dependence factor. As dependence goes up it becomes more and more likely that we will have dental disease that needs intervention.

Now, the recognition of this cannot just evoke a referral to a dentist. When we are looking at patients that, for instance, are in a nursing home facility, a total skilled facility, we need to look at a group of people that need to address care. This care can include the person who helps clean the teeth, helps direct the patient to clean the teeth, help maintain an oral environment, make sure a tooth brushes toothpaste, but can the patient do it themselves or do we need to have somebody doing this. We need to have training for our aides, for our nursing staff, for our family members that are taking care of or assisting with these people, that puts oral health as a premier portion of that process.

We need to introduce methods of controlling tooth decay like the application of fluoride varnish. Physicians, nurses, any licensed professional can apply this fluoride varnish. It's quick. It's simple. It will arrest or reverse, or prevent that root caries that we just saw. It will also prevent other tooth decay.

Treatments like trying to moderate sweets are not highly successful. Unfortunately, we have a craving for sweets particularly as we get older and enjoy taking those sweets, and that feeds the bacteria. So we need to manage this in another fashion, reduced

bacteria with home care, manage the resistance of the tooth with fluorides, and we can do so and where possible we should be limiting the amount of fermentable carbohydrates for a number of reasons including diabetes, general health, blood pressure, and tooth decay. The entire team needs to approach this and we need to recognize when a referral to the dentist is absolutely necessary.

So in summation I'd like to leave this presentation with the concept that managing tooth decay in the aging population is a team effort. It requires recognition of when patients are dependent and need assistance. It requires the training of a large group of people, not only the dentist in the prevention, the recognition, and the management of the disease. And plans must be put in place for oral health care for every member of our aging population.