

102.

ASSOCIATION BETWEEN ASTHMA AND PHYSICAL ACTIVITY IN ADOLESCENTS: ANALYSIS OF REPRESENTATIVE NATIONAL DATA FROM THE 2011 YOUTH RISK BEHAVIOR SURVEYClayton Li¹, Andrew Adesman, MD², Majnu John, PhD³.¹North Shore-Long Island Jewish Health System; ²Cohen Children's Medical Center of New York; ³Zucker Hillside Hospital, North Shore LIJ Health System.

Purpose: Moderate physical activity (PA) has been shown to be beneficial for alleviating some of the symptoms of asthma in teens. Unfortunately, many youth with asthma avoid rigorous PA for fear of an asthma attack. Decreased PA is linked to being overweight or obese. If teens with asthma are at increased risk of being overweight or obese, then it is important to determine if their decreased activity is secondary to their asthma or their weight status. Previous analyses of national data have not accounted for the effect of BMI on PA in asthmatics. Using data from the 2011 Youth Risk Behavior Survey, this study will analyze the association between: (1) asthma and obesity, (2) asthma and PA, and (3) asthma and total sedentary behavior (TSB) in high school adolescents (HSS) while controlling for BMI.

Methods: Subjects were in the 9th to 12th grades (N = 12286) and were categorized into current asthma (N = 1499), past-not current asthma (N = 1339) and never had asthma groups (N = 9448) based on their answers to two questions: "Has a doctor or nurse ever told you that you have asthma?" and "Do you still have asthma?". Primary analyses compared HSS with current asthma with HSS who never had asthma (controls) across the following domains: overweight, obesity, physical activity, and TSB while controlling for age, sex, grade, race/ethnicity and BMI using analyses specifically suited for survey data in SAS 9.2. Overweight was defined by BMI between 85th and 95th %, and obese as > 95th %. Physical activity was assessed with a single question: "During the past 7 days, on how many days were you physically active for a total of at least 60 minutes per day?" TSB was determined by adding the responses to two questions regarding hours spent daily watching television and/or playing video games.

Results: 12.6% of HSS reported having current asthma and 76.52% never had asthma (10.90% had past asthma). Asthmatics were more likely to be obese (16.37% vs. 11.84%; adjusted Odds Ratio [aOR] = 1.513, 95% CI = 1.248, 1.835; $p < .0001$). A similar trend was noted for being overweight (aOR = 1.17, 0.986, 1.396; $p = .07$). Teens with current asthma reported having sufficient PA (being physically active for 60 minutes for 5+ days per week) than those who never had asthma (aOR = 1.161, 95% CI = 1.012, 1.332). Students with current asthma reported being physically active for 60+ minutes on an average of 5.16 (Standard error of mean [SEM] = .10) days per week versus 5.10 (SEM = .07) days each week for students without asthma. No significant differences in TSB (= 5 hours) were found between the two groups. Past asthmatics did not differ from the other groups in any of the outcome variables examined.

Conclusions: Studies not controlling for BMI suggest asthmatics are less active than non-asthmatics. Analysis of the 2011 YRBS data shows that teens with asthma, though more likely to be heavy, are no less active than non-asthmatics when adjusted for BMI. Greater efforts to reduce obesity in asthmatics would likely result in even greater PA and overall health.

Sources of Support: None.

103.

THE INTERACTION OF BIOLOGICAL AND ENVIRONMENTAL FACTORS IN PREDICTING EDUCATIONAL ATTAINMENT: THE ROLE OF EARLY PUBERTAL DEVELOPMENT AMONG EMERGING ADULT WOMEN IN RURAL AND URBAN SETTINGSCatherine Emily Hendrick, MPH¹, Jessica Duncan Cance, PhD¹, Julianna Deardorff, PhD².¹The University of Texas at Austin; ²University of California, Berkeley.

Purpose: Early pubertal development among girls is associated with numerous behavioral and physical health risk factors in adolescence and beyond. However, most research has focused on urban populations. The purpose of this study was to address this gap by examining the moderating effect of geographic location (urban vs. rural) on the association between early menarche, a marker of early pubertal maturation, and educational attainment, a strong predictor of current and future health, among a diverse sample of emerging adult women.

Methods: Data are from a larger study focusing on the sexual and reproductive health of women aged 18-22 (mean = 19.9, SD = 1.5) from 44 urban (64.2%) and rural (35.8%) sites in Arizona. Participants represented the major ethnic groups in Arizona: white (39.2%), Latino (27.4%), Native American (16.0%), and black (14.1%). The analytic sample consisted of 1,907 women. Participants completed an anonymous questionnaire in English and Spanish. Educational attainment was determined by asking women how many years of schooling they had completed (range: 1 = 9th grade or less to 5 = some college/college graduate). Pubertal timing was assessed using women's self-reported age at menarche; early menarche was menarche occurring before age 12 (26.8 % of women in the study). A stepwise linear regression model was run in SPSS 21.0, controlling for participant age, race/ethnicity, mother's educational attainment, and current marital status. Early age at menarche and geographic location were added in a second step and the interaction of the two variables was added in a third step.

Results: Average age at menarche did not differ by geographic location (mean = 12.2, SD = 1.6). Rural participants were more likely to have ever been married (24.4% v. 15.5%, $p < .001$) and have a mother who did not attend college (60.4% v. 52.8%, $p = .002$). Black participants were more likely to be living in urban communities (91.2%) and Native American participants were more likely to be living in rural communities (61.3%). Rural participants were less educated than urban participants ($p < .001$), as were participants who had experienced menarche "early" (before age 12) compared to those who had experienced menarche at age 12 or later ($p < .001$). After adjusting for participants' age, race/ethnicity, mother's educational attainment, and current marital status, living in an urban setting was associated with a higher level of education while early pubertal timing was not significant. The addition of the interaction between geographic location and early puberty was significant ($B = .329$, $p < .005$) suggesting that pubertal timing had differing associations with educational attainment based on geographical location. Early puberty was associated with less education among women living in rural settings ($B = -.227$, $p = .028$), but was not significantly associated with educational attainment among urban women ($B = .050$, $p = .451$).

Conclusions: Young women living in urban communities were buffered from the deleterious effects that early pubertal development had on rural participants' educational attainment. Our

findings suggest that a girl's community context may play a key role in mitigating the risks associated with early pubertal development.

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104.

IMPROVING A PEDIATRIC RESIDENCY ROTATION IN ADOLESCENT MEDICINE

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Purpose: To guide our revision of an adolescent medicine rotation for pediatric residents, we conducted a learner and stakeholder needs assessment. Our objectives were to: 1) assess stakeholder perspectives on residents' needs and how well those needs are met by the current curriculum and; 2) assess residents' perspectives on their knowledge, needs, and expectations of the rotation.

Methods: We conducted an iterative assessment of perspectives of faculty and learners on the previous resident rotation in adolescent medicine. Faculty interviews included the pediatric residency director, chief residents, outpatient clinic site directors, and the course director and staff for the adolescent medicine rotation. We assessed where residents receive formal education about adolescent health, as well as the content and quality of that information. We then reviewed adolescent health content of the residents' outpatient curricula and experiences, including the adolescent medicine rotation, outpatient continuity clinic, and the residency noon conference series. We asked faculty to discuss strengths and challenges of the rotation, and identify areas for update.

Next, we developed a tool to compare entering interns versus graduating residents with respect to knowledge about reproductive health. We asked residents to self-rate comfort and competence in common adolescent medicine scenarios.

Results: Faculty interviews revealed that residents are exposed to adolescent medicine in many settings. Their perceived needs included contraceptive/gynecologic education and a focus on adolescent medicine content for the Pediatric Board exam. Faculty also noted that pediatric residents are particularly challenged by patients with substance use issues and those in need of gynecologic exams.

Faculty identified several areas for improvement: residents 1) spent redundant time on inpatient rounds, 2) lacked materials focused on positive youth development, and 3) needed new community opportunities. We also found that rotation materials were disorganized and redundant.

Through the pediatrics residency program, we surveyed 23 incoming interns and 18 graduating residents. The graduating residents felt more comfortable and competent than their first year counterparts in caring for adolescent patients. Program graduates answered the reproductive health knowledge questions more accurately than the first year residents, but there were notable gaps in their knowledge, e.g, about emergency contraception. The curriculum content assessment varied widely between the first and third year respondents. Interns reported broad interests in adolescent health ranging from history-taking to functional pain

syndromes, whereas graduating residents felt well prepared, yet desired more reproductive health content.

Based on these results, we made a number of changes to the rotation, including an electronic format organized by the ACGME requirements. We added online reproductive health content with self-study time in place of lower-yield activities, and a resident self-reflection exercise before and after the rotation. Curricular changes are now being implemented and evaluated. We plan a qualitative study of residents' pre- and post-rotation self-reflection data, and will examine adolescent medicine experiences of residents outside the adolescent medicine rotation.

Conclusions: It is important to continually update institutional curricula in adolescent medicine as the field of adolescent medicine – and our learners – evolve.

Sources of Support: None.

LGBTQ

105.

STARTING A CLINIC FOR TRANSGENDER YOUTH IN AN ACADEMIC MEDICAL CENTER: APPLICATIONS OF THE PRIMARY CARE MEDICAL HOME MODEL

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Purpose: To describe the initiation of interdisciplinary services to gender variant, questioning, or transgender youth in our subspecialty adolescent medicine practice using the medical home model.

Methods: Adolescent Medicine specialists are skilled in working with teens and families around complex medical, social, and psychological issues, using multidisciplinary and community-based approaches. Living with a non-conforming gender identity and expression can place an adolescent at higher risk of significant psychosocial stressors that can result in significant psychological distress, and increased morbidity and mortality. Data shows that a multi-disciplinary treatment approach can help reduce this risk. The University Rochester Adolescent Medicine group began providing medical treatment including pubertal suppression, cross gender hormone treatment, surgical referrals, and interdisciplinary management services to transgender youth in 2009. We conducted an initial needs assessment including discussions with multiple medical and psychological disciplines as well as community agencies, in order to address administrative and institutional support, subspecialty collaboration, social work support, insurance coverage, patient recruitment, provider education, and confidentiality. In addition, we also reviewed clinical service changes with existing staff, including the need for injection teaching and more frequent in-clinic lab collection.

Results: We now serve 20 youth (9 transwomen and 11 transmen), ages 9-25 years old, from a range of sociodemographic backgrounds and with varying degrees of familial support. Organizing our clinical services within the Primary Care Medical Home (PCMH) model, we identify several strengths and challenges in the realms of comprehensive care (CC), patient-centered services (PCS), coordination of care (CoC), service accessibility (SA), and quality and safety (QS). Examples of strengths include: staff flexibility for pre-clinic team meetings (CC); collaboration with endocrinology and surgical colleagues (CC, CoC); visit length (PCS); focus on relationship-based clinical interactions (PCS);