Commentary
Coronavirus disease 2019 and dental care for older adults
New barriers require unique solutions

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The importance of oral health as part of the general well-being of older adults has been well documented.[1,2] However, frail older adults and those with multiple medical conditions have historically faced multiple barriers in accessing dental care, whether in private practice or in community health centers.[3,4] Consequently, multiple studies have emphasized that as a group these people usually have poorer oral health,[5] and those most at risk are older adults living in nursing homes,[6] as well as people who are homebound.[7]

Barriers to dental care are related to multiple factors, including, but not limited to, socioeconomic issues,[4] ageism,[8] and complex general health status with multiple comorbidities and polypharmacy.[9] Other factors include complex oral health status with heavily restored dentitions, xerostomia,[9] and lack of a sufficient number of dental providers trained in geriatric dentistry.[10]

Lack of finances limits access to dental care,[11] as does the lack of dental insurance, because Medicare does not cover dental treatment.[12] The reimbursement of dental services for patients who are receiving public assistance is low, so that many dentists in private practice cannot afford to treat these patients, which further limits their access to care.[11] Another barrier is that some of these frail older adults may have had bad childhood experiences with dental care, and consequently may fear or distrust dentists.[13] Many frail older adults have low dental health literacy,[14] which affects their understanding of the importance of oral health care and daily oral care, such as toothbrushing, the use of fluoridated toothpaste, and the importance of adjunctive aids such as fluoride rinses. Also, some do not value dental care because they still have the denture acceptance mentality of their parents, who accepted tooth loss and complete dentures as a part of normal aging.[15]

However, financial limitations are not the only socioeconomic barriers for accessing dental care.[16] Many older adults need help with navigating the complexity of health services. Depending on others for the activities of daily living[17] or being institutionalized[18] has been linked to reduced access to care. Many frail older adults also depend on others for transportation services to dental appointments, especially if they live in rural areas, and this dependence has been associated with reduced access to dental care.[4,17] In addition, some frail older adults have reduced mobility and need wheelchairs, and therefore for such a patient to be able to access a dental office it must be wheelchair accessible. However, many solo private dental practices still have accessibility issues, such as no entrance ramps, doors not wide enough for wheelchairs, a lack of elevators, no wheelchair-accessible restrooms, and dental chairs that are not movable.[19]

Another important social barrier is ageism, defined as prejudice against people on the basis of age, especially older adults.[20] Ageism is a pervasive form of social prejudice that often goes unnoticed, and ageism among health care providers has been linked to poorer health care outcomes for older adults.[21] Dentistry is no exception.[8] The World Health Organization has declared ageism as one of the most important barriers for older adults receiving age-appropriate health care.[22] Increasing awareness about ageism among dental students is a key to increasing the number of dentists in the workforce who are trained in geriatric dentistry.[8,10] Awareness about ageism can be increased by using multiple educational interventions, such as professional patients, intergenerational contacts, and simulations to understand the influence of aging on multiple activities that influence the ability of frail older adults to maintain oral hygiene and to access dental care.[23]

Frail older adults often have complex health histories, with multiple comorbidities and taking multiple medications,[9] as well as having heavily restored dentitions, which require complex dental

Commentaries represent the opinions of the authors and not necessarily those of the American Dental Association.

treatment planning, such as rational dental care.[9] In addition, many practitioners may not want t
treat frail older adults as they may become frustrated with these patients because they are unable t
maintain oral health. Furthermore, their oral condition may deteriorate due to the influence o
xerostomic medications, poor eyesight, and lack of manual dexterity. Without hands-on training fo
dentists, such a frail older adult seeking care may make a general dentist uncomfortable an
reluctant to accept this patient into his or her private practice. However, the opportunities fo
advanced training in geriatric dentistry have been reduced, from 16 funded programs to 6 fe
charging programs, in spite of the fact that the population of frail older adults is increasing.[24]

In addition to the multitude of historical barriers, some of which have been addressed above, fro
older adults will face a new set of barriers related to the emergence of COVID-19, caused by severe
acute respiratory syndrome coronavirus 2 (SARS-CoV-2). Older age and comorbidities were
identified early as major risk factors for poorer outcomes among people with COVID-19.[25] The case
fatality rate in people 80 years and older is as high as 22%.[26]

In addition, medications commonly used by older adults, such as angiotensin-converting enzyme
inhibitors and angiotensin II receptor blockers, have been shown to upregulate the angiotensin-
converting enzyme–2 receptor, which is the receptor used by the COVID-19 pathogen to invade
human cells and cause severe acute respiratory syndrome. As a consequence, patients using these
medications are at increased risk of developing COVID-19.[26] Although older adults have been the age
group most affected by the pandemic, they have not been at the center of the COVID-19 discussions,
nor have clear guidelines been provided for the care of community-dwelling older adults.[27]

Much attention has focused on nursing homes because they have become hot spots for COVID-19.
At present, owing to the summative effect of asymptomatic shedding and a shortage of personal pro-
tective equipment (PPE) and testing kits, multiple nursing home COVID-19 outbreaks have been
observed across the United States.[28,29] A major risk factor is that many caregivers in the nursing homes
are undereducated, poorly trained, or both; live in multigenerational homes, which do not allow
for social distancing; and often must use public transportation. This increases their risk of becoming
infected and consequently bringing the virus to nursing homes.[29,30] In addition, residents with cognitive
impairments, which make up a significant proportion of US nursing home residents, are unlikely to
follow any COVID-19 best practice precautions.[28] Unfortunately, more caregivers are avoiding
helping residents with daily oral hygiene owing to fear of SARS-CoV-2 infection through saliva
contact, resulting in higher levels of plaque and more dental disease in residents.

Among the multiple procedures being implemented as protective measures against COVID-19,
nursing homes are improving their infection control protocols, eliminating group activities, and
barring visitors, including health care consultants.[28] The impact of months of inaccessible consultant
care by providers may have an impact on the health of nursing home residents. Dental care was deemed
a nonessential service, and therefore elective dental treatment is among the most postponed activities
by community-dwelling frail older adults, especially residents in nursing homes.[31] At present, there are
limited options for emergency dental care while nursing homes restrict activities to a minimum. The
options are teledentistry triage for observation, referral to a hospital with a dental department for
extractions, or prescribing antibiotics. If dental infection is neglected, there is a risk that the patient
may require hospital admission with intravenous antibiotics for facial swelling due to a dental abscess.
However, some people, especially those with dementia, cannot be easily transferred outside of the
facility. Another complication is that most nursing homes require a 14-day quarantine for residents if
they need to go outside the facility. In addition, families are stressed because they are unable to see their
loved ones who are living in nursing homes and find it difficult to safely access needed health care for
them. To alleviate the damage created by the potential lack of dental care, general practitioners will
need to be empowered to include these patients in their practices.

At present, there may be an opportunity to educate nondental health care providers (for example,
medical directors, directors of nursing, and administrators of nursing homes) about how to use tech-
nology to transmit pictures of the oral cavity to dental professionals to evaluate residents' oral hygiene
and dental problems and to generate necessary referrals. Webinars sponsored by aging, dementia, and
oral health organizations, such as the Gerontological Society of America, should be developed to
educate nondental professionals about the importance of oral health and to enhance interprofessional
collaboration. A systematic review evaluated various initiatives to educate nursing home staff members
about the importance of daily oral hygiene care for residents,[32] and most have failed because of structural
deficiencies in nursing homes, such as understaffing, overwork, and poor pay.[33] The initiatives that have
been successful have required external funding. However, there are some resources available to help
educate nursing home staff members about oral hygiene routines, such as Mouth Care Without a
Battle,[34] and the GeriaDental app.[35] Teledentistry can also be used to motivate patients, caregivers, and
nursing home staff members to maintain oral hygiene routines and to provide synchronous guidance to
staff members when they are brushing the teeth of difficult patients. It can also be used to educate staff
members about cariogenic foods.

In many states, current public health guidelines have recommended that dentists perform
emergency care only in their private practices.[36] As states are lifting restrictions, dental practices are
reopening. The problem that has been widely discussed concerns how one can safely deliver dental
care, which often involves generating aerosols that contain respiratory droplets, which is the way
SARS-CoV-2 is transmitted. This makes regular dental care a high-risk activity for spreading
COVID-19.[37] Therefore, new and enhanced infection control precautions targeting respiratory
pathogen transmission will need to be implemented in dental clinics. The new preventive measures
could include enhanced infection control protocols, such as fogging with antiviral aerosol and the
use of N95 respirators, full-face shields, eye protection goggles, isolation gowns and head covers, as
well as high-power suction and filters in the heating and cooling systems.[36]

Older adults with comorbidities have been informed that they are at higher risk of experiencing a poor outcome if they become infected with the COVID-19 virus. Consequently, many older patients are fearful of returning for regular dental appointments in private practices or community health centers. Dentists are concerned about the safety their older adult patients with comorbidities and so are reluctant to treat them at this time. The use of enhanced infection control will increase the overhead cost for the dentist and will need to be recuperated by charging higher fees, and this may become another barrier to dental care for a group that is already experiencing the cumulative effect of multiple barriers.

Infection risks can be minimized by reducing aerosol-generating procedures, using silver diamine fluoride and other atraumatic restorative techniques to manage caries, and using hand scaling for periodontal maintenance.

How can dentists manage this situation? The dentists caring for frail older adults are working with some already known alternatives, involving but not limited to working collaboratively with the general health care team to assess and mitigate the risk for the most vulnerable groups. Patients with multiple comorbidities will require a medical consultation as to the stability of their systemic health. Using the information provided, the dentist will need to develop a rational dental care treatment plan[15] and appropriate PPE to safely treat them.

Initially, teledentistry may be an important tool for assessing some high-risk patients who might not be able to come to the office owing to illness, isolation, or quarantine.[38] Teledentistry is useful for following up on patients who underwent a procedure recently at the office or to assess a patient who is experiencing acute dental pain. As stated earlier, such a patient may need analgesics or antibiotics if there is facial swelling until the patient can return to the dental office for definitive care or need a referral to a hospital emergency department that has a dental service. Dentists should use teledentistry to consult with only their own patients or with a patient who has been referred to them. The dentist needs to identify the patient, have the patient's clinical record available, and inform the patient about the limitation associated with a teledentistry consultation. At the end of the teledentistry appointment, the dentist must write a detailed record of the appointment.

We also need to educate our frail older adult patients and their care providers about the mitigation strategies being used in private practices and community health centers to minimize patient risk of developing COVID-19 infection during dental care. The strategies include appropriate assessment of COVID-19 symptoms, taking patients' temperatures, social distancing, and using adequate PPE. Also, infection risks can be minimized by reducing aerosol-generating procedures,

using silver diamine fluoride and other atraumatic restorative techniques to manage caries, and using hand scaling for periodontal maintenance. In addition, when dentists are allowed to reenter nursing home facilities to deliver dental care, they must use enhanced infection control precautions, which may include testing residents for COVID-19 before the visit.

For some of these changes to be effective and sustainable, reimbursement rates will need to be reevaluated. Therefore, we will need the help of our dental colleagues to lobby for changes in reimbursement rates from third-party companies if we are to care for these frail and vulnerable older adults. ■

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Commentary

Letters

JADA welcomes letters from readers on articles that have appeared in The Journal. The Journal reserves the right to edit all communications and requires that all letters be signed. Letters must be no more than 550 words and must cite no more than 5 references. No illustrations or tables will be accepted. A letter concerning a recent JADA article will have the best chance of acceptance if it is received within 2 months of the article's publication. For instance, a letter about an article that appeared in April JADA usually will be considered for acceptance only until the end of June. Letters regarding articles published online ahead of print will be published after the article appears in print if the letter is selected for publication. You may submit your letter via e-mail in Word format to jadaletters@ada.org; by fax to 1-312-440-3538; or by mail to Letters to the JADA Editor, Publishing Division, American Dental Association, 211 E. Chicago Ave., Chicago, Ill. 60611-2678. By sending a letter to the editor, the author acknowledges and agrees that the letter and all rights of the author in the letter sent become the property of The Journal. Letter writers are asked to disclose any personal or professional affiliations or conflicts of interest that readers may wish to take into consideration in assessing their stated opinions. The views expressed are those of the letter writer and do not necessarily reflect the opinion or official policy of the Association. Brevity is appreciated.

STUDY METHODS

We would like to congratulate the authors of the August JADA article titled "Salivary Factors Related to Caries in Pregnancy: A Systematic Review and Meta-analysis" (Yousefi M, Parvaie P, Riahi SM. *JADA.* 2020;151[8]:576-588) for a well-planned, novel systematic review and adequately powered meta-analysis focusing on the salivary factors related to caries in the various trimesters of pregnancy. Nonetheless, we do have a few concerns in this study.

Dental caries is a universal, multifactorial, noninfectious, polymicrobial disease caused by various associations. Amongst the several risk factors elucidated by the authors, the second-hand smoke exposure, increased salivary cortisol levels during pregnancy cannot be undermined. The damage to the salivary glands by toxic carcinogens affects the salivary flow rate, buffering, and cleansing capacity. The maternal lifestyle can be one of the covariates for the development of the oral disease.[1,2]

Regarding heterogeneity testing, we recommend the use of the τ^2 parameter in addition to the I^2 method of heterogeneity testing used in this study for a robust analysis of between-study heterogeneity.

In regard to publication bias of the included studies, the authors have highlighted selection bias as one of the limitations in the study while the publication bias has not been addressed. Publication bias is inherent to the publication process, where large studies and positive results are given precedence. The inclusion of the key publication bias indicators including "funnel plot," "Orwin and classic fail-safe N test," "Begg and Mazumdar rank correlation test," "Egger regression," and "Duval and Tweedie trim and fill" would clarify the possible publication bias of the included studies due to small or missing studies.[3,4] Hence, the omission of the publication bias and its key indicators may dampen the clinical feasibility of the study.

Nineteen studies included in the meta-analysis were cross-sectional as against the 10 longitudinal studies that could only delve whether there was an association between salivary factors causing caries and pregnancy, but cannot determine the causal relationship between them.

The above recommendations, if considered may help this study gain traction and reach further clinical relevance. ■

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AUTHORS' RESPONSE

We thank Dr. Shetty and colleagues for their attention to our article.

As mentioned before, pregnancy is a state that affects numerous organ systems and results in physiological and physical variations in many parts of the body, including the oral cavity.[1] Dental caries is a multifactorial disease and each factor can be relating to many variations; therefore, it can be so hard to assess all cofounding variables. In a previous study, we tried to assess the effect of pregnancy on salivary factors related to caries.[2] Although in our meta-analysis most of the included studies did not consider maternal lifestyle such as oral health care and caloric diet of the participants,[2] they mostly followed standard procedure of saliva collection, which emphasized refraining from eating and drinking for 1 hour before saliva collection and rinsing their mouths immediately prior to collection. We think the buffering capacity of saliva and this protocol can reduce risk of bias.

Regarding evolution of heterogeneity, Higgins and colleagues[2] suggested the widely popular measure of heterogeneity, I^2, and approaches for calculating the associated 95% confidence intervals (CIs).[3] I^2 states the fraction of variability in a meta-analysis is explained by between-study heterogeneity rather than by sampling error. I^2 mathematically is expressed as $I^2 = \tau^2/(\sigma^2 + \tau^2)$, whereas τ^2 means the between-studies heterogeneity, σ^2 means sampling error across studies, and $\sigma^2 + \tau^2$ is the total variation or variance in the meta-analysis. I^2 index expresses the proportion of heterogeneity and can be accompanied by a 95% CI, and this index is a preferred measure of heterogeneity in meta-analysis rather than τ^2 parameter because τ^2 is insensitive to precision and the number of studies.[3,4]

As for assessing publication bias, the most commonly cited regression test is the weighted regression model that was published by Egger and colleagues[5] and is given by "yi = $\alpha + \beta$ sei + εi." It is a parametric method in that its power is better that nonparametric methods. In our study was used the Egger test for assessing publication bias and observed no evidence of publication bias (Tables 3 and 4).

However, in our study there are limitations that have been mentioned before, but we believe that it provides crucial information for future studies and clinical decisions. ■

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COLD SORE THERAPY

What wonderful information was presented in the August JADA For the Patient page (Mark A. Common Oral Sores and Infections. *JADA.* 2020;151[8]:640). Very helpful. It was also great to see that the information was given with permission for print and reproduction.

Although the information on cold sores was perhaps very adequate for patient information, there exists an article from 1978 that has been extremely helpful to patients in my practice who are prone to cold sores.[1] As quoted from the article, "With lysine therapy, pain usually disappears overnight, vesicle formation stops, and resolution rapidly occurs in most patients. Patients with persisting herpes simplex may have to establish a maintenance control dose through trial and error. Results indicate there is no recurrence when patients take at least 500mgs. per day."

My patients report that if they begin the lysine therapy immediately when they feel the tingle or itch on their lips that acts as a warning ("Oh, no. Here comes a cold sore. And I have prom this weekend."), the actual sore never materializes, or is miniscule, unnoticeable.

This article, or its reference, since there may be copyright restrictions, might be ripe for publishing in JADA. I have found many fellow practitioners are unaware of the article or the benefits of lysine therapy. I hope this information might be useful. ■

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AUTHOR'S RESPONSE

I greatly appreciate Dr. Spencer's feedback on the August JADA For the Patient page.

However, while the use of lysine may be a reasonable option for the dentist to prescribe, it would not be appropriate to introduce in the For the Patient page. This page is intended to spark conversation between the dentist and patient about treatment options, which may or may not include lysine, rather than recommend specific treatments.

I thank Dr. Spencer for the opportunity to clarify the intent of the For the Patient page. ■

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DR. ANTHONY R. VOLPE REMEMBERED AS "PIONEER IN PREVENTATIVE DENTAL CARE"

Dr. Anthony R. Volpe

Dr. Anthony R. Volpe, who retired as Colgate's vice president of scientific affairs in 2013 and evaluated the clinical efficacy of the company's toothpastes during his 52-year career, died Oct. 8.

"The global dental community has lost a giant," then-ADA President Chad P. Gehani said. "Dr. Volpe led a distinguished career as an educator, researcher and clinician, and his contributions have paved the way for countless patients and dental professionals. In 2014, the Volpe Research Center was dedicated in his honor, as his work laid the foundation for the innovations advancing dentistry today."

Dr. Volpe began his career at Colgate's Jersey City, New Jersey, facility in 1960, where he established Colgate's first dental clinic with a focus on evaluating the efficacy of Colgate antitartar toothpastes and created the Volpe-Manhold Calculus Scoring Index for evaluating antitartar products, according to a Colgate news release. In 1962, Dr. Volpe designed Colgate's second dental research clinic in Piscataway, New Jersey. He also led the documentation of the anticaries efficacy of Colgate's anticavity toothpaste, which included clinical research programs at international locations.

In 1985, Dr. Volpe was promoted to director of clinical investigations and was responsible for documenting the clinical efficacy of Colgate Total, the world's first multibenefit toothpaste, according to the release.

"During his extraordinary Colgate career, [Dr. Volpe] personified our commitment to improving oral health, to developing products with scientific excellence and to establishing our leadership among dental professionals," Colgate stated in the release. "He was also deeply committed to building partnerships between Colgate and academia."

In addition to his work on tartar measurement, Dr. Volpe helped lead the development of other novel measurement procedures, as well as breakthrough clinical research on plaque and gingivitis control, according to the release. He published more than 200 articles in major international scientific journals and holds several U.S. patents in dental science.

In 2017, Dr. Volpe received the International Association for Dental Research Distinguished Scientist Award in Pharmacology/Therapeutics/Toxicology Research.

"Along with being a pioneer in preventative dental care and a champion for public health, Dr. Volpe was also regarded for his service to international organized dentistry," Dr. Gehani said. "But what made him special was his gift for connecting with others. He was a mentor and supporter to many—whether you were a student or a peer, he was only a phone call away. He was generous with his time and talents and guided many people along their journeys in practice, teaching, research and leadership. With the news of his passing, our profession remembers Dr. Volpe's enormous legacy. Personally, I remember him as a trusted colleague, a good friend and an uncle and mentor to my own children. Dr. Volpe will be sorely missed."

By Mary Beth Versaci, senior editor, ADA News

DENTAL CARE PROVIDERS SUSCEPTIBLE TO PSYCHOLOGICAL IMPACT OF COVID-19, RESEARCHERS REPORT

Dental health care workers are as vulnerable as nondental health care workers and nonhealth care essential workers to the psychological impact of COVID-19, according to a study published online September 22 in Journal of Dental Research.

Researchers from the University of Michigan School of Dentistry in Ann Arbor, Michigan, and Indiana University in Indianapolis, Indiana, conducted a descriptive cross-sectional study among essential workers attending a COVID-19 pilot-testing clinic that used a rapid point-of-care immunoglobulin G—immunoglobulin M antibody test for severe acute respiratory syndrome coronavirus 2.

Study participants consisted of 984 attendees who completed a 58-item online survey while waiting for their antibody test results. Respondents' mean (standard deviation) age was 41.8 (13.4) years (range, 18-78 years), and 63% of participants were women.

According to the survey findings, 58% of respondents somewhat agreed, agreed, or strongly agreed that they were afraid of COVID-19, but dental health care providers were less likely to be afraid than respondents in the other 2 groups. More than 90% of respondents were sometimes, frequently, or always worried about their friends and loved ones catching the coronavirus, with no significant differences between the 3 groups.

In addition, more than 70% of respondents were sometimes, frequently, or always worried that COVID-19 would cause financial problems for them or their loved ones; however, dental health care providers were less likely to be worried than nondental health care providers and nonhealth care essential workers. Sixty-seven percent of all respondents stated that knowing the results of an antibody test would decrease their stress and anxiety.

Finally, 81% of respondents found a point-of-care (POC) antibody test received in a dental setting "definitely" acceptable, and 85% would "definitely" recommend a point-of-care antibody test to a friend, family member, or coworker.

Henry Schein and the Testing for Tomorrow collaborative provided support for the COVID testing project, which was the basis for this research.

For more information on this study, visit https://journals.sagepub.com/doi/full/10.1177/2380084420962399.

SMOKING CESSATION APP BASED ON ACCEPTANCE AND COMMITMENT THERAPY MAY BE MORE EFFECTIVE THAN ONE BASED ON AVOIDANCE OF SMOKING TRIGGERS, STUDY FINDS

A smartphone application (app) for smoking cessation based on acceptance and commitment therapy (ACT) may be more effective than an app based on US Clinical Practice Guidelines (USCPG), according to a study published online September 21 in JAMA Internal Medicine.

In a double-blinded, randomized clinical trial, researchers at the Fred Hutchinson Cancer Research Center in Seattle, Washington, and the University of Washington in Seattle compared the efficacy of the ACT-based iCanQuit smartphone app with the National Cancer Institute's QuitGuide app based on USCPG.

The study cohort consisted of 2,415 cigarette smokers who were recruited online (80.5% of whom responded to Facebook advertisements). Their mean (standard deviation) age at enrollment was 38.2 (10.9) years. Of the 2,415 participants, 1,700 (70.4%) were women, 1,666 (69.0%) were white, and 868 (35.9%) were racial or ethnic minorities. In addition, 2,009 participants (83.2%) reported having smoked 10 or more years, and 1,803 (74.7%) smoked more than one-half pack of cigarettes per day.

For the primary outcome—30-day point prevalence abstinence at the 12-month follow-up—the odds of quitting smoking were 1.49 times higher in the iCanQuit group than in the QuitGuide group (28.2% [293 of 1,040] versus 21.1% [225 of 1,067]; odds ratio, 1.49; 95% confidence interval, 1.22 to 1.83; $P < .001$).

Moreover, participants in the iCanQuit group reported higher overall satisfaction than those in the QuitGuide group (865 of 977 [88.5%] versus 773 of 1,002 [77.1%]; $P < .001$); found the app more useful for quitting (805 of 1,005 [80.1%] versus 739 of 1,033 [71.5%]; $P < .001$); and were more likely to recommend it to a friend (840 of 1,011 [83.1%] versus 724 of 1,024 [70.7%]; $P < .001$).

"Our study offers a new approach to quitting smoking," said Jonathan Bricker, PhD, a professor in the division of public health sciences. "By deploying ACT-based methods that focus on acceptance of smoking triggers instead of avoidance of smoking triggers, we believe iCanQuit can help more smokers kick the habit and thereby reduce premature deaths," Dr. Bricker said.

In light of the study findings, the researchers concluded that the ACT-based smartphone app was more efficacious than the USCPG-based app for cigarette smoking cessation.

This study was supported by a grant from the National Cancer Institute, National Institutes of Health, Bethesda, Maryland.

For more information on this study, visit https://jamanetwork.com/journals/jamainternalmedicine/fullarticle/2770816.

DENTAL CARIES INCIDENCE MAY BE LINKED TO PARENT-CHILD INTERACTIONS AND CHILDREN'S RESILIENCE IN ELEMENTARY SCHOOL, RESEARCHERS REPORT

Parent-child interactions in first grade are associated with improved resilience in second grade and a lower incidence of dental caries in fourth grade, according to a study published in the July/August issue of Pediatric Dentistry.

In this prospective study, researchers from Tokyo Medical and Dental University in Japan and Japan Society for the Promotion of Science in Tokyo analyzed longitudinal data on 3,168 children participating in the Adachi Child Health Impact of Living Difficulty study, an ongoing panel study of the social and family determinants of children's health.

To assess parent-child interactions in first grade, researchers administered a questionnaire to primary caregivers regarding the frequency of interactions across 8 items (for example, helping the child with homework).

Using the Children's Resilient Coping Scale, researchers measured the children's resilience—defined as the capacity to adapt to adverse and stressful environments—in second grade. On a scale from 0 (never) through 4 (very frequently), parents rated their child on several items (for example, the child tries to do his or her best). Caregivers also completed a questionnaire regarding the child's oral health–related behavior, such as toothbrushing frequency.

School dentists determined the incidence of caries by means of dental checkups conducted every year.

The study findings showed that parent-child interactions during first grade were positively associated with resilience in second grade (standardized coefficient [β], 0.402; 95% confidence interval [CI], 0.357 to 0.446). Resilience was associated with favorable oral health behavior in the same year (β = 0.236; 95% CI, 0.159 to 0.313). The researchers also observed an inverse association between favorable oral health behavior and dental caries incidence in fourth grade (β = −0.108; 95% CI, −0.170 to −0.045).

When advising on children's oral health behaviors, dental care providers should involve caregivers, the authors concluded.

This study was supported by a Health Labour Sciences Research Grant, Japanese Ministry of Health, Labour, and Welfare, Chiyoda, Tokyo, Japan; Grants-in-Aid for Scientific Research, Japan Society for the Promotion of Science, Chiyoda, Tokyo, Japan; Grant-in-Aid for JSPS Research Fellow,

Chiyoda; grants from St. Luke's Life Science Institute, Chuo, Tokyo, Japan; and grants from the Japan Health Foundation.

For more information on this study, visit https://aapd.publisher.ingentaconnect.com/contentone/aapd/pd/2020/00000042/00000004/art00012#. ■

Compiled by Janice Snider.

CORRECTION

In the February JADA article titled "Stainless Steel Crowns As a Restoration for Permanent Posterior Teeth in People With Special Needs: A Retrospective Study (Sigal AV, Sigal MJ, Titley KC, Andrews PB. *JADA*. 2020;151[2]:136-144), the legend for Figure 3 should read thus, "**Figure 3.** Ten-year survival analysis for new stainless steel crowns (SCCs) and amalgam (AM) restorations (95% confidence intervals [CI]). For the 650 stainless steel crowns, the 10-year survival rate was 79.2% (95% CI, 73.0 to 84.2). For the 1,011 amalgam restorations, the 10-year survival rate was 63.5% (95% CI, 55.7 to 70.4)." The online version of this article has been corrected. JADA regrets the error. ■

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