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Original article

Variations in associations of health risk behaviors among ethnic minority early adolescents

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Abstract

Purpose: To investigate patterns of vulnerability and protection factors associated with risk behaviors and the co-occurrence of risk behaviors in minority ethnicity early adolescents.

Methods: Analysis of data from the Research with East London Adolescents Community Health Survey (RELACHS), a school-based study of a representative sample of 2789 adolescents age 11–14 in 2001 (sample 73% non-Caucasian, 21% born outside the United Kingdom). Questionnaire data were obtained on sociodemographic variables, ethnicity, smoking, drinking, drug use, psychological well-being, physical health, and social support from family and peers. Models of associations for each behavior and co-occurrence of risk behaviors (defined as engaging in ≥ 2 behaviors) were developed by hierarchical stepwise logistic regression.

Results: Two hundred ninety-two (10.9%) reported 1 risk behavior, 84 (3.1%) reported 2, and 25 (0.9%) reported 3 behaviors. In multivariate models, psychological morbidity was associated with higher risk of all behaviors and co-occurrence, while higher family support was associated with lower risk in all models. Non-Caucasian ethnicity was associated with lower risk of regular smoking and co-occurrence but not drinking or drugs. Birth outside the United Kingdom was associated with lower risk for individual behaviors but not co-occurrence. Religion and religious observance were associated with lower risk of smoking and drinking but not drug use or co-occurrence. Peer connectedness was associated with drug use, but with increased risk. Socioeconomic status was associated only with smoking.

Conclusions: Patterns of associations of personal, family, and environmental factors appear to differ between smoking, drinking, lifetime drug use, and the co-occurrence of these behaviors. Hypotheses regarding common factors related to health risk behaviors may be misleading in ethnic minorities and immigrants. Co-occurrence may represent a distinct behavioral domain of risk that is partly culturally determined.

Keywords: Smoking; Alcohol; Drug use; Health risk behaviors; Co-occurrence of health risk behaviors; Ethnicity; Acculturation; Mental health

Health risk behaviors in adolescence such as smoking, alcohol, and drug use are issues of major public health concern. Adolescence, particularly early adolescence, is a common time of adoption of many behaviors with adverse long-term impact on health [1], and there is strong evidence that health risk behaviors including smoking, drug,

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and alcohol use begun in adolescence track into adult life [2,3]. While interventions to prevent young peoples' participation in health risk behaviors have traditionally focused on single behaviors, there is growing evidence that health risk behaviors such as smoking, drinking, and drug use [4], as well as sexual risk and violence [5,6] co-occur in high-risk young people. There remains a debate about whether these associations may reflect in part a "gateway" drug effect, where young smokers or drinkers have more exposure to and opportunity for illicit drug use [7]. However, a growing body of evidence suggests that this co-occurrence represents common predisposing and protective factors for health risk behaviors, arising from adolescent developmental processes [5,8]. Common factors related to higher risk of health risk behaviors have been suggested to include low socioeconomic status [9,10] and poor mental health [11–12], while connection with family, and school and religion [8] have been suggested to be protective.

More recent work, while supporting hypotheses regarding health risk behaviors as a single "syndrome," has challenged monolithic conceptualizations of risk behaviors and suggested that different profiles of health risk behavior co-occurrence may be associated with different patterns of vulnerability and protective factors [5]. It is highly likely that such patterns of vulnerability and protection may differ between different cultural and ethnic groups, where putative vulnerability and protective factors identified in research with large or "mainstream" cultural groups may have alternative cultural meanings and significance. It is also likely that the associations between health risk behaviors and profiles of health risk behavior co-occurrence will vary within such groups, particularly where certain risk behaviors (e.g., alcohol consumption) may be particularly proscribed. However, little work has examined patterns of vulnerability and protective factors for individual risk behaviors and the profiles of co-occurrence of behaviors in minority ethnicity groups. We used data from a population-based predominantly non-"Caucasian" cohort of 2790 11–14-year-old inner urban English adolescents to investigate the extent to which smoking, drinking, and drug use co-occur in this early adolescent population, and explore whether factors associated with co-occurrence of risk behaviors differed from those of individual behaviors such as smoking, drinking, and drug use.

Methods

We used data from the Research with East London Adolescents Community Health Survey (RELACHS), a school-based epidemiological study of a representative sample of 2789 adolescents from Year 7 (11–12 years of age) and Year 9 (13–14 years of age) attending 28 schools in 3 regional authorities in East London, United Kingdom, in 2001 [13]. All 42 eligible schools were stratified by borough and school type (comprehensive, voluntary, other). Thirty schools were randomly selected and balanced to ensure representation of single-gender and mixed-gender schools. In each of the 28 schools that agreed to participate, representative mixed ability classes were selected (2 classes from Year 7 and Year 9). The overall response rate was 84%: 85% in non-Caucasians, 77% in Caucasians; while 3.5% refused to participate and 12.2% were absent. Data were collected by student-completed questionnaires on mental and physical health, health behaviors, social capital, and sociodemographic factors. The questionnaire was group administered to the pupils, who completed them individually in classrooms under supervision of researchers who addressed pupils' queries. After completion of questionnaires, researchers sought permission from young people to check their questionnaire for missing data. Height (Seca Leicester portable stadiometer, Seca Vogel, Hamburg, Germany) and weight (Tanita Body Fat 300 electronic scales) were measured by trained field researchers.

Smoking, drinking, and drug use were assessed by self-report using standard questions drawn from the Health Survey for England (Health of Young People in England, 95–97) [14] and Office for National Statistics (ONS) national surveys of smoking, drinking, and drug use in adolescents [15,16], with point prevalence and regularity of cigarette smoking and alcohol use assessed using check questions. A fictitious drug check-question was inserted to help check validity of responses. Health risk behaviors were defined as follows: (1) regular smoker was defined using the ONS definition for young adolescents as 1 or more cigarettes per week [15]; (2) regular alcohol use was defined as drinking alcohol at least once a fortnight (a definition of regular alcohol consumption has not been standardized in this age group); (3) having ever used illegal drugs. Lifetime drug use was used as a risk indicator, as rates of use are very low in 11–14-year-olds in the United Kingdom [17]. The number of risk behaviors engaged in by each subject was identified, and subjects were classified as being in the co-occurrence group if they reported ≥ 2 behaviors. Those who reported 1 or more health risk behavior were included in the analysis even if there was missing data on other behaviors.

Ethnicity was self-assigned using the UK Census 2001 categories. Black young people were asked to classify themselves as black African, black British, and black Caribbean. Those from South Asian ethnicities were asked to classify themselves as Asian Indian, Pakistani, or Bangladeshi. Caucasian young people were asked to classify themselves as Caucasian British or from other Caucasian groups (e.g., other European, Turkish, Kurdish). Those of mixed Caucasian and black Caribbean, Caucasian and black African, Caucasian and black, Caucasian and Asian, and mixed "other" ethnicities were categorized as "mixed" ethnicity. Due to small numbers, Chinese, Vietnamese, and other ethnicities were categorized as "other" ethnicity. Country of birth and religious group and observance were col-