Online Data Supplement

Violence, Abuse, and Asthma in Puerto Rican Children

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Methods:

Subject recruitment and study protocols have been described in detail elsewhere (E1). In brief, this was a population-based prospective cohort study of the prevalence of antisocial behaviors and associated co-morbid conditions (e.g., asthma) among randomly sampled Puerto Rican children in each of two sites. Children in the South Bronx (New York) and the Standard Metropolitan Areas (SMAs) of San Juan and Caguas (Puerto Rico) were enrolled from July 2001 through August 2003. Children and their caretakers were interviewed annually in three waves. Because detailed information about asthma history and family history of asthma was collected during the third interview from island Puerto Rican children and not from mainland Puerto Rican children, only island Puerto Rican children who participated in the third wave were included in the present study. The study was approved by the Institutional Review Boards of the New York State Psychiatric Institute and the University of Puerto Rico Medical School.

The study employed a multistage probability sample method. Briefly, primary sampling units (PSUs) were randomly selected neighborhood clusters based on the 1990 U.S. Census and subsequently adjusted to the 2000 census. Secondary sampling units were randomly selected households within each individual PSU. A household was eligible if 1) at least one resident was a child between the ages of 5 and 13 years and was identified by his/her parents/primary caretakers as being of Puerto Rican background and 2) at least one of the child's parents or primary caretakers in the household also self-identified as being of Puerto Rican background. In households with more than one eligible child, a maximum of three children were randomly selected to participate. Children were not eligible if they had mental retardation or developmental disabilities, or if they had not resided in the household for at least nine months

Procedures

Families were invited to participate by trained interviewers who visited each randomly selected household. Initial contact was attempted up to six times per household. Informed consent was obtained from the parents of each participant. Children older than 7 years also signed assent forms. Structured questionnaire interviews were conducted in English and/or Spanish based on the preferences of the participants. Information for the present study was collected a follow-up interview two years after enrollment.

Whenever possible, the interviewers tried to assure the privacy of both the parents and the children by separating them during the interviews. Both the consent form for parents and for children 12 years and older contained a statement stating that the information collected for the study would remain confidential, except for cases in which child physical or sexual abuse or life threatening situations were reported or observed. In those cases, the researchers were obligated by concern for the participant to ensure a report was made to the Department of Social Services.

Measures

All measures included in this analysis were based on child and parent/guardian responses to interview questions. The study instrument was part of the Service Utilization and Risk Factors Interview (SURF) which was developed for the Epidemiology of Childhood and Mental Disorders (MECA) study(E2) for the purposes of assessing the presence of risk factors associated with mental illness. Psychometric properties of the specific components of the SURF (i.e. medical history, socio-demographics)(E3) and methods used for cross-cultural adaptation and translation(E4, E5) have been described elsewhere.

All data used for this study was taken from the third wave of data collection. Additional indicators of socioeconomic status, including maternal education and parental marital status, were only available from the first (baseline) wave of data collection. These baseline SES indicators were utilized for the purposes of confirmatory analyses but were not presented in the final results.

Exposures: Information about exposure to stress, violence, and abuse used in the current study was elicited during the two-year follow-up visit. Exposure to violence was assessed using children's responses to a modified version of Richter & Martinez's *Exposure to Community Violence Scale* (E6). The items included in the Exposure to Violence Scale are as follows: being chased by a gang, being made to use/sell/carry drugs, having an accident bad enough that someone might have died, having been arrested or had a fight with the police, having been threatened or seriously hurt, having been a victim of an assault or a beating, having been sexually molested/violated, having been attacked or threatened with a knife, having been threatened with a serious act of violence, having been shot at with a gun or pistol, having one's home broken into. Being a victim of violence was defined as answering "yes" to "Has [any of the above items] happened to you," in the previous year. Being a witness to violence was defined as answering "yes" to "You saw [any of the above items] happen to someone else with your own eyes," in the previous year. The child's history of physical, and sexual abuse during the previous year was elicited separately from parents and children using the modified *Traumatic Experience Questionnaire* (E7). If either the parent or the child reported answered "yes" to any item on that scale, the *abuse* variable was coded as positive. Physical abuse was measured with items related to the child having ever been hit by a caregiver with an object two or more times, or ever being

hit by a caregiver with a fist, kicked hard, beaten up very hard, or purposely injured one or more times. Sexual abuse was measured with items related to being forced to look at or touch an adult's or older child's private parts or having them ever try to touch, grab, or kiss the child in a sexual way one or more times. The child was asked to complete the *Stressful Life Events Scale* (E3, E8) which asked about twenty major life stressors (e.g. death of a family member, parents' divorce, moving to a new home/school) during the previous 12 months. The child was considered to have had "stressful life events" if he/she answered yes to $\geq$2 items on that scale (E9). This number was chosen because two or more events was above the mean number of events in the study population(E10).

Table E1

Table 1. Characteristics of Study Population*

CHARACTERISTIC	**N**	**Unweighted %**	**Weighted† %**
Females	588/1213	48.5	48.4
Income <$18,000 in past year	729/1189	61.3	60.0
Received public assistance in past year	452/1212	37.3	37.1
Maternal history of asthma	247/1191	20.7	20.1
Paternal history of asthma	153/1119	13.7	13.5
MD visit for routine care, past year	840/1212	69.3	70.3
≥2 stressful life events in past year	518/1149	45.1	45.4
Victim of Neighborhood Violence, past year	84/1201	7.0	7.1
Witness of Neighborhood Violence, past year	173/1198	14.4	14.8
Victim of Physical or Sexual Abuse, past year	75/1199	6.3	6.8
Diagnosed with asthma by MD	478/1206	39.6	40.1
Wheeze/whistling in chest during past 12 months	168/1206	13.9	14.6
Current asthma (diagnosed with asthma by MD *and* wheeze/whistling in chest during past 12 months)	144/1205	12.0	12.7
Diagnosed with allergic rhinitis/conjunctivitis by MD	321/1206	26.6	26.4
Child brought to MD office/clinic for asthma in past 12 months	113/1207	9.4	9.9
Taken prescription medication for asthma in past 12 months (among asthmatics only)	225/478	47.1	49.6

* Numbers and percentages vary because of missing information on some variables.

† "Weighted" refers to population-based adjustment for the age and gender distributions of the San Juan and Caguas Standard Metropolitan Areas based on the 2000 U.S. Census.

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