

## BRIEF COMMUNICATION

**Poor oral health as an obstacle to employment for Medicaid beneficiaries with disabilities**

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**Keywords**

dental Medicaid programs; disability insurance; access to health care.

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**Abstract**

**Objectives:** To inform policy with better information about the oral health-care needs of a Medicaid population that engages in employment, that is, people ages 16 to 64 with Social Security-determined disabilities enrolled in a Medicaid Buy-In program.

**Methods:** Statistically test for significant differences among responses to a Medicaid Buy-In program satisfaction survey that included oral health questions from the Centers for Disease Control and Prevention's Behavioral Risk Factor Surveillance System and the Oral Health Impact Profile (OHIP) to results for the state's general population and the US general population.

**Results:** All measures of dental care access and oral health were significantly worse for the study population as compared with a state general population or a US general population. Differences were particularly pronounced for the OHIP measure for difficulty doing one's job due to dental problems, which was almost five times higher for the study population.

**Conclusions:** More comprehensive dental benefits for the study population could result in increased oral and overall health, and eventual cost savings to Medicaid as more people work, have improved health, and pay premiums for coverage.

**Introduction**

People with disabilities are a dental disparity population at greater risk for poor oral health than other members of the general population (1). Because poor oral health, in turn, is associated with systemic infection and multiple chronic health conditions it can jeopardize overall health outcomes, particularly among people with existing chronic conditions or disabilities (2). Long-term effects of poor oral health can, therefore, threaten work efforts of people with disabilities and diminish the promise of work incentive programs to increase their independence. Yet in 22 states Medicaid beneficiaries with disabilities have no or only emergency dental coverage and only 16 states provide full dental coverage (3).

Kansas' Working Healthy program, one of 44 state Medicaid Buy-In programs nationally, is a work incentive program that allows people ages 16 to 64 with Social Security-determined disabilities to work and maintain Medicaid coverage, even when their income and assets are higher than normally allowed by Medicaid. Participants pay a sliding-

scale premium for coverage if their income is above the federal poverty level, thus offsetting some of their medical costs (4,5). Their dental coverage is limited, like in many other states, to emergency dental services and extractions.

As the Working Healthy program evaluators since its inception in 2002, we annually conduct a satisfaction survey of participants. Throughout the years we observed that survey respondents consistently indicated dental or oral health needs in open-ended questions about ways to improve their Medicaid coverage. For example, one respondent made the following plea:

Dental services are needed very badly. I need work done [and am] not a good candidate for dentures. Any infection can go directly to my heart – potentially fatal or a long expensive stay in ICU. The dental work would be cheaper than ICU!

Another respondent simply noted, "I need dental work, [because] medication rots out my teeth." The frequency and magnitude of such comments suggested further study of oral health was warranted.

## Methods

To better quantify and understand oral health-care needs of this population, we included in the 2010 Working Healthy satisfaction survey a set of oral health questions from the Centers for Disease Control and Prevention Behavioral Risk Factor Surveillance System (BRFSS) and the Oral Health Impact Profile (OHIP) (6,7). Using two-tailed z-tests to identify significant differences in proportions, we compared the Working Healthy enrollees' responses to BRFSS items with BRFSS results for Kansas' general population and the OHIP item responses to the US population (6,8). We also conducted analysis of variance (ANOVA) to test for differences in dental measures within the study population.

The three BRFSS items included in the Working Healthy survey were:

1. How long has it been since you last visited a dentist or a dental clinic for any reason?
2. How many of your permanent teeth have been removed because of tooth decay or gum disease?
3. How long has it been since you had your teeth cleaned by a dentist or dental hygienist?

The three OHIP items in the Working Healthy survey were:

1. Do you have painful aching in your mouth?
2. Do you find it uncomfortable to eat any foods because of problems with your teeth, mouth or dentures?
3. Do you have difficulty doing your usual job(s) because of problems with your teeth, mouth or dentures?

The Working Healthy sample consisted of 433 survey respondents with an average age of 48.9 years [standard deviation (SD) = 10.1; range 21-64]; 56.1 percent were female. The average age of the 2010 Kansas BRFSS sample (ages 18 to 64 selected for comparability) was 41.0 (SD = 13.0), and 49.3 percent of this sample were female (6). Similarly, the OHIP national sample average age was 43 (8). Other demographic characteristics of the Working Healthy sample and Kansas BRFSS sample are presented in Table 1.

The authors' institutional Human Subjects Committee, which is a federally recognized institutional review board, approved this study under the guidance set forth in the report of the National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research. Further, Health Insurance Portability and Accountability Act privacy standards were also observed in all aspects of the study.

**Table 1** Demographics for Working Healthy 2010 Survey Respondents and Kansas BRFSS Weighted Sample

| Characteristic                            | Working healthy survey respondents (n = 433) (%) | Kansas BRFSS weighted sample* (n = 5,560) (%) |
|---|--|---|
| <b>Race</b>                               |  |   |
| White                                     | 83.8   | 90.1  |
| Black                                     | 5.1  | 3.2   |
| Multiracial                               | 3.9  | 1.9   |
| Native American/Hawaiian/Pacific Islander | 2.1  | 1.0   |
| Asian                                     | 0.2  | 0.6   |
| Other                                     | –  | 2.8   |
| Undisclosed/missing                       | 4.8  | 0.4   |
| <b>Ethnicity</b>                          |  |   |
| Hispanic/Latino(a)                        | 2.5  | 6.8   |
| Non-Hispanic/Latino(a)                    | 92.6   | 93.0  |
| Undisclosed/missing                       | 4.8  | 0.2   |
| <b>Primary disability type</b>            |  |   |
| Mental illness†                           | 35.6   | –   |
| Physical and Traumatic Brain Injury       | 23.6   | –   |
| Chronic illness‡                          | 20.6   | –   |
| Intellectual/Cognitive§                   | 14.5   | –   |
| Sensory                                   | 3.0  | –   |
| Undisclosed/missing                       | 2.8  | –   |
| <b>Level of education</b>                 |  |   |
| Less than high school                     | 9.0  | 6.1   |
| High school diploma or equivalent         | 39.5   | 25.0  |
| Any postsecondary education               | 48.7   | 68.8  |
| Undisclosed/missing                       | 2.8  | –   |

\* BRFSS percentages reported have been weighted according to Centers for Disease Control and Prevention guidelines and formulas for probability of household selection and nonresponse; and represent respondents between 18 and 64 years of age.

† Mental Illness category includes such conditions as schizophrenia, bipolar disorder, and depression.

‡ Chronic Illness category includes such conditions as end-stage renal disease, lupus, epilepsy, HIV/AIDS, and cystic fibrosis.

§ Intellectual/Cognitive category includes such conditions as intellectual disability, learning disability and attention deficit hyperactivity disorder.

BRFSS, Behavioral Risk Factor Surveillance System.

## Results

Statistically significant differences existed between the general Kansas population and Working Healthy survey respondents on all measures of dental care access and oral health (Table 2). Working Healthy participants were much more likely to be missing teeth due to decay or gum disease, and were much less likely to have had their teeth professionally cleaned or to have visited a dentist or dental clinic in the last year compared with Kansans as a whole.

Working Healthy participants also had significantly greater (i.e., worse) scores than the US general population on all three of the OHIP measures included in the survey ( $P < 0.0001$ ). Participants reported experiencing high rates of oral pain, with 38 percent having occasional or frequent pain. More than half (51.1 percent) also reported at least occasionally having problems eating due to dental problems. Finally, one in six reported at least occasionally having difficulty doing their usual job(s) because of problems with their teeth, mouth, or dentures. Importantly, this rate of job-related difficulty is almost five times higher than that reported for the general population. As one of the survey respondents noted, "If you really think about it, if you have

a severe toothache and you can't get it taken care of, you're not going to go to work, right?"

Within the Working Healthy sample, people with chronic illnesses (e.g., cystic fibrosis, diabetes, HIV/AIDS, lupus) as their primary disability had significantly worse oral health measures than all other disability groups for missing teeth,  $F(1, 416) = 10.427, P = 0.001$ ; time since last seeing a dentist,  $F(1, 416) = 10.099, P = 0.002$ ; and having a professional cleaning  $F(1, 408) = 15.846, P < 0.001$ . Conversely, people with intellectual disabilities had significantly better scores ( $P < 0.005$ ) on five of the dental questions asked (all except time since last visiting a dentist). A possible explanation for this disability-related discrepancy is that, through November 2009, the home and community-based services waiver program for people with intellectual disabilities included full dental coverage; some of the Working Healthy participants with intellectual disabilities may therefore have had better access to care in the year prior to the survey. Older individuals (age 50 and older) also had significantly worse scores on all the dental questions ( $P < 0.05$ ), except difficulty doing their job. Finally, participants making less than \$10 per hour scored significantly worse on the measure of when they had last had their teeth cleaned,  $F(1, 366) = 4.909, P = 0.027$ . Other

**Table 2** Working Healthy 2010 Survey Responses Compared with Kansas BRFSS Weighted Sample or US Population

| Items  | Working healthy enrollees (%) | Comparison population (%) | P value  |
|--|-------------------------------|---------------------------|----------|
| BRFSS items compared with Kansas BRFSS†  |                               |                           |          |
| No teeth missing due to decay or gum disease‡  | 35.7                          | 66.3                      | 0.0001*  |
| 1-5 teeth missing due to decay or gum disease  | 31.8                          | 24.5                      | 0.0008*  |
| ≥6 teeth missing due to decay or gum disease   | 18.9                          | 6.4                       | <0.0001* |
| All teeth missing due to decay or gum disease  | 13.6                          | 2.9                       | <0.0001* |
| Teeth professionally cleaned in past 12 months¶  | 39.3                          | 72.1                      | <0.0001* |
| ≥1 year since teeth professionally cleaned   | 13.1                          | 8.9                       | 0.0042*  |
| ≥2 years since teeth professionally cleaned  | 14.3                          | 7.4                       | <0.0001* |
| ≥5 years ago since teeth professional cleaned  | 26.2                          | 11.0                      | <0.0001* |
| Teeth never professionally cleaned   | 7.1                           | 0.7                       | <0.0001* |
| Visited dentist or dental clinic in past 12 months§  | 48.7                          | 72.3                      | <0.0001* |
| ≥1 year since visited dentist or dental clinic   | 15.2                          | 9.7                       | 0.0003*  |
| ≥2 years since visited dentist or dental clinic  | 15.2                          | 7.8                       | <0.0001* |
| ≥5 years since visited dentist or dental clinic  | 19.6                          | 9.8                       | <0.0001* |
| Never visited a dentist or dental clinic   | 1.4                           | 0.5                       | <0.0001* |
| OHIP items compared with US population for percentage that had problem at level of occasional or above |                               |                           |          |
| Painful aching•  | 38.6                          | 19.5                      | <0.0001* |
| Uncomfortable to eat∞  | 51.4                          | 16.8                      | <0.0001* |
| Difficulty doing usual job(s)•   | 16.0                          | 3.4                       | <0.0001* |

\*  $P < 0.01$ .

† BRFSS percentages reported have been weighted according to Centers for Disease Control and Prevention guidelines and formulas for probability of household selection and nonresponse.

‡ Kansans  $n = 5,504$ ; Working Healthy  $n = 428$ .

¶ Kansans  $n = 5,250$ ; Working Healthy  $n = 420$ .

§ Kansans  $n = 5,521$ ; Working Healthy  $n = 429$ .

• US  $n = 4,907$ ; Working Healthy  $n = 427$ .

∞ US  $n = 4,907$ ; Working Healthy  $n = 430$ .

BRFSS, Behavioral Risk Factor Surveillance System; OHIP, Oral Health Impact Profile.

demographic characteristics, such as race, ethnicity, location, and number of hours worked were not associated with significant differences on any of the dental measures among the Working Healthy participants.

## Discussion

More than half of Working Healthy participants had not visited a dentist in the prior 12 months and 60 percent had not had their teeth cleaned in that time period. Compared with the general population, the Working Healthy group had significantly greater rates of oral pain, difficulty eating, and difficulty working due to dental problems. This group's lack of regular dental care has serious health implications, particularly for those experiencing chronic health conditions exacerbated by poor oral health. For a Medicaid population that engages in employment to help offset Medicaid costs, poor dental health also may limit work efforts both in the short term in the form of acute or chronic oral pain, and in the long term in the form of decreased health over time. Cuts to adult dental services in Medicaid programs have been shown to result in minimal cost savings to Medicaid and in likely cost shifting to other state or federally funded programs (9,10). For Medicaid beneficiaries participating in work incentive programs, lack of coverage for dental services may result in increased Medicaid costs if oral health issues decrease or prevent employment efforts. Conversely, coverage of more comprehensive dental benefits could result in increased oral and overall health, increased work efforts, and eventual cost savings to Medicaid as more people paid premiums for coverage and, potentially, decreased utilization of other health services (9).

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