

Medical Homes, Neighborhood Characteristics, and Their Impact on Child Health Outcomes

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Background

- The medical home has been recognized as an effective healthcare delivery model associated with improved health outcomes among children.
- Neighborhood characteristics have been associated with improved child health outcomes and decreased access to a medical home.
- Additionally, few studies have examined the impact of components of the medical home on child health outcomes.
- Prior studies have not examined child health outcomes while adjusting for neighborhood characteristics and having a medical home or specific medical home components.

Research Objective

To examine the association of neighborhood characteristics (supportive or detracting) and 1) having a medical home; 2) medical home components with child health outcomes.

Methods

Study Design

We used logistic regression to examine our research objective

National Survey of Children's Health, 2016-2017

- Nationally representative data
- Large sample of children (aged 0-17) in all 50 states
- Covariates: sex, race/ethnicity, family income, parental education, and child health (children with special healthcare needs)

Medical Home

- Defined by: accessible (health insurance, usual place of care, personal doctor or nurse), family-centered, comprehensive (no referral problems, if needed), coordinated (if needed)
- Not included: continuous, compassionate, culturally effective
- Sensitivity analysis: dropped health insurance from access definition (included as covariate: uninsured, public, private)

Neighborhood Characteristics

- Supportive (people help/watch out for each other)
- Detractions (litter, rundown, or vandalism)

Outcomes

- Healthcare utilization: emergency room (ER) visit (one or more), unmet healthcare needs (medical, dental, hearing, vision, mental), unmet mental healthcare needs
- Health outcomes: one or more functional difficulties (list of 12), worse health (parental report; good, fair, or poor); worse teeth (parental report; fair or poor)

Principal Findings

Descriptive Results

- The majority of children did not have a medical home (Table 1).
- In bivariate analysis, all covariates except sex differed by medical home status.
- By medical home component (Table 2), only 60% of children met the definition of access. Among those who needed it, 22% lacked comprehensive care and 27% lacked care coordination.

Multivariate Results

- A medical home was associated with better results in all outcomes we assessed, with the exception of ER use (and all outcomes in sensitivity analysis; uninsured children had fewer ER visits) (Table 3).
- Children a supportive neighborhood had better health outcomes, while neighborhood detractions were associated with worse outcomes.
- Component analysis highlighted problems with comprehensive and coordinated care, for children who need these services (Table 4).
- Neighborhood results were similar in component analysis (not shown).

Table 1. Characteristics of children by medical home (MH) status

	Total	No MH	Had MH
Sex			
Male	0.51	0.51	0.51
Female	0.49	0.49	0.49
Race *			
Hispanic	0.24	0.30	0.18
White, non-Hispanic	0.52	0.44	0.61
Black, non-Hispanic	0.13	0.15	0.11
Other non-white, non-Hispanic	0.11	0.11	0.10
Family income *			
<100 percent FPL	0.20	0.25	0.15
100–199 percent FPL	0.22	0.26	0.17
200–399 percent FPL	0.27	0.27	0.28
400 percent FPL or higher	0.31	0.23	0.39
Parental education *			
Less than high school	0.08	0.12	0.05
High school diploma/GED	0.19	0.24	0.14
Some college	0.22	0.24	0.20
College or graduate degree	0.50	0.40	0.61
Child health *			
Children with special healthcare needs	0.19	0.20	0.17
Neighborhood characteristics			
Neighborhood support	0.56	0.49	0.62 *
Neighborhood detractions	0.25	0.29	0.22 *
Total		0.52	0.48

Table 2. Rate of children with medical home components

	Access	Family-centered	Comprehensive	Coordinated
All children	0.60	0.89	0.96	0.85
Among children who needed that component (if applicable)	N/A	N/A	0.78	0.73

Table 3. Odds of child outcomes by medical home & neighborhood

	Medical home		Supportive neighborhood		Neighborhood with detractions	
	OR	Pvalue	OR	Pvalue	OR	Pvalue
Healthcare utilization						
Emergency room visit	0.93	0.171	0.86	0.002	1.23	<0.001
Unmet healthcare needs	0.29	<0.001	0.58	<0.001	1.47	0.008
Unmet mental healthcare needs	0.35	<0.001	0.86	0.322	1.70	<0.001
Health outcomes						
One or more functional difficulties	0.74	<0.001	0.78	<0.001	1.30	<0.001
Worse health [^]	0.60	<0.001	0.76	0.001	1.09	0.317
Worse teeth [^]	0.58	<0.001	0.68	<0.001	1.28	0.017

Bolded if statistically significant; covariates: sex, race/ethnicity, family income, parental education, children with special healthcare needs
[^]= parental report

Table 4. Odds of child outcomes by medical home components

	Access		Family-centered		Comprehensive		Coordinated	
	OR	Pvalue	OR	Pvalue	OR	Pvalue	OR	Pvalue
Healthcare utilization								
Emergency room visit	1.20	0.001	0.96	0.668	0.45	<0.001	0.66	<0.001
Unmet healthcare needs	0.63	<0.001	0.54	<0.001	0.37	<0.001	0.45	<0.001
Unmet mental healthcare needs	0.72	0.012	0.56	0.001	0.53	0.002	0.56	<0.001
Health outcomes								
One or more functional difficulties	0.97	0.631	0.89	0.186	0.56	<0.001	0.58	<0.001
Worse health [^]	0.99	0.926	0.78	0.023	0.66	0.013	0.45	<0.001
Worse teeth [^]	0.80	0.035	0.68	0.009	0.62	0.016	0.70	0.005

Bolded if statistically significant; covariates: sex, race/ethnicity, family income, parental education, children with special healthcare needs, supportive neighborhood, neighborhood with detractions; [^]= parental report

Conclusion

We found that living in a supportive neighborhood, the absence of detracting neighborhood elements, and access to a medical home were each significantly associated with better child health outcomes.

Implications for Policy or Practice

- Our results support broad-based approaches to improving healthcare for children, including access to care that is accessible, family-centered, comprehensive, and coordinated, and a focus on social determinants of health.
- Our findings also show the importance of neighborhoods that are supportive and free from detracting elements, as well as policies that expand access to trusted and reliable healthcare, particularly for families in less supportive neighborhoods.

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