School-Based Health Centers as Patient-Centered Medical Homes

OBJECTIVE: School-based health centers (SBHCs) have been suggested as possible patient-centered medical homes. Our objectives were to determine, in a low-income, urban population, adolescents’ reasons for visiting SBHCs and the value parents place on SBHC services, and adolescents’ and parents’ assessment of how well SBHCs fulfill criteria for a medical home as defined by the American Academy of Pediatrics.

METHODS: A cross-sectional, mailed survey of a random sample of 495 adolescent SBHC users and 497 parents of SBHC users from 10 SBHCs in Denver, CO from May to October 2012. Eligible adolescents were registered in an SBHC with ≥1 visit during the 2011 to 2012 school year.

RESULTS: Response rates were 40% (198/495) among adolescents and 36% (181/497) among parents. The top 3 reasons for visits were for illness (78%), vaccines (69%), and sexual health education (63%). Factors reported as very important by ≥75% of parents in the decision to enroll their adolescent in an SBHC included clinic offering sick or injury visits, sports physicals, and vaccinations. More than 70% of adolescents gave favorable responses (always or usually, excellent or good) to questions about American Academy of Pediatrics medical home criteria (accessibility, continuity, comprehensiveness, family-centeredness, coordination, and compassion). Most parents (83%) reported that they could always or usually trust the SBHC provider to take good care of their child; 82% were satisfied with provider-to-provider communication.

CONCLUSIONS: In a low-income urban population, SBHCs met criteria of a medical home from adolescents’ and parents’ perspectives. Policymakers and communities should recognize that SBHCs play an important role in the medical community, especially for underserved adolescents. Pediatrics 2014;134:957–964

WHAT'S KNOWN ON THIS SUBJECT: School-based health centers (SBHCs) are known to increase access to medical care and mental health services for at-risk adolescents. Policymakers have suggested that SBHCs could function as patient-centered medical homes, but SBHCs have not been evaluated in that context.

WHAT THIS STUDY ADDS: Using the constructs of the patient-centered medical home as defined by the American Academy of Pediatrics (accessibility, continuity, comprehensiveness, family-centeredness, coordination, and compassion), this study shows that SBHCs have the potential to function as medical homes from the perspective of adolescents and parents.

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(Continued on last page)
Children who are poor, minorities, and uninsured or underinsured are at higher risk for not having a usual source of health care, and this is particularly true among adolescents.†1–5 School-based health centers (SBHCs) offer a potential solution to increasing access to care. SBHCs have existed for many decades but have become more common since the early 1990s, primarily because of support from private foundations and, to a lesser extent, from federal and state funding. There are ∼2000 SBHCs in all 50 states. SBHCs have been shown to increase access to care for children in poverty, the uninsured, and minorities.6–12 Conveniently located in schools, they are uniquely positioned to offer a safety net for medical and mental health care for many underserved children and adolescents. Given SBHCs’ ability to overcome many access barriers, they may be the only source of medical care for some children.

The American Academy of Pediatrics (AAP) conceptualizes the medical home as care that is “accessible, continuous, comprehensive, family-centered, coordinated, and compassionate.”12 Having a medical home is associated with numerous positive health outcomes, both in children with special health care needs and in healthy children.13–20 Incentives are built into the Affordable Care Act for care providers to achieve qualification as patient-centered medical homes (PCMHs), and organizations such as the National Committee for Quality Assurance (NCQA) have defined a set of objective criteria to designate PCMH status. Recently, the AAP and the School-Based Health Alliance have suggested that SBHCs could and should qualify as PCMHs.21,22 For some SBHCs, this process has begun.23 The intention of this study was to assess whether SBHCs can serve as medical homes as conceptualized by the AAP from the adolescent and parent perspective. We did not seek to “certify” the involved SBHCs as PCMHs.

Therefore, the specific objectives of this study were to determine, in a diverse population of adolescents and parents of adolescents seeking care in a large integrated system of SBHCs, adolescents’ reasons for visiting the SBHC and value parents place on various services provided by the SBHC, adolescents’ and parents’ assessment of how well SBHCs fulfill criteria for a PCMH, and the proportion who use an SBHC as their primary source of medical care and characteristics of parents who reported that an SBHC was their adolescent’s primary source of medical care.

METHODS

Study Design and Setting

From May to October 2012, 2 separate mail surveys were conducted among students and parents of students who attended one of 10 Denver middle and secondary schools with an SBHC. The Colorado Multiple Institutional Review Board approved this study.

The SBHCs are administered through a cooperative agreement between Denver Public Schools and Denver Health and Hospital Authority (DH), an integrated community health system. Parents are asked at school registration for written consent for their child to use the SBHC for health care in the upcoming year; consent for vaccinations is obtained at the same time. Approximately 85% of parents whose children attend a campus with an SBHC enroll their child in the SBHC. DH SBHCs have gone through a state PCMH approval process but not an NCQA approval process.

Students may use the SBHC as their sole source of care or may be seen at another DH Community Health Center or by medical providers outside of DH.6 Each SBHC is staffed by an advanced care provider (nurse practitioner or physician assistant) with supervision by a pediatrician. These SBHCs dispense medications from a limited formulary pharmacy, offer all vaccines recommended by the Advisory Committee on Immunization Practices, can obtain routine laboratory analysis, and offer mental health counseling. Medical records are integrated within the DH system, and there is access to the Colorado Immunization Information System.

Population

Using billing and visit data, we identified 2346 students aged 15 to 18 years who had ≥1 visit to an SBHC during the 2011 to 2012 school year. From this population, we selected a random sample of students and a separate random sample of parents of students. To avoid confusion within a household about the receipt of 2 separate but similar surveys, if a student was selected for the random sample, that household was excluded from participation in the parent survey.

Survey Design

The adolescent survey was administered in English because few students in the study population were not proficient in English. The parent survey was in English or Spanish, based on the language preference recorded at school registration. With guidance from the AAP’s National Center for Medical Home Implementation,24 the survey instruments were designed to assess characteristics of a patient- and family-centered medical home. The adolescent survey was based in part on the Young Adult Health Care Survey, an instrument designed to assess the quality of preventive care provided to adolescents.25 This survey has been shown to have strong construct validity, internal consistency, and concurrent validity. Based on the Young Adult Health Care Survey, adolescents were asked yes/no questions about whether their provider at the school clinic talked to or asked them
about specific adolescent health issues. After reading a brief informational statement about patient-centered medical homes, adolescents were asked to rate how often certain practices occurred in their homes, using a 4-point scale from never to always, followed by a series of statements based on the stem, “Please mark how well your school clinic is doing in the following areas,” with a 4-point scale from poor to excellent. In the parent survey, questions about the medical home were based on the medical home section of the 2007 National Survey of Children’s Health.26 The adolescent survey was piloted among 10 adolescents. The parent survey was piloted among 7 English- and 4 Spanish-speaking parents.

Survey Administration
Adolescents (n = 500) and parents (n = 500; 282 English speaking, 218 Spanish speaking) were mailed a preletter followed by the survey 2 weeks later. Nonrespondents were sent a reminder postcard and ≤2 additional surveys. There were reminder phone calls to nonrespondents from the director of the SBHCs, recorded in English and Spanish. A $5 bill was included in the initial survey mailing. Adolescents (n = 5) or parents (n = 3) identified as no longer in the school district were removed from the sample.

Analytic Methods
χ2 tests were used for comparisons of characteristics of respondents and nonrespondents. Bivariate analysis was conducted between the dependent variable (parents who reported the SBHC as their child’s primary source of medical care) and the following independent variables: sociodemographic factors, presence of a chronic medical condition, reported use of the SBHC, being contacted by staff at the SBHC, and factors affecting the decision to enroll their child in an SBHC. Factors with a bivariate P < .25 were included in the multivariable model and removed iteratively if P > .05. Given 55 responses that considered SBHC as main source of care, the most relevant covariates were included in the model. Because insurance type, education, and income were intercorrelated, only insurance type was included, given its strong association with the outcome. Confounding effect was tested with each iteration, but none was found. Likelihood ratio test was used to compare model fit, and adjusted odds ratios and 95% confidence intervals are reported. All statistical analyses were performed with SAS software (SAS 9.3; SAS Institute, Cary, NC).

RESULTS
Response Rates and Study Sample
The response rate for the adolescent survey was 40% (197/495) and for the parent survey was 36% (181/497). Characteristics of respondents are listed in Table 1. Respondents were similar to nonrespondents in terms of age of the child and language preference.

Services Used by Adolescents Visiting the SBHC
Services adolescents reported using when visiting the SBHC are shown in Fig 1. The top 3 types of services were for illnesses (78%), vaccines (69%), and education about sexual health (63%).

Value Parents Place on Services in the SBHC
The following factors were reported as very important by more than half of parents in the decision to enroll their adolescent in an SBHC: that the clinic offers sick visits, injury visits, sports examinations, vaccinations, regular checkups, sexual health education, insurance support, and dietary counseling, and that their child misses less school, that they miss less work, and that the clinic does not require insurance and does not have a copayment (Fig 2).

Constructs of the Medical Home
Adolescents’ and parents’ impressions of their experiences with the SBHCs specific to the constructs of the medical home as defined by the AAP are summarized below, with full response categories available in an online Supplemental Appendix (Tables 3, 4, and 5).

Accessibility
Most adolescents (77%) and parents (79%) reported that the SBHC was doing a good or excellent job at “being available when I/my child need(s) to be seen” and “offering lots of different services.” Furthermore, 21% of adolescents reported visiting the SBHC 0 to 2 times, 37% 3 to 4 times, 18%, 5 to 6 times, and 24% >6 times.

Patient- and Family-Centeredness
Almost all adolescents (94%) reported that providers usually or always ensured confidentiality of the visit. More than 80% of adolescents reported that providers usually or always “showed respect for what I had to say,” “listened carefully to me,” “explained things in a way I could understand,” “helped me feel like a partner in my own care,” and “spent enough time with me.” Similarly, high percentages of parents reported that they “can trust the provider to take good care of my child” (82%), that “the school clinic gave me the specific information I needed about my child’s health” (72%), and that providers “helped me feel like a partner in my child’s care” (67%). Overall, 67% of students reported they were very satisfied with the services they received, with 30% somewhat satisfied, 3% not very, and <1% not at all satisfied.

Continuity
Sixty-seven percent of adolescents and 69% of parents reported that the SBHC was doing a good or excellent job at
“having medical providers that know me/my child.”

**Comprehensiveness**

Seventy-three percent of adolescents and 77% of parents reported the SBHC as doing a good or excellent job at “offering lots of different services to meet my/my child’s needs.” Regarding anticipatory guidance, most adolescents reported being talked to or asked about physical activity or exercise (78%), sexually transmitted diseases (76%), weight (68%), healthy eating (67%), their emotions or moods (64%), drug use (63%), sexual or physical abuse (55%), their school performance (53%), and sexual orientation (52%).

**Coordination of Care**

Seventy-three percent of adolescents and 74% of parents reported that the SBHC was doing a good or excellent job at making “sure that I/my child am/is able to see other medical providers if needed.” Furthermore, 21% of parents (n = 37) reported that their child needed a referral to see another provider; 64% of these parents reported that the referral was not a problem, 22% a small problem, and 14% a big problem. Finally, 35% of parents reported that someone at the SBHC helped them arrange or coordinate their child’s care. Of these, 55% were very satisfied and 27% were somewhat satisfied with the communication between the SBHC and other providers.

**Compassionate**

Eighty-six percent of adolescents and 80% of parents reported that the SBHC “provides a kind, caring place for me/my child to be seen for health care.” Also, 88% of adolescents reported that “SBHC providers listened carefully to me.”

**Culturally Effective**

Eighty-three percent of adolescents and 82% of parents reported that the SBHC did an excellent or good job at “respecting my family’s cultural values.” Furthermore, 86% of adolescents and 60% of parents reported that providers usually or always were “sensitive to my family’s values and customs”; 25% of parents reported “don’t know.” Also, 8% of adolescents reported that they usually or always had difficulty understanding the provider because of language differences. Among the 18% (n = 32) of parents who reported they needed an interpreter to speak with their child’s health care provider, 29% reported that they always were able to get someone to help them speak with the provider, 13% usually, 29% sometimes, and 29% never.

**SBHC as the Primary Source of Medical Care**

Thirty-four percent of adolescents and 33% of parents reported that they considered an SBHC to be their or their child’s primary source of care. Other
sites reported as the main source of medical care included DH Clinics (adolescents, 41%; parents, 47%), private physicians’ offices (adolescents, 16%; parents, 28%), Kaiser Permanente clinics (adolescents, 21%; parents, 7%), emergency department (adolescents, 3%; parents, 3%), other place (adolescents, 9%; parents, 9%), and none (adolescents, 10%; parents, 6%). Compared with parents who reported that their child had another source of primary care, parents who reported that an SBHC was their child’s primary source were more likely to consider mental health services as “very important” in the decision to enroll in an SBHC and to report having no health insurance for their child (Table 2).

**DISCUSSION**

In this survey of parents and adolescent users of an integrated SBHC system, we found that adolescents used a variety of services, and parents valued the variety of services offered, accessibility, convenience, and lack of requirement for copayment or health insurance. We also found that both parents and adolescents rate their SBHCs highly when questioned specifically about aspects of a medical home. An SBHC was the main source of medical care for about one-third of adolescents in our study. We found that these adolescents who used the SBHC as their main source of medical care were more often uninsured and that their parents valued access to mental health services. There are challenges to SBHCs serving as medical homes because of a potential lack of after-hours and summertime support. The SBHCs in this study were part of a larger integrated community health system with after-hours services and support in the summer, holidays, and weekends. Because of this support, this model of SBHCs may be able to meet NCQA or other objective PCMH standards. This type of support is not available in all SBHCs nationally, though, making qualifying for official PCMH status difficult for those that are not part of a larger system. Other SBHCs throughout the United States, even those not in a larger system, may give excellent care and serve as a medical home from the patient and parent perspective, based on the AAP conceptualization. Furthermore, even if these other SBHCs do not qualify as medical homes, they can play a vital role as part of a larger medical neighborhood, given their accessibility to adolescents and the patient-centered care that they offer. Although the SBHCs in our study were within a vertically integrated system, they are not qualitatively different from many of the SBHCs around the United States. Similar to our setting, 57% of SBHCs nationally are located in urban areas, 80% serve adolescents, student populations are predominantly Hispanic, 82% have access to mental health services, 50% have existed for ≥10 years, and most offer similar services such as vaccinations, vision and hearing screening, anticipatory guidance, sports physicals, treatment of acute and chronic illnesses, and prescriptions.27 Some pediatricians have raised concerns that SBHCs may be counter to the

![FIGURE 1](chart1.png)

**FIGURE 1**
Services reportedly used by students within the school-based health centers in the previous year (n = 197).

![FIGURE 2](chart2.png)

**FIGURE 2**
Importance of factors in parents’ decisions to enroll their child in a school-based health center (n = 181).
medical home model because care may be fragmented if there is poor communication with the primary care provider (PCP).28 Given our finding that adolescents who use SBHCs visit them frequently, this concern about coordination of care with PCPs is important. In our study and other SBHCs around the country, many adolescent SBHC users report having PCPs outside an integrated system. Two-thirds of the adolescents in our study who reported visiting the SBHC

### TABLE 2  Characteristics of Parents Who Report the School-Based Health Center as Their Child’s Primary Source of Medical Care \( (n = 169) \)

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Consider SBHC as Main Source of Care, % ( (n) )</th>
<th>Have Another Main Source of Care, % ( (n) )</th>
<th>Bivariate ( P )</th>
<th>Adjusted Odds Ratio (95% Confidence Interval)</th>
<th>( P )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of times parent reported child visited the school clinic in previous year</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0–2</td>
<td>34.0 (18)</td>
<td>34.6 (38)</td>
<td>.58*</td>
<td>NS</td>
<td>NS</td>
</tr>
<tr>
<td>&gt;3</td>
<td>66 (35)</td>
<td>66 (72)</td>
<td></td>
<td>NS</td>
<td>NS</td>
</tr>
<tr>
<td>Parent reported being contacted by SBHC</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>29.6 (16)</td>
<td>45.0 (49)</td>
<td>.06</td>
<td>NS</td>
<td>NS</td>
</tr>
<tr>
<td>No</td>
<td>70.4 (38)</td>
<td>55.0 (60)</td>
<td></td>
<td>NS</td>
<td>NS</td>
</tr>
<tr>
<td>How important were the following in your decision to register your child for the school clinic this school year (2011–2012)?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clinic can give vaccination</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Very important(^b)</td>
<td>90.7 (49)</td>
<td>27.2 (31)</td>
<td>.008</td>
<td>NS</td>
<td>NS</td>
</tr>
<tr>
<td>Clinic can see child when sick</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Very important</td>
<td>92.5 (50)</td>
<td>80.7 (92)</td>
<td>.047</td>
<td>NS</td>
<td>NS</td>
</tr>
<tr>
<td>No need to miss work for receipt of child care at clinic</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Very important</td>
<td>81.5 (44)</td>
<td>70.0 (77)</td>
<td>.12</td>
<td>NS</td>
<td>NS</td>
</tr>
<tr>
<td>Clinic can give sexual health education</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Very important</td>
<td>72.2 (39)</td>
<td>58.4 (66)</td>
<td>.08</td>
<td>NS</td>
<td>NS</td>
</tr>
<tr>
<td>Clinic can give regular check-ups</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Very important</td>
<td>83.3 (45)</td>
<td>65.8 (75)</td>
<td>.02</td>
<td>NS</td>
<td>NS</td>
</tr>
<tr>
<td>Clinic can give referral to dentist</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Very important</td>
<td>79.6 (43)</td>
<td>66.4 (75)</td>
<td>.08</td>
<td>NS</td>
<td>NS</td>
</tr>
<tr>
<td>Clinic provides mental health services</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Very important</td>
<td>57.4 (31)</td>
<td>36.3 (41)</td>
<td>.01</td>
<td>2.80 (1.30, 6.00)</td>
<td>.0085</td>
</tr>
<tr>
<td>Clinic does not require insurance for my child to be seen</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Very important</td>
<td>81.1 (43)</td>
<td>66.4 (75)</td>
<td>.05</td>
<td>NS</td>
<td>NS</td>
</tr>
<tr>
<td>Clinic can help my child get signed up for insurance</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Very important</td>
<td>66.0 (35)</td>
<td>42.5 (48)</td>
<td>.005</td>
<td>NS</td>
<td>NS</td>
</tr>
<tr>
<td>Other reported characteristics</td>
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<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Child with chronic health condition</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>15.7 (8)</td>
<td>20.9 (23)</td>
<td>.43</td>
<td>NS</td>
<td>NS</td>
</tr>
<tr>
<td>No</td>
<td>84.3 (43)</td>
<td>79.1 (87)</td>
<td></td>
<td>NS</td>
<td>NS</td>
</tr>
<tr>
<td>Insurance type ( \text{Medicaid, CHP+, or CICP} )</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medicaid, CHP+, or CICP</td>
<td>48.9 (23)</td>
<td>61.5 (64)</td>
<td>.21 (0.08, 0.56)</td>
<td>.0045</td>
<td></td>
</tr>
<tr>
<td>Private or other</td>
<td>17.0 (8)</td>
<td>28.9 (30)</td>
<td>.20 (0.07, 0.64)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>34.0 (16)</td>
<td>9.6 (10)</td>
<td></td>
<td>Reference</td>
<td></td>
</tr>
<tr>
<td>Number of adults in household</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>9.8 (5)</td>
<td>21.6 (24)</td>
<td></td>
<td>NS</td>
<td>NS</td>
</tr>
<tr>
<td>2</td>
<td>49.0 (25)</td>
<td>46.9 (52)</td>
<td>.07a</td>
<td>NS</td>
<td>NS</td>
</tr>
<tr>
<td>&gt;2</td>
<td>41.2 (21)</td>
<td>31.5 (35)</td>
<td></td>
<td>NS</td>
<td>NS</td>
</tr>
<tr>
<td>Education completed</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;High school</td>
<td>56.4 (31)</td>
<td>35.7 (40)</td>
<td></td>
<td>NS</td>
<td>NS</td>
</tr>
<tr>
<td>High school</td>
<td>20.0 (11)</td>
<td>30.4 (34)</td>
<td>.01</td>
<td>NS</td>
<td>NS</td>
</tr>
<tr>
<td>&gt;High school</td>
<td>23.6 (13)</td>
<td>33.9 (38)</td>
<td></td>
<td>NS</td>
<td>NS</td>
</tr>
<tr>
<td>Race</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>12.7 (7)</td>
<td>13.2 (15)</td>
<td></td>
<td>NS</td>
<td>NS</td>
</tr>
<tr>
<td>Hispanic</td>
<td>81.6 (45)</td>
<td>64.0 (73)</td>
<td></td>
<td>NS</td>
<td>NS</td>
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<tr>
<td>African American</td>
<td>1.8 (1)</td>
<td>9.7 (11)</td>
<td>.07</td>
<td>NS</td>
<td>NS</td>
</tr>
<tr>
<td>Mixed</td>
<td>1.8 (1)</td>
<td>2.6 (3)</td>
<td></td>
<td>NS</td>
<td>NS</td>
</tr>
<tr>
<td>Other</td>
<td>1.8 (1)</td>
<td>10.5 (12)</td>
<td></td>
<td>NS</td>
<td>NS</td>
</tr>
<tr>
<td>Income ( \text{CHP+, Child Health Insurance Program; CICP, Colorado Indigent Care Program; NS, not significant.} )</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;$10,000</td>
<td>28.6 (12)</td>
<td>22.1 (29)</td>
<td></td>
<td>NS</td>
<td>NS</td>
</tr>
<tr>
<td>$10,000–$25,000</td>
<td>40.5 (21)</td>
<td>33.7 (39)</td>
<td></td>
<td>NS</td>
<td>NS</td>
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<tr>
<td>$25,000–$35,000</td>
<td>16.7 (7)</td>
<td>12.8 (11)</td>
<td>.10</td>
<td>NS</td>
<td>NS</td>
</tr>
<tr>
<td>$&gt;35,000</td>
<td>14.3 (6)</td>
<td>31.4 (37)</td>
<td></td>
<td>NS</td>
<td>NS</td>
</tr>
</tbody>
</table>

\( * \) Mantel–Haenszel \( \chi^2 \).

\(^b\) Compared with all other responses.
ACCESS TO MENTAL HEALTH SERVICES AMONG AT-RISK ADOLESCENTS: AN ABLE Assessment OF SBHCs AS PRIMARY SOURCES OF CARE

Given the high prevalence of mental health disorders among adolescents, it is crucial to ensure that these individuals have access to appropriate care. School-based health centers (SBHCs), which serve as primary sources of care for many adolescents, have the potential to play a significant role in addressing these needs. This study assesses the ability of SBHCs to serve as medical homes for at-risk adolescents, examining the extent to which they provide access to mental health services and other medical needs.

Methods

A longitudinal, cross-sectional study was conducted in a city and school district. The study population consisted of adolescents aged 12 to 18 years who were enrolled in school health centers. Data were collected through a survey administered to both adolescents and their parents or guardians. The survey measured various factors, including access to care, perceived barriers to accessing health care, and overall satisfaction with care received.

Results

The study found that SBHCs are well-positioned to serve as primary sources of care for at-risk adolescents. Adolescents reported that they visited SBHCs more frequently than their primary care physicians. Most adolescents who reported visits to SBHCs also reported visits to their primary care physicians. This finding suggests that SBHCs can serve as medical homes for at-risk adolescents, providing a layer of perceived continuity and a safety net for many of these adolescents.

Parents who reported that an SBHC was their primary source of care for their children were also more likely to highly value the access to mental health services offered by the SBHCs. This finding suggests that other options for mental health services may be limited for these families and that they may have more unmet needs, consistent with previous studies showing a correlation between unmet needs and poverty. Although our multivariable analysis did not have income as a factor in the final model, it is important to note that the income of the majority of our study population was low. School-located mental health services have potential advantages over other mental health services available in a community because they are immediately accessible for adolescents and may offer another layer of perceived confidentiality for adolescents who may otherwise be reluctant to seek mental health care.

This study has strengths and limitations. Although some have suggested that SBHCs could function as medical homes, to our knowledge this is the first study to assess AAP-defined medical home constructs in an SBHC setting. Also, we were able to assess the perspectives of both adolescents and parents, whereas the standard survey instrument for measurement of the pediatric medical home includes many questions that can be answered only if a parent directly observed their child’s visit. However, we did not perform an objective measurement of NCQA-defined PCMH criteria; we measured patient experience, which measures primarily patient-centeredness. Also, the response rates for the surveys were low, although they were in line with similar studies in hard-to-reach populations. Respondents may have been more likely than nonrespondents to be satisfied with the care received. This study was also done within 1 integrated health care system in 1 city and school district. Finally, much of the information is based on recall rather than observation.

CONCLUSIONS

From the perspective of adolescents and parents, SBHCs appear well equipped to serve as medical homes, which is important for at-risk adolescents for whom SBHCs may serve as the sole source of care. SBHCs may also offer access to mental health services for adolescents with unmet needs. Policymakers and communities should recognize that SBHCs play an important role in the medical community, especially for underserved adolescents.

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