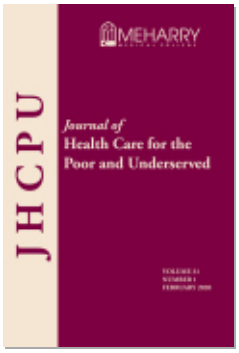
Are We Meeting Their Needs? Well-child, Dental, and Mental Health Care for Youth in Juvenile Correctional Facilities in Minnesota



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ORIGINAL PAPER

Are We Meeting Their Needs? Well-child, Dental, and Mental Health Care for Youth in Juvenile Correctional Facilities in Minnesota

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Abstract: Compared with the general population, justice-involved youth have substantially higher rates of several health conditions. Less is known about their use of health services to address these conditions. Using data from a statewide survey of 217 youth in juvenile correctional facilities and 164,832 youth in public schools, we examined self-reported health (health overall, weight status, disability, asthma, allergy, mental health) and receipt of care. Justice-involved youth reported a high number of physical health concerns; however, physical health conditions were not related to receipt of care. Youth who reported experiencing depressive symptoms with or without suicidal ideation, and those who had attempted suicide, were more likely than their peers without these mental health issues to have received mental health treatment in the past year. However, many youth with serious mental health concerns had not received treatment. Results from this study demonstrate unmet health care needs among a sample of youth in juvenile correctional facilities.

Key words: Adolescent, health status, mental health, health services, social justice, survey.

Roughly 60,000 young people are confined in juvenile correctional facilities in the U.S. each night.[1,2] Multiple health conditions—including tuberculosis, dental caries, asthma, trauma-related conditions, and reproductive health care conditions including sexually transmitted infections, pregnancy, and parenthood—have been found to be higher in youth who are incarcerated in the U.S. compared with the general pediatric population.[3–7] However, much of these data come from studies performed in the 1970s and 1990s.[8]

Youths' health problems may persist following a period of incarceration.[9] Winkelman and colleagues recently explored health indicators in a national sample of adolescents and found that youth with prior exposure to the juvenile justice system had higher rates of physical and mental health disorders after their release into the community, and that African American youth were disproportionally affected.[10] Research also suggests

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that incarceration during childhood may have lingering health effects throughout the lifespan.[11] For example, Barnert and colleagues found that exposure to incarceration as an adolescent had a negative effect on adult health outcomes, including general health, functional limitations, depressive symptoms, and suicidality.[12,13]

In addition to physical health conditions, youth who are incarcerated have been found to have high rates of mental health treatment needs.[14,15] Lyons and colleagues compared case files of youth who were incarcerated with those of youth who had been arrested but were living in the community. They found very high rates of mental symptoms in the youth who were incarcerated compared with youth living in the community, with approximately two-thirds of incarcerated youth reporting symptoms.[16]

Other studies have examined associations between youths' exposure to the juvenile justice system and their subsequent unmet health care needs. Winkelman and colleagues found that youth who had been incarcerated within the past year were three times more likely than youth without justice-system involvement to report at least one hospitalization in the preceding 12 months.[17] In addition, Aaslma and colleagues retrospectively examined this relationship by exploring unmet health care needs in a sample of young adults with prior exposure to the juvenile justice system as adolescents. They found that youth with justice system involvement were more likely to lack well-child care and more likely to require emergency care after incarceration.[18]

A combination of state and federal laws determine how youth are sentenced and the health services that are provided to them in juvenile correctional facilities.[19,20] Aggregated data collection in this decentralized system is therefore difficult. Although some studies have documented the health status of youth who are incarcerated and their unmet needs, few studies have explored these associations in a statewide sample. Several scholars have called for additional research into the physical health conditions affecting youth involved in the juvenile justice system, with the long-term goal of developing evidence-based practices that address the health care needs of this population.[21] To fill this gap, the current study used a statewide survey to describe the self-reported health status of youth in juvenile correctional facilities compared with their peers in public schools and to evaluate how justice-involved youths' physical and mental health conditions were related to their receipt of health care services.

Methods

The current study used data from the 2016 Minnesota Student Survey (MSS). The MSS is an anonymous, school-based, statewide survey of adolescents administered every three years. The MSS is administered in public schools, alternative learning centers, and juvenile correctional facilities across the state. Data for this study were drawn from the subsamples of youth surveyed in juvenile correctional facilities and public schools. In 2016, 12 juvenile correctional facilities administered the survey and 217 youth participated. In order to understand the health status and receipt of care among the youth surveyed in juvenile correctional facilities in a larger context, we compared the health status and receipt of care among the justice-involved youth with those of 168,425 youth in public schools.

Measures. *Demographic characteristics.* The survey assessed the following demographic characteristics: age, sex, and race/ethnicity. In addition, the survey included a number of measures regarding family adversity, including experience of food insecurity, homelessness, and parental incarceration, all known to affect child and adult health.[22–25] To assess for the experience of food insecurity, the following item was used: "During the last 30 days, have you had to skip meals because your family did not have enough money to buy food?" Response options were "yes" or "no." To assess the experience of homelessness youth were asked, "During the last 12 months, have you stayed in a shelter, somewhere not intended as a place to live, or someone else's home because you had no other place to stay (mark ALL that apply)?" Response options were "no", "yes—I was with my parents or an adult family member," or "yes—I was on my own without any adult family members." To assess youths' experience of parental incarceration, youth were asked, "Have any of your parents or guardians ever been in jail or prison?" Response options were "None of my parents or guardians has ever been in jail or prison," "Yes, I have a parent or guardian in jail or prison right now," or "Yes, I have had a parent or guardian in jail or prison in the past." This variable was dichotomized, with any experience of parental incarceration coded 1, or no history of parental incarceration coded 0.

Physical health indicators. Five variables were used to assess youths' physical health. For general health, youth were asked, "How would you describe your health in general?" and were given five response options: excellent, very good, good, fair, and poor. Responses were dichotomized into excellent, very good, or good (1) or fair or poor (0). Body mass index (BMI) was calculated from youths' self-reported height and weight. Body mass index was calculated as body weight in kilograms divided by height in meters squaredp Underweight was defined as below the 5th percentile; normal weight was defined as the 5th to less than the 85th percentile; overweight was defined as the 85th to less than the 95th percentile; obesity was defined as the 95th to less than 120% of the 95th percentile; and severe obesity was defined as 120% of the 95th percentile (or more) or an absolute BMI ≥ 35 kg/m.* Youth were asked "Do you have any physical disabilities, or long-term health problems (such as asthma, cancer, diabetes, epilepsy, or something else)? Long-term means lasting six months or more." Finally, two survey items were used to determine asthma and allergy prevalence in the sample: "Has a doctor or nurse ever told you that you have asthma?" and "Has a doctor or nurse ever told you that you have an allergy that requires you to carry an Epi-pen?" Response options for both items were "yes" or "no."

* The standard-relative formula described here is used for calculating the BMI of children and adolescents (sometimes called *BMI-for-age*). It places the child or adolescent on a pre-established range by calculating the percentile of the pre-established range (a range based on expert committee recommendations) into which the child's or adolescent's BMI falls. The adult formula is simpler in that the height&weight calculation results in a raw number for BMI; numbers 25-29 fall into the category *overweight* and numbers 30 and over fall into the category *obese*. The formula for children and adolescents allows one to distinguish two individuals of different ages with the same raw BMI scores since the two are each compared with age-matched scales rather than (for example) with one another.

Mental health indicators. Youths' current depressive symptoms were measured using the Patient Health Questionnaire-2 (PHQ-2)[26] depression screening tool: "Over the last two weeks, how often have you been bothered by little interest or pleasure in doing things?" and "Over the last two weeks, how often have you been bothered by feeling down, depressed, or hopeless?" with response options of "not at all" (0), "several days" (1), "more than half the days" (2), and "nearly every day" (3). Scores from these two items were combined for a total range of values from 0–6. This variable was then dichotomized to scores greater than or equal to 3 (1) and less than 3 (0), based on previous validity studies evaluating the sensitivity and specificity of this cut-point.[26] Youth were also asked, "Have you ever seriously considered attempting suicide?" and "Have you ever actually attempted suicide?" with response options of "no," "yes, during the last year," and "yes, more than a year ago."

Receipt of well-child, dental, and mental health care. To determine whether youth had received a well-visit within the past year, the following item was used: "When was the last time you saw a doctor or nurse for a check-up or physical exam when you were not sick or injured?" with response options of "during the last year," "between one and two years ago," "more than two years ago," and "never." The American Academy of Pediatrics Bright Futures Guidelines recommend a yearly visit for the duration of adolescence and early adulthood, from ages 11 to 21 years.[27] Therefore, this variable was dichotomized as follows: yes, youth reported a visit during the last year (1); and no, for all other responses (0). To determine dental care, the following item was used: "When was the last time you saw a dentist or dental hygienist for a regular check-up, exam, or teeth cleaning or other dental work?" with response options of "during the last year," "between one and two years ago," "more than two years ago," and "never." As national guidelines recommend biannual dental care throughout the adolescent years,[28] this variable was dichotomized as follows: yes, youth reported a dental visit in the last year (0); and no, for all other responses (1). To assess youths' history of treatment for mental health problems, the following item was used: "Have you ever been treated for a mental health, emotional, or behavioral problem?" with response options of "no," "yes, during the last year," and "yes, more than a year ago." If a student marked yes to both "during the past year" and "more than a year ago," the response was coded as "during the last year." Of note, as the survey is administered in a broad range of educational settings throughout the state of Minnesota, the survey does not contain specific items delineating whether care received occurred in the community or in the correctional facility.

Analysis. Statistical analysis was performed using SPSS v.23.[29] To test for a difference in mean age between the two samples a Kruskal-Wallis test was used; chi-square tests were used to test for differences in other sample characteristics (e.g., race and ethnicity, food insecurity). We used descriptive statistics to present the prevalence of health conditions, and used chi-square tests to evaluate for differences in the health conditions and receipt of health services between the youth in juvenile correctional facilities and their peers in public schools. Chi-square tests were used for the subsample of youth in juvenile correctional facilities to determine the relationships between youths' self-reported physical and mental health conditions and their receipt of well-child, dental, and mental health care.

Results

Demographic characteristics. Among the 217 youth in juvenile correctional facilities who completed the survey, 65% of the sample identified as male. Forty-six percent of the youth self-identified as White, 24% as Black/African/African American, 4.6% as American Indian/Alaskan Native, 0.9% Asian, and 17.1% identified as multiple races. Youth of color and males were disproportionately represented in the juvenile correctional facility subsample, and had higher rates of homelessness and parental incarceration compared with their peers in public schools. Additional demographic data are reported in Table 1.

Physical health. Most youth (85.2%) in the juvenile correctional facility subsample

Table 1.

PARTICIPANTS' DEMOGRAPHIC CHARACTERISTICS AND HEALTH STATUS

	Mean (SD) / %	
	Juvenile Correctional Facility	**Public School**
Age ***	16.1 (1.4)	13.8 (2.2)
Sex ***		
Male	65.9	50.5
Race ***		
American Indian or Alaskan Native	4.6	2.1
Asian	.9	5.9
Black, African, or African American	24.0	7.4
White	46.1	71.6
Multiple races	17.1	8.1
No response	7.4	4.4
Ethnicity **		
Hispanic or Latino/a	15.7	9.4
Food insecurity	6.4	4.6
Homelessness	31.2	5.5
With parents or adult family member ***	11.1	4.7
On own without adult family member ***	23.6	1.1
Experience of parental incarceration ***	58.8	16.5

Notes:
*p-value < .05
**p-value < .01
*** p-value < .001
chi-square tests were used for all categorical variables, the Kruskal-Wallis test was used for the continuous variable (age).

rated their health as excellent, very good, or good; 14.8% rated their health as fair or poor (see Table 2). Almost two-fifths (38.3%) had a body mass index classified as overweight or obese. In addition, 22.4% of youth reported a disability or long-term health condition, 20.7% reported a history of asthma, and 5.0% reported a history of an allergy that is severe enough to require the youth to carry an Epi-pen. Compared

Table 2.

PARTICIPANTS' HEALTH STATUS AND RECEIPT OF HEALTH CARE

	Mean (SD) / %	
	Juvenile Correctional Facility	**Public School**
Health status ***		
Excellent, very good, or good	85.2	93.0
Fair or poor	14.8	7.0
Body mass index ***		
Underweight (< 18.5)	3.2	17.3
Normal weight (18.5–24.9)	58.5	63.5
Overweight (25.0–29.9)	24.5	13.2
Obese (> 30.0)	13.8	6.1
Disability or long-term health condition **	22.4	15.4
Asthma	20.7	16.1
Allergy that requires Epi-pen	5.0	4.1
Long-term mental health, behavioral, or emotional problem ***	60.4	17.7
PHQ-2 >/= 3 ***	39.1	21.9
Suicide ideation ***		
In the past year	28.6	11.8
More than a year ago	13.6	8.0
Prior suicide attempt ***		
In the past year	19.2	3.6
More than a year ago	15.2	3.6
Well-child visit in past year	69.8	67.5
Dental care in past year ***	65.9	81.5
Mental health care ***		
In the past year	49.5	11.3
More than a year ago	14.1	6.8

Notes:
*p-value < .05
**p-value < .01
*** p-value < .001
chi-square tests were used for all variables.

with justice-involved youth, youth in public schools reported higher rates of excellent, very good, or good health, had lower rates of overweight or obesity, and lower rates of disability or long-term health conditions.

Mental health. A majority of the youth in juvenile correctional facilities reported long-term mental health, behavioral, or emotional problems (see Table 2). More than one-third (39.1%) of youth in the sample had a Patient Health Questionairre-2 depression screening tool score concerning for current depression. Furthermore, 28.6% of youth reported suicidal ideation in the past year, with 19.2% of youth reporting a suicide attempt during that same time period. Compared with youth in juvenile correctional facilities, youth in public schools were less likely to report a long-term mental health, behavioral, or emotional problem, have a PHQ-2 score concerning for depression, or report suicidal ideation or a recent suicide attempt.

Receipt of well-child, dental, and mental health care. In total, 69.8% of youth in the juvenile correctional facility subsample reported a well-child check-up within the past year. During the past year, 65.9% of youth reported dental care. In total, 63.6% of youth reported prior treatment of a mental health condition, with 49.5% reporting treatment within the past year and 14.1% reporting treatment more than a year ago. Youth in juvenile correctional facilities were equally likely to report a well-child check-up within the past year as were their peers in public schools, but significantly less likely to report dental care, and significantly more likely to report mental health care, compared to their peers in public schools.

Unmet needs among justice-involved youth. The focus of our main analysis was the youth in the juvenile correctional facility subsample, in order to evaluate whether health conditions were associated with receipt of health services. We tested whether the likelihood of justice-involved youth receiving health services depended on their health conditions. There were no statistically significant associations between whether a youth had a well-child check-up in the past year, and the following outcomes: self-reported health, body mass index, disability or long-term health condition, asthma, and severe allergy (see Table 3). There was a statistically significant relationship ($p<.01$) between justice-involved youths' receipt of dental care within the past year and a well-child visit the past year. Specifically, justice-involved youth who reported receiving dental care in the past year were also more likely to report having received well-child care. Additionally, there was a statistically significant relationship ($p<.01$) between justice-involved youths' self-reported mental health treatment in the past year and the following variables: positive PHQ-2 score, suicidal ideation, and reporting a prior suicide attempt (see Table 4). Youth in juvenile correctional facilities who reported receiving mental health treatment in the past year were more likely to report depressive symptoms, suicidal ideation, and a prior suicide attempt.

Discussion

Youth in juvenile correctional facilities in Minnesota reported rates of well-child, dental, and mental health care that fall short of American Academy of Pediatrics best-practice guidelines.[27,30] Although youth in public schools reported equivalent rates of well-child care within the past year, youth in juvenile correctional facilities were signifi-

Table 3.

SELF-REPORTED PHYSICAL HEALTH AMONG JUSTICE-INVOLVED YOUTH, BY RECEIPT OF PREVENTIVE CARE

	No well check-up in past year (%)	Well check-up in past year (%)
Health status		
Excellent, very good, or good	28.2	71.8
Fair or poor	41.9	58.1
Dental care in past year **	21.6	78.4
Body mass index		
Underweight (< 18.5)	0	100
Normal weight (18.5–24.9)	32.0	68.0
Overweight (25.0–29.9)	27.5	72.5
Obese (> 30.0)	26.3	73.7
Disability of long-term health condition	21.7	78.3
Asthma	28.6	71.4
Allergy that requires Epi-pen	40.0	60.0
Long-term mental health, behavioral, or emotional problem	31.6	68.4
PHQ-2 >/= 3	29.3	70.7
Suicide ideation		
In the past year	28.1	71.9
More than a year ago	37.0	63.0
Prior suicide attempt		
In the past year	26.3	73.7
More than a year ago	36.7	63.3

Notes:
*p-value < .05
**p-value < .01

cantly more likely to report fair or poor health, body mass index of overweight or obese, and a disability or long-term health condition. While regular well-child care is important for any adolescent (in order to promote healthy development to adulthood, the formation of identity, promotion of healthy behaviors, early diagnosis of unrecognized conditions, and understanding of the health care system) this type of care may be even more important for youth with underlying health conditions. Given the high rates of health conditions in this statewide sample of youth in juvenile correctional facilities and for health risks reported in the literature, this care may be especially valuable for justice-involved youth.[30] Our study found no statistically significant relationships between self-reported physical health conditions and receipt of well-child care among youth in juvenile correctional facilities. This is particularly concerning because the population of youth with physical health conditions may be the most likely

Table 4.

SELF-REPORTED MENTAL HEALTH AMONG JUSTICE-INVOLVED YOUTH, BY MENTAL HEALTH TREATMENT

	No prior mental health treatment	Treatment of mental health condition > 1 year ago (%)	Treatment of a mental health condition in past year (%)
Long-term mental health, behavioral, or emotional problem **	12.0	18.4	69.6
PHQ-2 >/= 3 **	22.7	13.3	64.0
Suicide ideation **			
In the past year	15.8	10.5	73.7
More than a year ago	18.5	22.2	59.3
Prior suicide attempt **			
In the past year	10.5	10.5	78.9
More than a year ago	20.0	33.3	46.7

Notes:
*p-value < .05
**p-value < .01

to benefit from ongoing interactions with a health care professional for preventive services. The findings in this study therefore illustrate significant gaps in preventive health care.

Youth in the juvenile correctional facility subsample who reported any mental health symptoms were more likely than youth not reporting these symptoms to report receiving mental health treatment. Youth in this sample were also more likely to report ever receiving mental health treatment, compared with the findings from a meta-analysis of behavioral health service utilization by White and colleagues.[31] While this finding is encouraging, the data suggest that provision of mental health services is still falling short of the need in juvenile correctional facilities. In this statewide sample of justice-involved youth, we identified very high rates (19.2%) of suicide attempts. This is higher than the prevalence rate of 4.1% in a national sample of youth ages 13–18 years old, with and without a history of incarceration reported by Nock and colleagues,[32] and the rate of 11.9% reported by Bhatta and colleagues in an urban sample of youth in one Ohio juvenile detention facility from 2003–2007.[33] In the Ohio-based sample, female respondents reported higher rates of prior suicide attempts than males. Their sample included a higher percentage of male respondents overall, which may account for this difference in rate. In addition to the high rate of suicide attempts overall reported by our sample, it is extremely worrisome that more than one in 10 youth who reported a suicide attempt in the past year also reported no receipt of mental health care. In a review

of deaths in juvenile correctional facilities from 2000–2002 suicide was found to be the highest cause of death.[34] Therefore it is imperative that appropriate and timely mental health services be made a priority for the health and well-being of this population.

This study adds to the knowledge about the specific health vulnerabilities that youth who are detained face. Although correctional facilities are federally mandated to provide health care, we found that gaps in care persist. These gaps are consistent with previous surveys of health services in the juvenile justice system. As an example, the Office of Juvenile Justice and Delinquency Prevention found that only 57% of 2,111 facilities surveyed nationwide assessed all entering youth for mental health needs, and 89% assessed all entering youth for suicide risk.[35]

One possibility to increase preventive health services for justice-involved youth is through partnerships with local public health or non-profit community-based clinics. Such partnerships could provide resources for screening and treatment to increase care within this population. Incentivizing the provision of health services within correctional facilities using public insurance coverage may be an additional way to address this gap. Currently, Medicaid policies only allow for the coverage of care received outside of the correctional facility if the individual is admitted for at least 24 hours, referred to as the "inmate exclusion of the Social Security Act." [36–40] Allowing Medicaid to cover all care provided in facilities, including well-child and dental care may increase provision of these preventive care services, increase rates of care, decrease disruptions in insurance coverage at the time of release, and ultimately improve youths' overall health. Finally, we are still learning about long-term health consequences of detention, but initial findings suggest that incarceration in adolescence is associated with negative health outcomes in adulthood.[12,13,40] Therefore, whenever possible, pediatricians should advocate for alternatives to detention where youths' needs may be better addressed in community settings.[41]

Limitations. This study utilized secondary data, and many of the limitations of the study stem from this approach. The Minnesota Student Survey aims to index health and well-being broadly, and the number of items about specific health conditions is limited. Therefore, we do not have comprehensive information regarding all of the health conditions relevant to this population of youth. This study was underpowered to test for differences in receipt of care based on food insecurity, homelessness, and parental incarceration, all factors that affect access to care. This is a valuable area for future inquiry. The survey is administered only in the state of Minnesota, thus limiting the generalizability of the findings. We also have limited information about the youths' incarceration. For example, we do not know the duration of incarceration, and cannot make assumptions about where medical, dental, or mental health care occurred. It is possible that the majority of service was provided by the juvenile correctional facility and that the gaps in care occurred prior to incarceration while the youth were living in the community. It is also possible that this gap represents a mismatch of expectations; perhaps the youth in this study have received well-care, either prior to or during their incarceration, but this was not perceived by the youth to be a health screening exam. We do not know how many youth declined to participate in the survey, and there may be differences in the health status and receipt of health services between those youth who did and did not complete the survey. Finally, the number of youth affected by some

health conditions was small, and therefore we had limited power to detect associations between the conditions and receipt of health care services.

Conclusions and future directions. Future studies should further elucidate the specific health needs of justice-involved youth, including where gaps of care are occurring, and explore the effects of juvenile detention throughout the lifespan. Additionally, it will be important to determine whether youth are satisfied with the care that is provided in correctional facilities and the care they receive as they transition back to their communities. It is imperative that the care that is delivered matches the youth-identified needs and is delivered in a culturally-sensitive and effective manner. Research about the health status of justice-involved youth is likely to add urgency to a rights-based framework of criminal justice system reform.

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