

## Appendix S1

### Predictors of Dental Care Utilization in North Central Appalachia in the USA

#### Methods

##### Participants

The sample included 774 Caucasian/White (89.2%), 79 African American/Black (9.1%; all but one from Pennsylvania), 6 Hispanic (0.7%), 1 Native American/Alaskan Native (0.1%), 1 Asian (0.1%), and 5 “more than one” or “other” race/ethnicity (0.6%) participants. Race/ethnicity data were missing for 2 individuals (0.2%).

##### Dental Fear Survey (DFS)

The DFS<sup>22</sup> has extensive psychometric information about its properties and use worldwide<sup>12</sup>. It assesses dental care-related anxiety and fear with 20 items, separately including eight items about “Avoidance/Anticipatory Fear,” six items about “Fear of Specific Dental Stimuli,” five items about “Physiological Arousal” and one omnibus, general item. Response options are based on a five-point Likert-type scale: 1-never/not at all, 2-once or twice/a little, 3-a few times/somewhat, 4-often/much, and 5-nearly every time/very much. Higher scores are indicative of greater dental care-related anxiety and fear.

##### Oral Health Fatalism Scale (OHFS)

As noted in the paper, the OHFS was modeled after the fatalism subscale of the Multiphasic Assessment of Cultural Constructs – Short Form (MACC-SF<sup>25</sup>). The OHFS included four items, “If you have a problem with a tooth, it’s better to have it pulled because you’re probably going to lose it in the end anyway”, “Getting your teeth cleaned every six months really doesn’t make a difference in whether you keep your teeth”, “There are a lot of dental problems that can not be prevented, even if you brush your teeth, use dental floss, and go to the dentist

regularly”, and “Whether you keep your teeth or lose them is mostly a matter of luck”. , using a four-point Likert-type scale: 1-definitely false, 2-somewhat false, 3-somewhat true, 4 – definitely true. Higher scores indicate greater fatalistic beliefs.

#### Time of Data Collection vis à vis Public Assistance, Dental Insurance, and Availability of Dental Services

The data collection for COHRA1 was from 2003 to 2009. Across the time of data collection, Medicaid and other public assistance for oral health care differed between West Virginia and Pennsylvania. Medicaid services in West Virginia were basic, typically allowing for extractions in adults, while in Pennsylvania, some additional but still limited services (e.g., restorations) were available. Professional dental services were available in all the communities engaged in this research over the entire course of the data collection.

Status regarding dental insurance was assessed via this item: “What type of dental insurance do you have?” (and also included an option for one’s children, which is not relevant to this paper). Response options were “None”, “Private”, “Medicaid”, “ACCESS”, “Gateway”, “CHAMPUS”, or “Other”. As noted in the paper, this item was dummy-coded such that “none” was coded as “0” and any indication of six other private and public assistance options was coded as “1,” regardless of type.

#### Education and Household Income

Education (i.e., “What is your highest educational degree or certificate?”) and total household income (i.e., “What is the total yearly income for everyone in the household put together?”) were assessed via self-report and treated as continuous variables.

## Discussion

As already noted, insurance coverage for dental care has varied somewhat over the last decade in the area of Appalachia under study. Additionally, 20-64 year olds presently are utilizing dental care even less than in prior years. The results of this paper may then be interpreted as a conservative estimate (e.g., it could be that even fewer are utilizing care, resulting in stronger effects).

The results of this study show that when taking environmental factors such as insurance and state residency into account, issues such as dental care-related anxiety and fear may not affect utilization as strongly as may have been previously assumed. Also, this study includes attitudinal measures such as fatalistic attitudes toward oral health and behavioral indicators of one's investment in their own oral health and how much they value their oral health. Future studies could benefit from collecting information on other potential confounders such as attitudes toward medical care/illness and objective clinical diagnoses. All in all, this study contributes new ideas for further study that include both public policy and individual-level factors.