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ORIGINAL RESEARCH

Prevalence and correlates of high body mass index in rural Appalachian children aged 6-11 years

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ABSTRACT

Introduction: In rural regions of the United States of America, estimates of pediatric obesity often exceed national averages. This problem may be particularly pronounced in Appalachian regions, where significant health and economic disparities abound. This study presents the findings of a body mass index (BMI) screening program for 6–11 year old children living in a rural Appalachian community. County-wide estimates of high BMI (≥85th percentile) were obtained to understand the health status and needs of our pediatric community and to compare obesity prevalence rates with national averages. An additional aim was to identify subpopulations of children who may warrant clinical intervention due to demographic and behavioral risks factors of high BMI.

Methods: A school-based BMI screening was conducted of 6–11 year old children in southeastern Ohio. Investigators collected 3 sets of height and weight measurements from approximately 2000 elementary school students between 2006 and 2007. Caregivers for a subset of this population also completed a health behaviors questionnaire.

Results: Thirty-eight percent of children had high BMI, with 17% at risk for overweight and 20.9% overweight. Boys were 23% more likely than girls to be overweight ($\chi^2_{(1)}$ = 95% CI = 1.08, 1.40) and 11% more likely to become overweight with each year of age (OR = 1.11, 95% CI = 1.07, 1.15). Overweight children were more likely to view television, eat meals at school, and live with a caregiver who smokes.

Conclusions: Consistent with expectations, prevalence of high BMI in this sample of rural Appalachian children exceeds national averages. Prevalence of overweight varied by age and sex; boys are particularly vulnerable to developing obesity, especially as

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they age. Preliminary survey data suggest that eating breakfast at home and at school and increased hours of television viewing may be associated with higher BMI, especially in younger boys.

Key words: Appalachia USA, body mass index, epidemiology, pediatric obesity, school-based screening.

Introduction

Childhood obesity rates have reached epidemic proportions in the United States of America. Currently, 17% of children aged 2–19 years are overweight, as defined by having body mass index (BMI) values at or above the 95th percentiles for age and sex[1]. Some age groups, such as elementary school children, have seen more dramatic increases than others. For example, the percentage of children aged 6–11 years who were overweight in 1970–1974 (4%), more than tripled in 1999–2002 (15.8%)[2]. Although more recent National Health and Nutrition Examination Surveys estimates suggest that these rates have stabilized for the first time since 2003, overweight prevalence for 6–11 year-old children still greatly exceeds the 5% target goal established by *Healthy People 2010*[3,4]. (For simplicity, in this study the general terms 'overweight' and 'obesity' will be used interchangeably. When referring to specific BMI categories, however, the Center for Disease Control and Prevention's (CDC) preferred terminology of 'at risk for overweight' and 'overweight' will be used).

Indications exist that the US obesity epidemic affects some regions more acutely than others. In rural areas, where significant health and economic disparities abound, estimates of obesity often exceed national averages[5,6]. State and regional investigations of high BMI prevalence have found rates ranging from 17% to 25.9% in rural areas[6-8]. In their re-analysis of the 2003 National Survey of Children's Health (NSCH), Lutfiyya and colleagues determined that overweight children had a 25% greater likelihood of living in rural rather than urban areas[9]. In another analysis of the NSCH dataset, Liu and colleagues found a significantly higher incidence of overweight in rural (16.5%) versus urban children (14.3%)[10]. Estimates such as these have led some to propose that rural residency itself is a risk factor for pediatric obesity[9].

The consequences of this epidemic are myriad. Childhood obesity places children at risk for a host of health conditions, including hypertension, impaired glucose tolerance, type 2 diabetes mellitus, chronic inflammation, sleep apnea and orthopedic complications[11,12]. The psychological consequences of obesity are no less formidable and include diminished quality of life, low self-esteem, and body image dissatisfaction[13,14]. Epidemiological research suggests that childhood obesity endures into adulthood, making early health risks a chronic reality[15-22]. Given the severity and course of obesity throughout the lifespan, it is not surprising that national healthcare costs related to the disease approach US$100 billion per year[19].

Obesity is a complex, multidetermined condition. Numerous etiological factors, including genetic variability, basal metabolic functioning, environmental influences, and poor health behaviors have been proposed[20,21]. Direct causal mechanisms for obesity are difficult to isolate, but several correlates and risk factors have emerged in the literature. Several studies have found that low socioeconomic status (SES), for example, is associated with higher risk of obesity in certain populations[9,22,23]. Findings regarding gender and obesity are mixed, although some evidence suggests a somewhat higher risk of overweight for boys than girls[6,10]. Modifiable risk factors have also been proposed, including frequent consumption of fast food and physical inactivity[24,25]. In addition, television viewing has emerged as an important correlate of pediatric obesity, with one study identifying a fourfold risk of becoming overweight for children who watch 5 hours or more of television per day, compared with those who watch 2 hours or less[26,27].

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This study presents the findings of a school-based BMI screening program targeting elementary school children living in a rural Appalachian community in southeastern Ohio. County-wide estimates of high BMI (≥85th percentile) were obtained to understand the health status and needs of this pediatric community and to compare prevalence rates with national averages. An additional aim was to identify subpopulations of children who may warrant clinical intervention due to demographic and behavioral risks factors of high BMI.

Methods

Study population

Data were collected in Athens County, USA, one of 29 rural Appalachian counties in southeastern Ohio. High rates of unemployment and poverty classify Athens as one of the poorest counties in the state[28]. In 2006, the county's total population was 62 062, approximately 4344 (7%) of whom were children aged 6–12 years. The county's predominant race/ethnicity is white (94.3%)[28]. At the time of the study approximately 4003 children were enrolled in the county's 11 elementary schools. School enrollment reports for 2006–2007 indicated that an average of 52.3% of students (range 20.4% to 71.6%) were eligible to receive meals assistance from the National School Lunch Program.

Data collection procedure

The lead investigator obtained consent from school officials to conduct repeated BMI screenings for enrolled students. With permission from each school obtained, opt-out consent forms were then sent to parents describing the study and inviting their children's participation. Children were informed of the study by school personnel and were given the opportunity to decline participation at each of the 3 data collection sessions. All 11 elementary schools consented to participate in the study but, due to scheduling conflicts, 3 schools deferred participation until the second data screening. Thus, 8 schools participated in the first collection (May 2006), while all 11 schools participated in the second (September 2006) and third (May 2007). Approximately 2000 individual children (aged 6–11 years) participated in the study, yielding a total of 5306 height and weight measurements obtained from three screening sessions (Table 1).

An optional Health Information Survey (HIS) was administered to parents as part of the informed consent package. The HIS is a 17-item self-report questionnaire designed by the lead author to identify demographic and behavioral risk factors associated with BMI. The initial items of the HIS elicit standard demographic information (eg income, health insurance status, household composition). Subsequent items concern nutritional choices and habits ('What types of foods do you and your family usually eat? Check all that apply' and 'How many times a week does your family buy fast food?'), recreational activities ('What type of activities do your children and family enjoy? Check all that apply') and health information ('Does anyone in your family have the following conditions? Check all that apply' and 'How many people in your household use tobacco?').

Although height and weight measurements were collected 3 times in the course of the study, the HIS was administered once, prior to the first screening; thus, it could be matched with BMI measurements obtained in the first visit only. Caregivers for a subset of this population ($n = 291$) completed the HIS. Return rate for this optional survey was 20.8%.

Measurements were taken by a team of medical students, interns and residents working under the supervision of the lead author. On each designated screening day, approximately six research team members obtained heights and weight measurements for all assenting students. Measurements were taken in the privacy of the teachers' lounges, which were vacated for the duration of the screening. Students were measured without coats and shoes to prevent distorted measurements.

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Table 1: Individual and pooled height and weight measurements obtained from three data collection periods (n = 5306)†

Time¶	Date	No. schools	No. measurements	At-risk	Overweight
1	2006, May	8§	1399	17.9	19.5
2	2006, September	11	1905	17.0	21.9
3	2007, May	11	2002	16.5	21.1
Pooled estimates				17.0	21.0

†Some students were measured more than once; ¶Chi-square analyses of BMI distributions per time were non-significant: χ^2 (6, 5306) = 4.80; p = .57; §Three schools declined to participate in May 2006.

Investigators chose to obtain 3 observations to ensure reliability of data to provide an accurate estimate of high BMI in the study area. Because the primary aim of this study was to reliably estimate high BMI prevalence rather than to track its incidence, no attempts were made to monitor changes over time in individual participants' BMI measurements.

Four digital floor scales (Conair Corp; East Windsor, New Jersey, USA; model #WW17) were used to obtain participants' weights. Weight measurements were rounded to the nearest 0.1 kg. Scales were recalibrated each day of the data collection. Heights were measured with 4 portable stadiometers (Seca, Los Angeles, CA, USA). To ensure consistency of measurements, the same 4 floor scales and stadiometers were used at each BMI screening.

Data analyses

Following conventions set by the CDC, BMI was calculated as weight in kilograms divided by height in meters[23]. The BMI scores were classified by the following categories: *underweight* (BMI ≤5th percentile); *normal weight* (5th≤ BMI <85th percentiles); *at risk for overweight* 85th≤ BMI ≥95th percentiles); and overweight (>95th percentile) using the 2000 CDC growth charts for gender and age[6]. BMI percentiles were calculated and plotted using the syntax for the statistical program SAS, as provided by the CDC[30].

Chi-square tests of independence between visits and nutritional indicators revealed no significant differences in BMI measurements by time (alpha = .05). Thus, data for the 3 visits were combined for analyses. One sample tests for categorical variables (binomial test following z approximations) were used to compare prevalence of overweight and at risk of overweight in our sample with that of the entire population. Population estimates for comparison were obtained from Ogden et al. (2008)[3]. Logistic regression was used to determine risk factors for being classified as overweight or at risk of overweight. The software SPSS v16 (SPSS Corp, Chicago, IL, USA; http://www.spss.com/) was used for data analysis. Alpha was set at 0.05.

Results

The number of height and weight measurements obtained for each of the 3 data collection periods is presented (Table 1). Analyses of the distribution of nutritional status per time of data collection showed no statistically significant differences over the 3 time periods, χ^2 (6, 5306) = 4.80, p = 0.57. Thus, data from each time period were combined to yield a more comprehensive estimate of high BMI (≥85th%) in the sample. BMI prevalence rates per data collection time are provided (Tables 1-3) for those interested in the breakdown of BMI by time. This article only discusses findings based on the pooled estimates.

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Table 2: Per cent local and national prevalence of at risk for overweight and overweight according to sex, reported by data collection visits

Sex	*N*	At risk			Overweight		
		Local* % (SE)	National† %	*P* value	Local % (SE)	National %	*P* value
Pooled visits							
Both sexes	5306	17.0 (.005)	15.6	.002	20.9 (.006)	16.3	<.001
Male	2662	16.9 (.007)	15.6	.014	22.6 (.008)	17.1	<.001
Female	2664	17.1 (.007)	15.5	.012	19.3 (.008)	15.5	<.001
Individual visits							
2006, May							
Both sexes	1399	17.9 (0.027)	15.6	0.061	19.5 (0.028)	15.6	< .001
Male	714	18.2 (0.054)	15.6	0.033	21.6 (0.058)	17.1	.001
Female	685	17.5 (0.056)	15.6	0.081	17.4 (0.055)	15.5	.098
2006, September							
Both sexes	1905	17.0 (0.019)	15.6	0.228	21.9 (0.022)	15.6	< .001
Male	962	16.5 (0.039)	15.6	0.226	23.7 (0.044)	17.1	<.001
Female	943	17.4 (0.040)	15.6	.061	20.1 (0.043)	15.5	<.001
2007, May							
Both sexes	2002	16.5 (0.019)	15.5	0.398	21.1 (0.020)	15.6	< .001
Male	986	16.4 (0.038)	15.6	0.248	22.4 (0.042)	17.1	< .001
Female	1016	16.6 (0.037)	15.6	0.169	19.8 (0.039)	15.5	< .001

SE, Standard error. *All estimates from unweighted samples; †National estimates were derived from NHANES 2003-2006 [6].

Table 3: Logistic regression of high body mass index (≥85th percentile) categories on age and sex

Visit	Beta	SE	Wald	DF	P value	OR (95%CI)
Pooled visits						
High BMI						
Age (years)	.091	.016	30.22	1	<.001	11.10 (1.06, 1.13)
Sex (male)	.136	.057	5.74	1	.017	1.15 (1.03, 1.28)
2006, May						
Overweight						
Age (years)	0.132	0.041	10.25	1	0.001	1.14 (1.05-1.24)
Sex (male)	0.256	0.136	3.53	1	0.060	1.29 (0.99-1.69)
At risk						
Age (years)	0.109	0.034	10.55	1	0.001	1.12 (1.04-1.19)
Sex (male)	0.199	0.111	3.2	1	0.073	1.22 (0.98-1.52)
2006, September						
Overweight						
Age (years)	0.108	0.031	12.01	1	0.001	1.11 (1.05-1.19)
Sex (male)	0.215	0.111	3.71	1	0.054	1.24 (0.99-1.54)
At risk						
Age (years)	0.086	0.026	10.73	1	0.001	1.09 (1.04-1.15)
Sex (male)	0.118	0.094	1.57	1	0.210	1.13 (0.94-1.35)
2007, May						
Overweight						
Age (years)	0.082	0.032	6.52	1	0.011	1.09 (1.02-1.16)
Sex (male)	0.162	0.11	2.17	1	0.140	1.18 (0.95-1.46)
At risk						
Age (years)	0.082	0.027	9.06	1	0.003	1.08 (1.03-1.15)
Sex (male)	0.107	0.093	1.34	1	0.247	1.13 (0.93-1.34)

SE, Standard error

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National versus local prevalence of high BMI categories stratified by age and gender is presented in Table 2. Collapsed across age and sex, results indicate a significantly greater prevalence of high BMI in the rural children studied versus national averages. The 17% of Athens County children classified as at risk for overweight (BMI $\geq 85^{th}$ and $<95^{th}$ percentiles) exceeds national estimates (15.6%), $p < 0.001$. Similarly, the prevalence of overweight children (BMI $\geq 95^{th}$ percentile) in Athens County (20.9%) is significantly higher than that of the national population (15.6%), $p<0.001$. As shown in Table 2, these findings did not differ by gender; significantly greater prevalence rates of high BMI were found in males and females relative to national averages.

The relationship of demographic variables with high BMI ($\geq 85^{th}$ percentile) is presented (Table 3). Univariate logistical regressions indicate that both age, $\chi^2_{(1)} = 28.26$, $p < 0.001$, OR = 1.11 and male gender, $\chi^2_{(1)} = 10.65$, $p = 0.003$, OR = 1.23 are significantly associated with the prevalence of high BMI ($\geq 85^{th}$ percentile) in the sample. In examining the 2 categories of high BMI separately, however, gender and age were found to be significantly associated with *overweight* (BMI $\geq 95^{th}$ percentile). Neither variable is significant for children in the *at risk for overweight* category. As can be seen (Table 3), higher proportions of males (22.6%) than females (19.3%) were significantly overweight.

Demographic and behavioral factors associated with the odds of having high BMI for age are presented (Table 4). Data for these analyses were drawn from an optional HIS completed by 291 parents and caregivers of participants prior to the first data collection session. A univariate χ^2 test of independence was run for the blended category of high BMI, rather than for the at risk for overweight and overweight categories separately, because the latter 2 analyses yielded insufficient cell memberships (<5%) to meaningfully interpret the results. The necessity to pool the at risk for overweight and overweight categories in order to obtain sufficient power to run analyses suggests that a higher proportion of respondents had children with normal-range BMI ($>85^{th}$ percentile). Thus, the HIS findings may provide additional insights into the health habits of this population but their significance should be interpreted cautiously, given the limitations outlined above.

Significant correlates of high BMI for this subset of the sample included high BMI include male gender, television viewing, parental diabetes and tobacco use in the household. In addition, eating school breakfasts and lunch were also positively associated with high BMI. In contrast, several factors were associated with lower odds of having high BMI, including higher income (≥$35K), having more than one caregiver/parent in the home, and participating in gymnastics.

Discussion

A school-based BMI screening program was initiated to estimate the prevalence of high BMI in 6-11 year-old children living in a rural Appalachian region. The major findings from this study are: (i) the prevalence of childhood overweight and at risk for overweight in our rural Appalachian sample is significantly higher than national averages; (ii) sex is significantly associated with prevalence of high BMI, with a greater likelihood of boys being overweight than girls; (iii) age is significantly related to prevalence of high BMI, with older children more likely to be overweight than younger; and (iv) demographic and behavioral correlates of high BMI in this sample include lower SES, parental smoking, eating meals at school, and television viewing. Factors inversely related to high BMI include higher SES, having more than one caregiver in the home, and participation in gymnastics.

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Table 4: Demographic and behavioral factors associated with the odds of having high body mass index

Demographic		Normal BMI[a] *N* (%)	High BMI[¶] *N* (%)	Unadjusted *P* value	Unadjusted OR (95% CI)
Age (years)		–	–	0.036	1.19 (1.01, 1.40)
Sex	Male	85 (67.5)	41 (32.5)	0.122	1.51 (0.89, 2.25)
	Female	116 (75.8)	37 (24.2)		1
Income (US$)	≥35,000	134 (78.4)	37 (21.6)	0.001	0.42 (0.25, 0.72)
	<35,000	61 (60.4)	40 (39.6)		1
No. adults	1	23 (56.1)	18 (43.9)	0.018	2.26 (1.14, 4.47)
	>1	173 (74.2)	60 (25.8)		1
Food [§]					
School breakfast	yes	76 (65.0)	41 (35.0)	0.023	1.84 (1.08, 3.14)
	no	123 (77.4)	36 (22.6)		
School lunch	yes	145 (68.7)	66 (31.3)	0.039	2.05 (1.03, 4.08)
	no	54 (81.8)	12 (18.2)		1
Fast food	yes	120 (69.8)	52 (30.2)	0.326	1.32 (0.76, 2.28)
	no	79 (75.2)	26 (24.8)		1
Activities[‡]					
Gymnastics	yes	61 (83.6)	12 (16.4)	0.009	0.411 (0.21, .82)
	no	138 (67.6)	66 (32.4)		1
TV watching	yes	164 (69.2)	73 (30.8)	0.017	3.12 (1.17, 8.28)
	no	35 (87.5)	5 (12.5)		1
Exercise	yes	110 (74.3)	38 (25.7)	0.325	0.77 (0.46, 1.30)
	no	89 (69.0)	40 (31.0)		1
Health condition[¶¶]					
Diabetes	yes	109 (66.1)	56 (33.9)	0.009	2.10 (1.19, 3.70)
	no	90 (80.4)	22 (19.6)		1
Hypertension	yes	119 (70.0)	51 (30.0)	0.390	1.27 (0.74, 2.19)
	no	80 (74.8)	27 (25.2)		1
Obesity	yes	92 (67.2)	45 (32.8)	0.086	1.59 (0.94, 2.70)
	no	107 (76.4)	33 (23.6)		
Tobacco use[¶¶]	yes	66 (62.9)	39 (37.1))	0.009	2.03 (1.19-3.46)
	no	134 (77.5)	39 (22.5)		

†Normal BMI = 5≤ BMI ≤85%; ¶High BMI = BM I ≥85%; §'Yes' indicates children typically eat the type of meals indicated; ‡Children typically enjoy engaging in activity types; ¶¶Parents/caregivers currently have this a health condition or engage in this behavior.

Consistent with many national, state, and regional epidemiological studies, obesity is highly prevalent in our sample of rural elementary school children[6,10,31]. The 20.9% of participants classified as overweight (BMI ≥95th percentile) exceeds national estimates by more than 4%. A narrower but still significant margin exists between the 17% of rural children identified as at risk for overweight and the national average (15.6%) for this age group. That these higher-than-national prevalence rates are true for boys and girls alike further emphasizes the pervasiveness of obesity in this county; all children are affected, although some subpopulations have higher prevalence rates and greater associated risks than others.

Estimates of the *extent* of high BMI in this sample varied by sex. Among the children classified as at risk for overweight, boys and girls alike demonstrated similar prevalence rates (16.9% and 17.1%, respectively). Gender differences did occur, however, among overweight children, with prevalence of overweight in boys (22.6%) being significantly higher than in girls (19.3%). Given these finding, it is not surprising that male gender emerged as a significant risk factor for overweight, with boys 23% more likely to develop overweight than girls. This higher prevalence of obesity in boys is consistent with previous epidemiological investigations. To the best of our knowledge, however, there are no developmental or genetic reasons for elementary-

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school aged boys to have such high prevalence of, and risk for, obesity[7,22]. More research is needed to identify possible factors that mediate the relationship between male sex and obesity, and also to determine if an interaction exists between regional residence and sex, such that high overweight prevalence in boys is part of a general trend in rural areas or is more specific to particular regions. Nevertheless, this finding furthers our objective of identifying local populations of children whose weight status warrants clinical intervention.

In addition to examining sex differences in the distribution of high BMI, the present study looked at prevalence rates by year of age. Collapsed across sexes, concentrations of high BMI by age were found to vary according to level of BMI. The percentage of children classified as *at risk for overweight*, for example, fluctuated by year, with age 9 years (14.7%) having the lowest prevalence. Ten and 11 year olds constituted the highest proportion of children at risk for overweight and were the only two ages in which BMI rates were significantly higher than the national average. Interestingly, the prevalence of *overweight* children followed a different pattern. Six year olds in our sample demonstrated the lowest prevalence of overweight (14.3%) relative to other ages; in addition, this rate was significantly less than the national average (17%). Ages 7 to 11 years, however, demonstrated a near linear increase in prevalence of overweight.

Although the design of this study is not longitudinal and precludes extrapolation, these findings suggest that a relatively large proportion of children in Athens county will enter middle school already overweight. This is alarming for two reasons. First, evidence exists that overweight children are more likely to remain overweight than their at risk for overweight normal weight counterparts[32]. Second, obesity that is carried into adolescence is more likely to endure into adulthood; at least one study, for example, found that that 33% of overweight boys between the ages of 8 and 13 years become obese adults[32].

The design of this study allows us to speculate about, but not establish possible reasons for the findings. The HIS highlighted several health, lifestyle and behavioral factors that may explain the BMI prevalence rates. As with numerous other studies, a positive association was found among high BMI and habitual television viewing, sedentary behavior, and parental diabetes, and tendency to eat school breakfasts and lunches[16-23]. These correlations make intuitive sense and corroborate the findings of previous research, but must be interpreted with caution because they represent only a subset of participants and may not readily generalize.

Of note, in examining the response rates of the optional HIS, it was discovered that a disproportionate number of respondents had children in the normal BMI range (<85th percentile). Although the reasons for this unbalanced representation of respondents can only be speculative, it could be that parents of overweight children are less inclined to disclose nutritional and health habit information due to shame, guilt, or fears of being ‘blamed’ for their children’s obesity. Whatever the reason may be, this finding illuminates a potential consideration for other pediatric obesity researchers and interventionists: namely, that the participants you seek to reach may be the hardest to access.

The findings of this study must be interpreted within other limitations. In conducting multiple school-based BMI screenings, it was necessary to balance methodological rigor with feasibility. Accordingly, there was no attempt to track the changes in individual participants’ BMI over the 12 months of the study. Thus, some participants were measured more than once across the 3 screening sessions, but the distribution of BMIs per measurement were homogenous enough to allow all the data to be pooled.

In addition, although BMI is the most pragmatic way to gauge pediatric obesity, it not a direct measure of adiposity[16]. Although our findings would have been strengthened by including waist circumference measurements, for example, we deemed this unfeasible given the time constraints imposed by the schools and the sheer number of students targeted.

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Despite these limitations, this research contributes to current knowledge of obesity in children. Our data concur with prevailing conclusions in the pediatric obesity literature, especially regarding higher-than-national prevalence of overweight in rural areas. In addition, this study adds a unique perspective, for within the vast body of obesity research there is a paucity of studies devoted specifically to the health of Appalachian children. In a related vein, this study adds to the relatively meager body of research on pediatric obesity in remote, underserved areas. Finally, we cite our methodology as major contribution of this study. School-based BMI screenings are the most efficient way to gather cross-sectional and longitudinal data about the prevalence and incidence of pediatric obesity. It is the hope (and recommendation) of the authors that other rural researchers and clinicians are not daunted by the complexities of conducting large-scale screenings within schools. Indeed, the public health benefits of having this information – for children, parents, and health service providers – outweighs the logistical considerations of conducting community-based research.

Conclusion

Given the pervasive poverty, health disparities and premature mortality found in Appalachia, it is critical to identify and address the unique health needs of its youngest residents[33,34]. Appalachian communities tend to be remote and isolated, both geographically and culturally, from the rest of the nation. Little is known about how health risks and conditions such as obesity develop throughout Appalachian residents' lifespan[6,35]. Moreover, although most Appalachian regions are rural, not all rural areas are Appalachian; thus, we cannot readily assume that pediatric obesity in Appalachian areas approximates obesity in rural America. The findings of this study indicate that the prevalence and possible correlates of childhood obesity in *this* Appalachian region are, in fact, comparable with other rural, non-Appalachian areas. Whether or not other regions follow suit is the task of future epidemiological research. By focusing on one piece of this larger health picture, however, this study provides additional insights into this population, and helps to locate Appalachia within the larger context of a national obesity crisis.

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