



Effect of immigration background and country-of-origin contextual factors on adolescent substance use in Spain[☆]



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ABSTRACT

Purpose: The effects of adolescent- and parental-birthplace and country-of-origin contextual factors on substance use among adolescents with recent immigrant background (ARIBs) are poorly understood. We aimed to assess these effects and identify the main mediating factors in Spain.

Methods: Participants were 12,432 ARIBs (≥ 1 foreign-born parent) and 75,511 autochthonous adolescents from pooled 2006–2010 school surveys. Outcomes were prevalence of use of alcohol, tobacco, cannabis, stimulants and sedative-hypnotics. ARIBs were classified by adolescent birthplace (Spain/abroad), whether they had mixed-parents (one Spanish-born and one foreign-born), and country-of-origin characteristics. Adjusted prevalence ratios (aPRs) and percent change expressing disparities in risk were estimated using Poisson regression with robust variance.

Results: Compared to autochthonous adolescents, foreign-born ARIBs without mixed-parents showed significant aPRs < 1 for all substances, which generally approached 1 in Spanish-born ARIBs with mixed-parents. The main factors mediating ARIBs' lower risk were less frequent socialization in leisure environments and less association with peers who use such substances. ARIBs' lower risk depended more on country-of-origin characteristics and not having mixed-parents than being foreign-born. Tobacco, cannabis and stimulant use in ARIBs increased with increasing population use of these substances in the country-of-origin. ARIBs from the non-Muslim-regions had a lower risk of using alcohol and higher risk of using sedative-hypnotics than those from the Muslim-region.

Conclusions: Among ARIBs in Spain, parental transmission of norms and values could influence substance use as much as or more than exposure to the Spanish context. Future research should better assess effects of adolescent- and parental-birthplace and country-of-origin contextual factors on substance use.

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1. Introduction

Psychoactive substance use is among the main determinants of public health worldwide (WHO, 2013). Immigration has recently

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grown, especially from developing countries to wealthier ones, where studies have generally shown lower substance use and related disorders in foreign-born people (immigrants) than in the host-country-born (natives), and in people with recent immigrant background (PRIB) than in autochthonous people (Alegria et al., 2008; Almeida et al., 2012; Amundsen et al., 2005; Amundsen, 2012; Blake et al., 2001; Borges et al., 2011; Breslau et al., 2007; Broman et al., 2008; Hjern and Allebeck, 2004; Ojeda et al., 2008; Reijneveld, 1998).

Substance use generally increases toward native levels with length of stay in the host country and proficiency in the host

language (Almeida et al., 2012; Amundsen et al., 2005; Blake et al., 2001; Breslau et al., 2007; Delforterie et al., 2014; Gfroerer and Tan, 2003; Koya and Egede, 2007; Lara et al., 2005). Compared to foreign-born PRIBs (first-generation), risk generally increases in those host-country-born (second-generation), approaching that of autochthonous people (Acevedo-García et al., 2005; Almeida et al., 2012; Amundsen et al., 2005; Borges et al., 2011; Breslau et al., 2007; Hjern and Allebeck, 2004; Peña et al., 2008). Having mixed-parents (one foreign-born and one host-country-born) may also contribute to increased risk and convergence, although this seems less clear for substance-related disorders (Borges et al., 2011; Breslau et al., 2007; Leao et al., 2006). However, such disparities by immigrant background do not seem universal, their magnitude and direction being influenced by country-of-origin, host-country and PRIBs' characteristics (Alegria et al., 2008; Borges et al., 2012; Hosper et al., 2007; SAMHSA, 2011; Wahl and Eitle, 2010). For example, alcohol consumption seems much lower in Muslim PRIBs (Amundsen et al., 2005; Hjern and Allebeck, 2004; Hosper et al., 2007), and use of most substances seems higher in PRIBs from countries with higher income (Montazer and Wheaton, 2011) or higher population substance use (Agic et al., 2015; Hjern and Allebeck, 2004; Savic et al., 2014; Vega et al., 2002).

Assessing independent effects of generation, mixed-parents and country-of-origin contextual factors (predominant religion, population income and substance use level) on PRIBs' substance use is relevant to identify high-risk groups and elucidate the etiology of substance use. If the second-generation effect is stronger than that of mixed-parents or country-of-origin context, then host-country exposure may be more important in determining substance use than parental or ethnic transmission of norms and values, and vice versa. Unfortunately, many studies have not considered mixed-parents as a covariate, nor have they excluded PRIBs with mixed-parents totally or in first-generation, preventing proper identification of its independent effect. In turn, the reduced substance use conditioned by immigration-related factors may be mediated by PRIBs' individual factors in the host-country like greater parental monitoring, positive parent-child relationships, perceived risk of substance use, or lower association with peers using similar substances (Allen et al., 2008; Delforterie et al., 2014; Ojeda et al., 2008; Prado et al., 2009; Walsh et al., 2014; Warner et al., 2006).

Spanish adolescents are an interesting study population to test hypotheses about immigration effects on substance use given that, in 2006–2010, 11.0–14.8% of those aged 14–18 were foreign-born from varied origins, mainly Latin-America, North-Africa and Eastern-Europe (INE, 2014). Moreover, Spanish context is characterized by low perceived risks of using legal substances, and strong links between adolescent substance use, especially alcohol, and socialization with peers in leisure environments (Llorens et al., 2011). Here, we aim to test several hypotheses: (1) Adolescents with recent immigration background (ARIBs) in Spain have lower substance use than autochthonous adolescents (AAs). (2) Foreign birthplace is the strongest factor explaining ARIBs' lower substance use compared to foreign birthplace of both parents and country-of-origin contextual factors (Islam predominance, low population income or substance use). (3) There is complete convergence in second-generation ARIBs with or without mixed-parents for all substances, except binge drinking in Muslim ARIBs. (4) The main mediating factors of immigration effects are lower ARIBs' socialization in leisure environments and association with peers using the same substance. The objectives are to assess ARIBs' substance use compared to AAs, to estimate independent effects of immigration-related factors on ARIBs' risk, to assess ARIBs' convergence toward AAs' risk across categories of adolescent and parental birthplace, and to identify the main mediating factors of immigration effects on substance use in adolescents in Spain.

2. Material and methods

2.1. Participants

Participants were students aged 14–18 from a pooled sample of 2006, 2008 and 2010 school drug surveys (ESTUDES) (DGPNSD, 2011; Llorens et al., 2011). The eligible population represented about 80% of Spain's residents aged 14–18. Two-stage cluster sampling was used to randomly select schools and classrooms, oversampling small autonomous communities and private schools. 13.6% of schools were replaced, 10.7% of students were absent when surveyed, and 0.2% refused participation.

2.2. Variables and data collection

The self-administered questionnaire included data on socio-demographic characteristics (age, gender, adolescent and parental birthplace, province of residence, school-type, course-type, parent's educational level, parent's employment, and cohabitation with parents), family (conflict with parents or siblings, parental tolerance toward alcohol and tobacco use, parental use of alcohol and tobacco, parental monitoring of adolescent's activities, parental management of the adolescent's behavior, family bonding), school adjustment (truancy, grade repetition, expulsion from school), peers (association with peers using the same substance, socialization in leisure environment), substance use, perceived substance availability, available money for personal needs, and perceived risk of substance use. School-type was classified as public and private, and course-type as junior secondary (grades 9–10), upper secondary (grades 11–12) and vocational training. Outcomes were daily tobacco smoking, monthly binge drinking (≥ 5 standard alcoholic drinks in a 2-h interval for both genders), monthly use of cannabis and sedative-hypnotics, and annual use of stimulants (cocaine, amphetamines or ecstasy). Given that stimulant use is less widespread than the other substances studied, the annual rather than the monthly prevalence was used as outcome, in an attempt to achieve greater statistical power and stability of the indicator. Regarding immigration-related variables, adolescent and parental birth-place, each categorized as Spain or abroad, allowed classification of participants by immigration background. They were AAs if both parents were Spanish-born; otherwise, they were ARIBs, who were first-generation if foreign-born and second-generation if Spanish-born. In turn, each generation was mixed if the ARIB had mixed-parents, or non-mixed (otherwise). The birth-country of the foreign-born parent (or the mother's one if both were foreign-born) defined the ARIBs' country-of-origin, which was subsequently classified into seven regions-of-origin (Muslim-region, Rest of Africa and Asia, American South-Cone, Rest of Latin-America, Eastern Europe, Non-Eastern Europe and other; see Supplementary Table S1¹). Immigration background and region-of-origin were missing in 0.4% and 0.5% of participants, respectively. Data on country-of-origin contextual variables for 2008–2011 came from international databases: predominant religion (PRC, 2011), gross domestic product (income) per capita (World Bank, 2015), monthly prevalences of binge drinking and daily tobacco use in the population aged 15 and over (WHO, 2015), annual prevalence of cannabis use and sum of annual prevalences of cocaine, amphetamine and ecstasy use in the population aged 15–64 (UNODC, 2011), and sum of daily doses/1000 inhabitants of prescribed anxiolytics and sedative-hypnotics (INCB, 2011; see Supplementary Table S2).

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