



#952607: Active cigarette smoking rates for urban adults and children with asthma: the Chicago Initiative To Raise Asthma Health Equity (CHIRAH)

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ABSTRACT

Introduction: Rates of smoking exposure are mainly from non asthmatic cohorts or non-community-based asthma samples. CHIRAH is an ongoing community-based study of asthma disparities. This analysis presents information on early results for adults and children/caregivers from CHIRAH.

Methods: The CHIRAH cohort is recruited via a population proportionate weighted school-based sampling of families to enroll either a caregiver and child (aged 8 to 14 years) with asthma, or a household adult (ages 18-40) with asthma.

Asthmatic subjects are interviewed and provide a salivary cotinine sample which is assayed by enzyme-linked immunoassay. The lower level of detection of this test is 20 ng/ul of saliva, a limit sensitive to active smoking. Caregivers and adults are assessed for smoking history, number of smokers in the household, and number of rooms in the home.

Results: This analysis is based on 89 child/caregiver dyads and 62 adult subjects with smoking self-report information and cotinine levels. By questionnaire, 49/ 89 (55.1%) children were exposed to cigarette smoking in the home, with 25 households with more than one smoker in the home. Eight of 9 children with positive cotinine levels had a level above 100 ng/ul, suggesting active smoking (10.1%). There were 19 adults who were active smokers by their own report (30.6%). Using cotinine levels greater than 100 ng/ul as a threshold connoting active smoking, 30 adults were actively smoking (48.4%), a self reported misclassification of 17.8% of the adult sample.

Conclusions: The prevalence of smoking among adults and children with asthma in this urban community based cohort is high, and awareness of this comorbidity allows a potentially powerful avenue for intervention to improve asthma symptoms. **Funding Source:** NHLBI grant IUO1 HL072496-01

BACKGROUND

•Low socioeconomic status has been correlated with increased incidence and morbidity from asthma. (1-6)One associated factor associated with severity, cigarette smoking, is higher among disadvantaged populations. (7)

•Recent estimates of current smoking in Chicago (Youth risk behavior survey data - NHIS 2003) range from 14.4 to 18.5 % in 9th to 12th graders.(8)

•Of these, 33.1% smoked 20 out of the last 30 days, suggesting nicotine dependency (2003 NHIS)(8)

•Other studies of asthmatic cohorts had suggested rates as high as 48.3% of households had current smokers (9,10). However, these cohorts were non-community based and hence may have had a selection bias due to severity. A school screening survey showed that 25.5% of mothers of diagnosed asthmatics reported active smoking, suggesting a lower amount of exposure may be present if the cohort is community based (11), compared to non-asthmatic community based cohorts with rates of 49.4%. (12) This was not seen in telephone based community health survey (general cohort) where in 3 disadvantaged neighborhoods the number of those exposed to second hand smoke approached or exceeded 50%. (13)

AIM

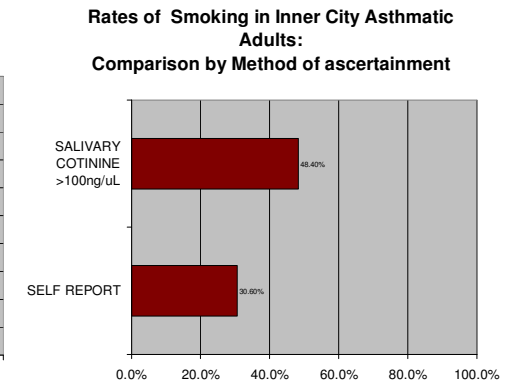
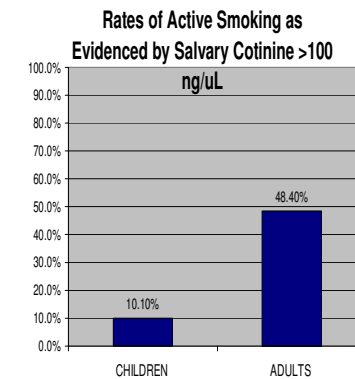
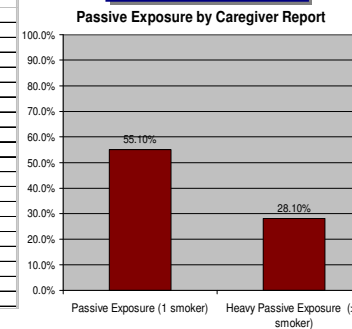
To Determine the rates of active smoking in both adults and children aged 8 to 14 in our community based, inner city cohort of asthmatic subjects.

METHODS

The study population is derived from the ongoing CHIRAH study: Chicago Health Initiative to Raise Asthma Health Equity. Participants are identified through the Chicago public and Archdiocese schools located across Chicago. A four question screening instrument is used initially to identify school children and adults in their household with asthma. From the households with asthma, individuals (either children/caregiver dyads, or adults with asthma) were recruited to participate in an 18 month observational study of asthma morbidity. To enroll subjects additional inclusion criteria were used including a confirmation of asthma diagnosis, along with the requirement for asthma treatment at least 8 weeks in the prior year. This analysis is based on 89 child/caregiver dyads and 62 adult subjects with smoking self-report information and cotinine levels. Cotinine levels were determined by enzyme-linked immunoassay. The lower level of detection of this test is 20 ng/ul of saliva, a limit sensitive to active smoking.

RESULTS

DEMOGRAPHIC CHARACTERISTICS OF SAMPLE	
CHILDREN	ADULTS
AGE (MEAN)	AGE (MEAN)
SEX (M:F)	SEX (M:F)
RACE	RACE
AFRICAN AMERICAN	AFRICAN AMERICAN
CAUCASIAN	CAUCASIAN
HISPANIC	HISPANIC
ASIAN/ P. ISLANDER	ASIAN/ P. ISLANDER
OTHER	OTHER
INCOME LEVEL OF CAREGIVER	INCOME LEVEL
<\$15000/YEAR	<\$15000/YEAR
\$15000 - 30000	\$15000 - 30000
>\$30000	>\$30000
CAREGIVER EDUCATION LEVEL	EDUCATION LEVEL
> HIGHSCHOOL	> HIGHSCHOOL
HIGHSCHOOL	HIGHSCHOOL
>HIGHSCHOOL	>HIGHSCHOOL
Mean FEV1	Mean FEV1
# of types of inhalers	# of types of inhalers



CONCLUSIONS

- The prevalence of smoking in community based asthmatic cohorts in lower socioeconomic status populations is comparable to reports of smoking prevalence in non asthmatic children.
- Childhood second hand smoke exposure prevalence is similar to that noted in non - community based asthmatic samples.
- Active smoking among 8-14 year olds is up to 10.1%. This is not appreciably lower than that seen in older children [with and without asthma] from similar neighborhoods and socioeconomic strata.(8)
- Self report appears to significantly underestimate of smoking rates.
- The prevalence of smoking among adults and children with asthma in this urban community based cohort is high. Awareness of smoking prevalence allows a potentially powerful avenue for intervention to improve asthma symptoms.

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