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Oral health across the life course: A role for social work

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Abstract
Oral health has improved, but oral diseases are the most prevalent chronic diseases worldwide. The definition of oral health is now more inclusive of quality of life and functioning beyond the care of teeth and oral health more broadly defined as an interaction with mental and physical health. An understanding of oral health needs to be had by all members of a treatment team including social workers in much the same way social workers need a basic knowledge of physical health care. The current movement towards interprofessional care and more integrated care, challenges social workers to understand both physical and oral health. This paper discusses oral health with a life course perspective, while addressing social determinants to provide a foundation of oral issues individuals may encounter. Social work brings a unique set of skills to the interdisciplinary team. Social workers can support, advocate, counsel, and refer patients who need oral interventions.

Key Words: Oral Health, Life Course, Interprofessional Care, Oral Care, Social Determinants

Introduction

Oral health dramatically improved in the 20th century due to biologicals—the introduction of fluoride in water and toothpaste, the use of pit and fissure sealants, and chemotherapeutics. Despite these improvements, oral diseases still persist globally, primarily because the diseases are not just biological—they are bio-psycho-social-ecological diseases with potential for interprofessional mediation. For example, individuals living in more economically deprived areas experience a greater burden of poor oral health than individuals living economically advantaged areas (Anderson, Saman, Lipsky, & Lutfiyya, 2015; Berdahl, Hudson, Simpson, & McCormick, 2016). Additionally, poor oral conditions/disease can impact oral health quality of life (OHQofL) via pain, difficulty eating, swallowing, and communicating, and creating social isolation due to halitosis or poor appearance, can reduce job opportunities, and can lead to bullying. Examining how social determinants across the life course can impact oral care allows social workers to intervene with psychosocial education, counseling, resources, and referrals to dental health professionals.

Definition of oral health

In 2016, the FDI World Dental Federation General Assembly approved a new broader definition of oral health as a "is multi-faceted and includes the ability to speak, smile, smell, taste, touch, chew, swallow and convey a range of emotions through facial expressions with confidence and without pain, discomfort and disease of the craniofacial complex" (Glick et al., 2016, p. 793). This definition highlights the connection of oral health to overall health and well-being and that oral health care and

treatment must consider the patient's values, perceptions and what he/she will expect from the oral health intervention (Glick et al., 2016).

Social determinants of oral health and the life course

Oral health is influenced by social determinants of health including an individual's nutrition, socioeconomic status, health literacy, biological factors, physical health, and environment, with these impacts at the individual, family, and community levels (Fisher-Owens et al., 2007; Henshaw, Garcia, & Weintraub, 2018). While viewing the social determinants, oral health should also be considered with a life course lens (Hutchison, 2005). The life course puts individual and family development into cultural and historical contexts (Germain & Gitterman, 1996; Hutchison, 2005). Using a life course perspective for oral health fits from an epidemiological perspective as chronic oral health conditions such as caries (cavities) are cumulative and generally irreversible (Locker, 1988). Moreover, the risk of disease changes over time as individual (e.g., during infancy, pre-adolescence, transitioning to independence after college, after retirement).

There are some overarching issues that can impact segments the population at all ages. Socially disadvantaged groups are at higher risk for oral diseases (Watt et al., 2018). There are access issues such geography (i.e. living in rural areas) and the cost of care (Fisher-Owens et al., 2016; Glick et al., 2016). The lack of dental insurance or inadequate insurance influences the choice to pursue dental care across all age groups (Edelstein & Chinn, 2009) .

The prevalence of poor oral care and dental disease among children has become a public health issue, gaining national attention as solutions to manage the barriers are being sought (Arthur & Rozier, 2016). Most of the focus has been on children on Medicaid as nearly 37% of children (38 million children) in the US in 2013 were on the Medicaid early and Periodic Screening, Diagnostic, and Treatment (EPSDT) or Children's Health Insurance Program (CHIP). To address this issue, an innovative policy shift in 49 of the 50 states allowed medical providers to bill for preventive oral health services (Arthur & Rozier, 2016). This policy expansion recognized that children are more likely to visit a primary care medical doctor in the first two years of life rather than an oral care provider.

A role for social workers

While social workers are not directly involved in health care, the most important lesson from the interprofessional movement is that as professionals we do not practice in a vacuum, we are interdependent on each other for the care of our clients/patients. As social workers we do not need to understand principles and techniques of dentistry, but we should have an understanding of some basic facts as to how they impact on our clients, much the same way we do with physical health issues, particularly as we are now practicing in a more interprofessional way.

Diabetes is a good example of our role and interprofessionalism. We often deliver cognitive behavioral therapy to address depression for someone with diabetes (Young-Hyman et al., 2016). We have a basic understanding of diabetes, its impact on the body and psyche. This understanding increases our engagement, empathy, and overall work with our clients. It is essential that we understand that diabetes is a medical condition that can require medications and a change in nutrition and lifestyle. We also need some basic facts about oral health and realize that adults with diabetes may consume sugar sweetened beverages and that researchers found that adults who had diabetes and consumed two or more sugar sweetened beverage were significantly more likely to have tooth loss compared to those who did not drink such beverages (Wiener, Shen, Findley, Sambamoorthi, & Tan, 2017). Such knowledge would encourage us to help our clients not only with seeking nutritional services, but also seeking dental care.

Suggesting that social workers play a more active role in understanding the impact of oral health on our clients is not novel. Other non-dental professionals (primarily physicians and nurses) do assist with oral care within their scopes of practice (Bader, Rozier, Lohr, & Frame, 2004; Poudel, Griffiths, Wong, Arora, & George, 2017). Social workers can query about oral health care issues in our psychosocial assessments, in case management, and in overall case planning. Moreover, given the lack of access to oral care across populations (Wiener et al., 2017), the social worker might be the only health professional to have an opportunity to assess some basic oral needs and to provide necessary referrals. Therefore, purpose of this paper is to highlight some of the means by which social workers can improve

oral health through referrals to dental care, counseling concerning dental care, assessments of individuals and families, and policy development (structural issues related to care).

Oral health diseases as chronic conditions can impact the life course from early childhood through adulthood and into older age (Watt et al., 2018). Caries and their progression, are driven by biological, behavioral factors (e.g., diet, self-care, and dental care utilization), and structural (i.e. socioeconomic status and social policies) (Broadbent et al., 2016). Therefore, for this paper, oral care needs where social work can intervene will be examined with a life course perspective considering the stages of prenatal and postpartum, infancy, early childhood, middle childhood and adolescence, young adulthood, adulthood, and older persons.

Prenatal and postpartum.

Many pregnant woman do not receive adequate dental care during pregnancy (Marchi, Fisher-Owens, Weintraub, Yu, & Braveman, 2010). The guidance from the American Dental Association' Council on Advocacy for Access and Prevention (Department of Scientific Information, 2019) is that preventive, diagnostic and restorative dental treatment is safe throughout pregnancy. There remain many misconceptions about oral health and pregnancy, ranging from beliefs that babies take calcium from the mother's teeth to a mother will lose a tooth for each child. On the other hand, there are concerns about oral health resulting from hormonal changes. These changes can increase the mother's risk for gingivitis(i.e. red, inflamed gingival or gum tissue) (Gürsoy, Gürsoy, Sorsa, Pajukanta, & Könönen, 2013) and periodontitis (involvement of the bony support for the teeth). Ggingivitis has a prevalence of 60-75% during pregnancy (Silk, Douglass, Douglass, & Silk, 2008). Prevention and management of gingivitis involves proper brushing and flossing (daily oral infection control).

Proper brushing and flossing are important in general, but are especially needed when pregnant women are experiencing morning sickness, cravings for sugary foods, or are having tender tissue resulting in the avoidance of daily oral infection control (Silk et al., 2008). Morning sickness increases acid exposure and the possibility of enamel erosion. A teaspoon of baking soda in a cup of water as a mouth wash can be used to neutralized the acid (Silk et al., 2008); however, just rinsing with water if baking soda is not available can make a significant difference. A social worker can remind the mother to brush with fluoride toothpaste twice a day, (American Dental Association, 2012) floss daily, and provide general information and reminders. As social workers, the questions we can ask focus on the mother's health and oral hygiene, and access to dental care. Pregnant women should encouraged to have regular oral care during pregnancy (Nicolau, Marcenes, Bartley, & Sheiham, 2003) Social workers can help promote better oral health and to assist with finding dental services.

Infancy (0-11 months).

In the early period following the birth of baby the parent-infant relationship focuses on bonding and soothing techniques to calm the baby (Dayton, Walsh, Oh, & Volling, 2015). As social workers we understand that identifying and employing these soothing behaviors is an important developmental task that leads to the infant's own capacities for self-regulation. Often parents use pacifiers as a soothing device. Good oral care indicates that parents should avoid using their own mouths to clean a pacifier, or to provide the pacifier to the baby if it falls to the floor. The baby's mouth should be wiped after breastfeeding or bottle feeding. Once a baby begins to eat more solid foods (and has teeth) utensils, food, and drink should not be shared between the baby and another person.

Dentists recommend that babies' gingivae can be cleaned with a damp cloth or a soft tooth brush with plain water. As teeth erupt and until age 3 years, a soft toothbrush with a smear or rice-sized amount of fluoridated toothpaste should be used twice a day (American Pediatric Dentists, 2020).

Infants should not be put to sleep with a bottle or a sippy cup with milk, high sugar beverages such as fruit juice or soda. Children should not have ad libitum use of a bottle or sippy cup in that each sip decreased the pH of the mouth for twenty minutes, thereby increasing the risk for dental caries. This is particularly true during night as the liquids that are not totally cleared from the mouth pool around the teeth(Hagan, Shaw, & Duncan, 2008). To help prevent dental caries food and drink should be limited to meals and snacks and not available all day.

Helping your client's infant find a "dental home" will be important soon after the first tooth erupts. The first dental visit should be after the first tooth erupts or before the baby's first birthday

(Workgroup Bright Futures Periodicity Schedule Committee on Practice, 2017). The dental home is like a medical home in that it will be the primary location where the child will receive ongoing oral health care in a comprehensive and coordinated manner.

Early childhood (1-4 years).

The importance of understanding oral health as part of ensuring overall health for children is not well recognized by parents, guardians, early childhood staff, and some medical providers(American Pediatric Dentists, 2020). This inadequacy is particularly notable for parents of children under the age of three years. The public is not educated in a systematic way about the need for regular dental visits, what constitutes good oral hygiene, and importance of how nutrition and can impact oral health (American Pediatric Dentists, 2020).

The most prevalent chronic childhood health condition in the United States is dental caries (Henshaw et al., 2018). Caries is often associated with pain and difficulty in chewing/swallowing, premature tooth loss, disrupted development (Lee & Somerman, 2018) and, if left unchecked, has resulted in death. One condition seen with newly erupting teeth is tender gingiva. Although commercial teething rings that meet ADA criteria are helpful, some parents offer jewelry and other items not appropriate for teething to their children.

One concern associated with newly erupted teeth is that parents are not aware of the need to brush the few teeth that the child has. As a result, early childhood caries (ECC) develop. The caries was previously called "baby bottle syndrome" and "nursing caries." Both terms suggested formula and breast milk were the reasons for the caries, therefore the terms are not descriptive of the circumstances and are not appropriate to use.

By this time, children should be in a dental home seeing a dentist on a regular basis. However, a review of national data from the 2007 National Survey of Children's Health found that the use of preventive dental care is below national target goals. In fact only 24% of children ages 1-2 years received a preventive dental visit, compared to 88% of children ages 6-11 years (Bell, Huebner, & Reed, 2012).

It is important for children to have preventive visits by age one year. Social workers can help by suggesting clients should have their children taken for dental visits. There are structural challenges in that, although it is important to have visits by age one, many states require a referral to a dentist by age 3 (Hom, Lee, Silverman, & Casamassimo, 2013).

Although not isolated to this youngest of age groups, a strong association between child abuse and very severe caries and should be seen as an early symptom of child abuse and/or neglect (Smitt, de Leeuw, & de Vries, 2017). This is why it is important for social workers to assess self-reports of child who have mouth pain and suggest a referral to a dentist. It should be noted that both social workers and dentists are mandated reporters of child abuse (Katner, Brown, & Fournier, 2016). This is important as over 50% of cases of child abuse include injuries to the head, neck, and face (Fisher-Owens, Lukefahr, & Tate, 2017). Experts have reported that children of abuse are more likely to have gingivitis, cavities and other oral health problems than children in the general population.

At age 3 years, parents should brush their children's teeth with a pea-sized amount of fluoridated toothpaste on a soft brush for two minutes, twice a day (American Dental Association, 2020). Parents need to help children brush their teeth until the child is about 6 or 7 years old when the child has developed the fine motor skills that are needed to brush his or her teeth effectively (American Dental Association, 2020).

Parental attitudes and behaviors towards oral care have been shown to have a longitudinal influence on children's oral health, not only in childhood, but well beyond adolescence and into adulthood. Isaksson (2018) found that tooth brushing with fluoride toothpaste in early childhood less than twice a day and the mother's perception of her own oral care as "less than optimal' were critical risk factors for the development of caries for the child at age 20 years.

Middle childhood (5-10 years) into adolescence (11-21 years).

Middle childhood and early adolescence are times of growth and development. As children grow in independence, developing good oral health habits is important. A relationship between socio-economic and biological risk factors in the life course have been demonstrated in the development of

caries by age 13 years (Nicolau et al., 2003). Interestingly, Nicolau and colleagues (2005) found that adolescents who were the second or third child in the family were 1.90 times more likely to have decayed, missing, or filled teeth (DMFT) than the first born. Additionally, they found that being taller was protective of having cavities.

Dental neglect in childhood can be seen a willful failure by the parent or guardian to ensure access and follow up for oral care for his or her child (American Academy of Pediatrics, 2017). However, some neglect is due to parental lack of oral health care knowledge, inability to pay for care, lack of trust of the health care system, lack of transportation, and/or the lack of the perceived value of oral health care (Fisher-Owens et al., 2017). Working with the dental community to help a child gain access to necessary oral care treatment can reduce pain and prevent the development of worse outcomes. If not addressed, poor oral health can impact a child's ability to concentrate in school which affects learning, interferes with proper nutrition and communication, and can impact normal growth and development, including reducing self-esteem, increasing the likelihood for depression, and reducing quality of life (Bhatia et al., 2014). Children with dental abnormalities are more likely to be bullied (Fisher-Owens et al., 2017).

Social workers should be aware that children and adolescents who are already part of a child welfare system are especially vulnerable to having unmet dental needs because of variation in state-level policy that provides or deters access to preventive care (Lin et al., 2012). Also, children who are foreign-born minority children and children who cannot speak English, are more likely to not have preventive oral care (Lin et al., 2012). Some of the access issues are related to the low acceptance rate of dentists of Medicaid, the low reimbursement of Medicaid, and the related administrative burdens (Decker, 2011). The insurance limitations and other factors such as the families' ability to pay, level of education, language ability, immigration status, racial/ethnicity and where the family lives create disparities that impact access to dental care, with the greatest population impact being caries for these children (Watt et al., 2018).

The access issues for children and adolescents to receive dental care are familiar to social workers when navigating health care and social services for our clients (Steinberg, Valenzuela-Araujo, Zickafoose, Kieffer, & DeCamp, 2016). As with access to physical health care, children from less wealthy families are at a disadvantage over their wealthier and healthier peers (Watt et al., 2018) . Without proper dental care, these poorer children who are already at greater risk for caries face pain and the consequences of that pain as do younger children where education, socialization, and quality of life is negatively impacted.

During adolescence, many young people start driving and experimenting with some adult behaviors such as substance use and sexual activity. While this activity is normative development, they may have short and long term health impacts even in oral health (Mulye et al., 2009). For example, oral sex has become more common among adolescents. Habel and colleague (2018) report that youth are more likely to engage in oral sex because they feel it is less risky than vaginal sex. This increased engagement in oral sex heightens the need for good oral health practices. The mouth should be free from bleeding gums, sores on the lips, and cuts because these conditions increase the risk for transmission of infection, particularly for HIV, herpes, syphilis, gonorrhea, genital warts (HPV), and hepatitis (Habel, Leichliter, Dittus, Spicknall, & Aral, 2018). Regular oral health evaluations are strongly advised for adolescents who engage in oral sex. With awareness of these issues, it presents opportunities for a social worker to engage parents and children to provide counseling, education, and resources.

Young adulthood (22- 35 years).

Young adulthood is period of less physical growth, and more transitions into maturity such as those involved with starting college, joining the military, or starting their first jobs. Many of these young adults lose access to dental insurance when they are no longer eligible for either their parent's dental insurance plans or from state Medicaid plane. Young adults have their own specific challenges to complete daily oral infection control behaviors; however, good oral- health-related beliefs held as adolescents are shown to be related to better adult oral health (Broadbent, Thomson, & Poulton, 2006). A study found that young adults with consistently strong oral hygiene beliefs and practices were more likely to have fewer missing teeth due to caries, less periodontal disease, better overall oral health

hygiene, and endorsed a higher rating of their oral-health-related quality of life than those who did not hold consistent strong beliefs in oral health care from adolescence (Broadbent et al., 2006).

The young adult age period is noted for emergence of mental health conditions. Seventy-five percent of mental health conditions develop by age 24 years (National Alliance on Mental Illness, 2019). Mental health conditions are associated with oral health conditions, yet, the oral care of those with mental illness is often neglected (Khokhar, Ahmad, Andrew, & Tosh, 2011). Mental illness can impact the oral health of individuals in a variety of ways. For example, individuals with bulimia often have dental erosion from stomach acid from self-induced vomiting attacking dental enamel (Kisely, 2016). Individuals with mood disorders, such as depression, can develop caries due, in part, to self-neglect (not brushing and flossing) and, in part, to lack of saliva associated with antidepressant medication (Kisely, 2016). Poor oral health in individuals with mental illness has a significant impact on overall quality of life, daily functioning (e.g., eating, communicating), how the individual is perceived, and his/her self – esteem (Khokhar et al., 2011).

Individuals with severe mental illness (SMI) have a greater risk of developing oral disease and requiring more extensive oral treatment than those in the general population (Khokhar et al., 2011). Individuals with SMI are at higher risk of developing periodontal disease, mostly due to the side effects of their psychotropic medications such as antipsychotics, antidepressants, and mood stabilizers and are 2.8 times more likely to lose all of their teeth compared to those in the general community (95% CI = 1.7-4.6) (Kisely, 2016). Overall, individuals with SMI are at risk for oral diseases for a variety of reasons including lack of willingness to see a dentist, poor oral hygiene, fear of dentists, and prohibitive costs of dental care and general access to services (Kisely, 2016). Social workers need to be aware of the barriers that individuals with SMI and other types of mental illness, face to help these individuals navigate systems and provide counseling and support for them to engage in better oral self-care.

Adulthood (36-64 years).

Adults remain susceptible to dental caries and periodontal disease is a concern for this group (Nazir, 2017). Periodontal disease occurs when the supporting tissues surrounding affected teeth are destroyed. Bone loss is a characteristic of periodontal disease. Tobacco use is the most significance risk factor for periodontal disease. Tobacco use also interferes with periodontal management (Emanuel et al., 2018).

As noted earlier, where one lives also impact oral health. Rural areas, in general, are known for increased risk of poor oral health, with rural residents having more missing teeth than their urban counterparts (Gaber, Galarneau, Feine, & Emami, 2018). In particular, the Appalachian region of our nation experiences the "silent epidemic" of poor oral health in which 98% of the Appalachian population has dental caries by age 44 years (Savage et al., 2018).

The rates of unhealthful use among adults, ages 50-64 years, are greater than the rates among adults ages 65 years and above (Wu & Blazer, 2011). The use of methamphetamines (MA) has been closely linked with poor oral health. "Meth Mouth" refers to pervasive tooth decay associated with MA (Mukherjee, Dye, Clague, Belin, & Shetty, 2018). Mukherjee and colleagues (2018) conducted a study that recruited participants from Los Angeles County, California. Sociodemographic data, and data from dental examinations using the National Health and Nutritional Examination Survey protocol were collected. Researchers found that 78% of those participants who used MA had 3 or more root caries (i.e. caries near the gingiva rather than on the biting surface of the tooth). Oral health issues affected participants who used MA over age 45 years compared with younger adults in that they were more likely to report having a less satisfying life [OR 1.72; 95% CI (1.22, 2.43)], an affected sense of taste [OR 1.72; 95% CI (1.19, 2.47)], embarrassment about their appearance [OR 1.53; 95% CI (1.08, 2.16)], and OHRQoL.

As with other age groups, social workers need to be aware of the components of basic oral care such as brushing and flossing and regular dental evaluations, but with the increased unhealthful drug use, social workers need to be vigilant. Social workers can provide support and counseling for these individuals and make referrals if we have basic knowledge of oral care.

Older persons (65 years and older).

Between 2000 and 2050, the population is projected to double to 83.7of those 65 years and older is projected to double to 83.7 million people for ages 65 years and above. (Dhooper, 2012).

Regular dental visits can help dentists detect issues early and provide care when the extent of care is minimal. Utilization of dental services is impacted by gender, age, income level, education level, residence, general health status, race and ethnicity, and dental insurance status (Wall, Vujicic, & Nasseh, 2012); 70% of those 65 years and older in the US do not have dental insurance (Raphael, 2017) and 20% of Medicare beneficiaries have not visited a dentist in five years (Huang, Saulsberry, Damico, RAchel, & Neuman, 2012).

Having caries is the most significant oral health problem for the older adults (Thomson & Ma, 2014). Poor oral health for older people has been associated with several chronic conditions including malnutrition, cognitive decline, and places the individual at higher risk for cardiovascular disease and infectious respiratory diseases (Wang, Huang, Chou, & Yu, 2015). Having chronic dry mouth, a prevalent condition caused by medications such as antidepressants, respiratory medications, heart medications, and some opioid-containing analgesics, can impact many aspects of the individual's life including speaking, eating, and wearing dentures (Murray Thomson, 2014).

Concerns about drug use in the older population extends beyond prescription drugs as the prevalence of cannabis use among those aged 65 years and older appears to be increasing in the US, rising to the point of becoming another public health concern (Berger, 2019). Cannabis can also cause a lack of saliva. Since saliva buffers acids in foods, helps clear food from the mouth, and has antimicrobial properties, the lack of saliva is a known risk factor for caries (Cho, Hirsch, & Johnstone, 2005). Cannabis use has been found to promote a higher incidence of caries developing on the smooth side of teeth (i.e. where brushing can reach), and it is reported that cannabis users brush their teeth less frequently than tobacco users (Schulz-Katterbach, Imfeld, & Imfeld, 2009). Despite this evidence, older adults are less likely to be screened for unhealthy substance use (Le & Palamar, 2019).

While there is some evidence of cognitive decline associated with poor oral health in the older population, the association is not clear. A systematic review by Wu and colleagues (2016) found some studies supported the association between poor oral health and decreased cognitive status while others did not. This inconsistency in the evidence suggests that social workers should not pre-judge a client's cognitive status if he or she has apparent poor oral health.

Older persons represent a very fast-growing group. Medicare, in general, does not cover dental care (Center for Medicare and Medicaid Services, 2020), but in some states Medicaid will cover dental care for older people (Center for Medicare and Medicaid Services, 2019). These limitations in dental coverage is a significant barrier for those who are older. Transportation to services is also an issue. Social work can assess for access issues and help the client with navigating for services and transportation. The general reminders for good oral care and nutrition is also important for this age group.

Conclusion

Health care is more than just physical health and mental health, attention also needs to be given to how physical health, mental health, and oral health interact. As with physical and mental health, social workers do have a role to play in the promotion of good oral health across the life course. While there may be some barriers to social workers addressing oral health concerns, like other disciplines our confidence could be built through workshops and training modules working in collaboration with dentists. Working with interdisciplinary team members will heighten social work's awareness of the various health concerns. Social work offers unique communication, coordination, and counseling skills to support overall patient care, we can play an important role in promoting oral health care for our clients and referrals to services to address issues related the social determinants of health.

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