SCHOOL-BASED HEALTH CENTERS ARE CRITICAL IN ADDRESSING HEALTH DISPARITIES AND UNMET HEALTH NEEDS OF OREGON ADOLESCENT

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OBJECTIVE

To evaluate the extent to which school-based health centers (SBHC) address health disparities in adolescents and to assess predictors of school based health center utilization.

METHODS

- Encounter data collected at each clinic visit by adolescents attending Oregon SBHC during the 2001-2002 service year were analyzed using SPSS 15.0.
- There were a total of 17,700 patients aged 11-19 years accounting for a total of 78,148 visits.
- Data included in these analyses were race/ethnicity, age, gender, insurance status at first visit, rural vs. urban location and primary ICD-9 code for each of first 10 visits.
- ICD-9 codes were grouped into the following diagnostic categories:
  - Asthma
  - Diabetes
  - Health care maintenance
  - Mental health
  - Reproductive health
- Multivariate analyses were done using stepwise methods for both linear and logistic regression.
  - Variables included in the multivariate equations were those statistically associated in univariate analyses.

RESULTS

- Mean number of SBHC visits varied by race/ethnicity and gender.
- Multiple linear regression equation predicting number of SBHC visits showed that having a mental health diagnosis was the strongest predictor adjusting for age, race, gender, insurance status and co-morbid conditions.
- Use of SBHC for health maintenance was statistically associated with lack of insurance.
- Multivariate logistic regression model predicting use of the SBHC for health maintenance showed that male, non-white, uninsured and younger patients were more likely to use the SBHC as a medical home.

Table 1
Characteristics of Sample

Variable	n	(%)
Race	***17,368***	
African American	1,466	8.3
Asian/Pacific Islander	718	4.1
Hispanic/Latino	1,580	8.9
Native American/Alaska Native	323	1.8
Mixed/Other	355	2.0
White/Caucasian	12,926	73.0
Missing	332	
Gender	***17,695***	
Female	10,260	58.0
Male	7,435	42.0
Missing	5	
Geographic Location	***16,691***	
Urban	13,461	76.1
Rural	4,230	23.9
Missing	9	
Health Insurance	***14,396***	
Medicaid/Oregon Health Plan	2,370	16.5
Family Planning Expansion Prograr	1,271	8.8
Private	6,382	44.3
Uninsured	4,373	30.3
Missing	3,304	
	Mean	SD
Age	15	2
Number of Visits	4.4	6.4

Figure 1
Mean Number of Visits by Gender

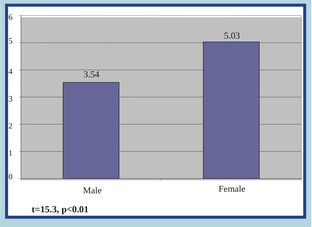

Figure 2
Mean Number of Visits by Race/Ethnicity

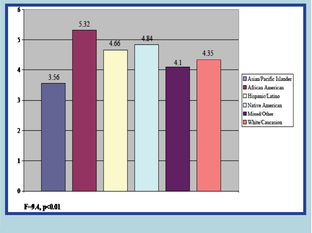

Figure 3: **Proportion of Patient Visits by Diagnostic Category**

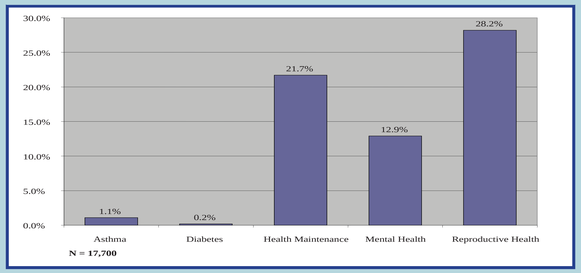

Figure 4: **Diagnostic Category by Insurance Status**

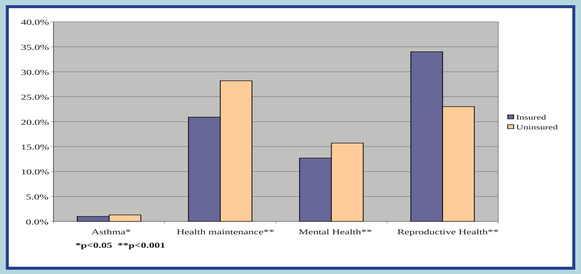

Table 2:
Multivariate Linear Regression Analysis of Number of SBHC Visits in 2001-2002

Variable	B	95% CI for B	β	R squared
Mental Health Visit	8.18	7.92 - 8.44	0.44	0.21
Reproductive Health Visit	2.02	1.81 - 2.24	0.15	0.23
Health Maintenance Visit	1.76	1.54 - 1.97	0.12	0.24
Rural location	1.55	1.31 - 1.78	0.10	0.25
Female	0.72	0.53 - 0.91	0.06	0.25
Diabetes Visit	7.93	5.70 - 10.16	0.05	0.25
Asthma Visit	2.52	1.67 - 3.37	0.04	0.26
Age	-0.11	-0.15 - -0.06	-0.03	0.26
Non-white	0.25	0.04 - 0.45	0.02	0.26

Variables not included in the model: Insurance status
B = unstandardized coefficient/slope of regression equation

Table 3:
Logistic Regression of Use of SBHC for Health Care Maintenance

Variable	Odds Ratio	95% CI Odds Ratio
Male	1.15	1.06-1.25
Non-White	1.60	1.47-1.74
Uninsured	1.27	1.17-1.39
Age	0.85	0.83-0.86

Variables not included in the model: rural location

CONCLUSIONS

- Utilization of SBHC is predicted by carrying a mental health diagnosis which is consistent with other research. [1] Access to care for children's mental health services in Oregon is limited.[2] This suggests that SBHC are filling an important gap in adolescent mental health services in Oregon.
- Use of SBHC for health maintenance or as a medical home is associated with lack of health insurance and with non-white race/ethnicity. Given that both lack of insurance[3] and minority status[4] are strongly associated with inadequate access to health care, SBHC are important to addressing health disparities.

LIMITATIONS

- Differences in data collection between SBHC sites may lead to inconsistent coding and information regarding demographics.
- Because mental health services are not available at all sites, these diagnoses may be under-reported in sites without mental health providers.
- Unable to compare users of SBHC to non-users at the school level.
- Data are only relevant to in-school youth.

REFERENCES

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4. US DHHS. National Healthcare Disparities Report 2007. 2008. AHRQ Publication No. 08-0041