Child and Parental Mental Health Impairment and Pediatric Dental Care Utilization in the United States, 2017-2021

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Background

More than one in ten U.S. children and more than one in five U.S. adults suffer from mental health (MH) disorders.[1,2] MH disorders can negatively impact patients' physical and overall well-being by altering how patients feel, think, act, and make health-related decisions.[3] Mental illnesses can cause MH impairments such as decreased interest, generalized fatigue, and more in both children and adults, which can negatively affect oral health behaviors.[3-9] This study investigates the associations between MH impairment (pediatric and parental), parental MH care, and pediatric dental care utilization.

Methods

This cross-sectional study uses U.S. nationally representative data from the 2017, 2019, and 2021 Medical Expenditure Panel Survey (MEPS), which is publicly accessible and deidentified. This study is not human subjects research and did not require an institutional review board review.[10] Data selection and analysis flowchart is depicted in Figure 1. We defined MH impairment in children and parent (at least one) as follows:

Child MH impairment: Columbia Impairment Scale (CIS), a validated psychometric assessment measuring serious emotional disturbances in children ages 5-17. Score of 15 or greater suggests clinically significant functional impairment.[12]

Parental MH impairment: at least one of three measures:

1) Fair or poor self-reported mental health status on a five-point scale (excellent, very good, good, fair, or poor)
2) Patient Health Questionnaire (PHQ-2) score greater than 2, indicating depressive symptoms.[13,14]
3) Kessler Index (K6) score greater than 12, indicating non-specific psychological distress.[15]

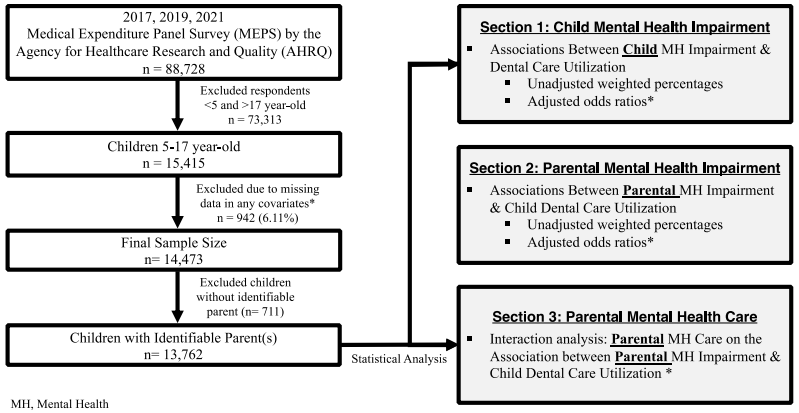
Child dental care utilization was defined as at least one dental visit within a survey year for different dental visit types:

- Preventative
- Restorative
- Oral Surgery
- Overall Dental Care

The associations between MH impairment (child and parental), parental MH care, and child dental care utilization were assessed using logistic regressions. Regression coefficients were reported in odds ratios (OR) with 95% confidence intervals (CI).

Regressions controlled for age, sex, race/ethnicity, family income, survey year, geographic region, dental insurance status, parental average age, single-parent household status, and number of children in the household. Analyses were conducted in Stata, version 18.0 (StataCorp LLC). For all significance tests, α level of 0.05 was used.

Figure 1. Sample Data Flowchart

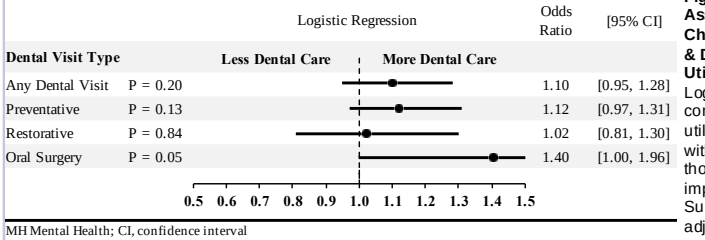


MH, Mental Health

* Covariates: age, sex, race/ethnicity, family income, survey year, geographic region, dental insurance status, parental average age, single-parent household status, and number of children in the household

Section 1: Child Mental Health Impairment

Figure 2. Adjusted Association Between Child MH Impairment & Dental Care Utilization



MH Mental Health; CI, confidence interval

Adjusted for sex, age group, geographic region, race/ethnicity, family income, survey year, dental insurance status, average parental age, single parent household status, number of children in the household

Data source: 2017, 2019, 2021 Medical Expenditure Panel Survey

Figure 2. Adjusted Association Between Child MH Impairment & Dental Care Utilization

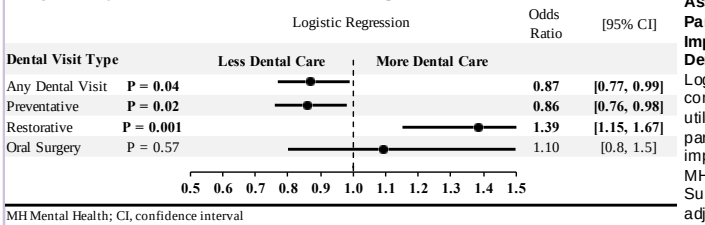
Logistic regression comparing dental care utilization in children with MH impairment to those without MH impairment. Survey weights used to adjust for national representation. α level of 0.05 was used. Error bars show 95% CI.

➢ **Key Takeaway**

- Child MH impairment is not associated with differential dental care utilization

Section 2: Parental Mental Health Impairment

Figure 3. Adjusted Association Between Parental MH Impairment & Child Dental Care Utilization



MH Mental Health; CI, confidence interval

Adjusted for sex, age group, geographic region, race/ethnicity, family income, survey year, dental insurance status, average parental age, single parent household status, number of children in the household

Data source: 2017, 2019, 2021 Medical Expenditure Panel Survey

Figure 3. Adjusted Association Between Parental MH Impairment & Child Dental Care Utilization

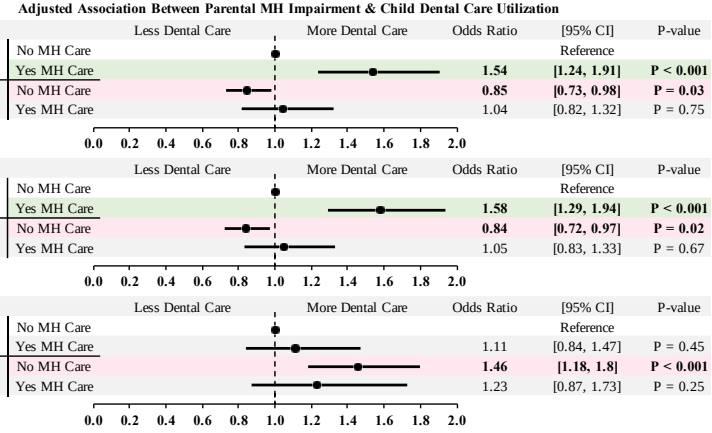
Logistic regression comparing dental care utilization in children of parents with MH impairment vs. without MH impairment. Survey weights used to adjust for national representation. α level of 0.05 was used. Error bars show 95% CI.

➢ **Key Takeaway**

- Parental MH impairment is associated with 13% lower odds of overall dental care utilization in children (OR=0.87, 95% CI= 0.77-0.99, P=.04), and 14% lower odds of preventative care (OR=0.86, 95% CI= 0.76-0.98, P=.02)
- Parental MH impairment is associated with 39% higher odds of restorative care in children (OR=1.39, 95% CI= 1.15-1.67, P=.001)

Section 3: Parental Mental Health Care

Figure 4. Interactions: Parental MH Care on Adjusted Association Between Parental MH Impairment & Child Dental Care Utilization



MH Mental Health; CI, confidence interval

Adjusted for sex, age group, geographic region, race/ethnicity, family income, survey year, dental insurance status, average parental age, single parent household status, number of children in the household

Data source: 2017, 2019, 2021 Medical Expenditure Panel Survey

Figure 4. Interaction of Parental MH Care on the Associations Between Parental MH Impairment & Child Dental Care Utilization

Logistic regression comparing the the associations between parental MH impairment and child dental care utilization in families with vs. without parental MH care . MH care is defined as at least one visit to a social worker, psychologist, psychiatrist, or mental health counselor within survey year. Survey weights used to adjust for national representation. α level of 0.05 was used. Error bars show 95% CI.

➢ **Key Takeaway**

- The associations between parental MH impairment and child dental care utilization depicted in Section 2 were most significant in children whose parent(s) have current MH impairment but have **not received MH care:**
  - 15% lower odds of any dental care (OR=0.85, 95% CI= 0.73-0.98; P=.03)
  - 16% lower odds of preventative care (OR=0.84, 95%CI= 0.72-0.97; P=.02)
  - 46% higher odds of restorative care (OR=1.46, 95% CI= 1.18-1.8, P<.001)
- In contrast, children of parents **without** current MH impairment but **still received MH care** had 54% higher odds of overall dental care utilization (OR= 1.54, 95% CI= 1.24-1.91; P<.001) and 58% higher odds of preventative care (OR= 1.58, 95% CI= 1.29-1.94; P<.001.)

Conclusion & Discussion

- Parental MH impairment was associated with 14% lower odds of preventative care, 13% lower odds of overall dental care, and 39% higher odds of restorative care in children.
- These associations were most significant in children of parents with MH impairment but **no MH care**: 16% lower odds of preventative care, 15% lower odds of overall dental care, and 46% higher odds of restorative care.
- In contrast, children of parents without current MH impairment but still **received MH care** had 54% higher odds of utilizing any dental care and 58% higher odds of utilizing preventative care.
- Parental MH impairment can negatively affect oral health promoting behaviors in children, such as decreasing odds of using preventative care and increasing odds of restorative care. This barrier could be modified with effective MH care through improving parental wellbeing, efficacy, and connectedness to healthcare resources.

References