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Comparing Risky Behaviours Among Teenagers With Native or Immigrant Parents in Italy

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Abstract

Investigating adolescent risky behaviours from different cultural backgrounds helps understand societal differences. This study assesses the correlation between the cultural background and risky behaviours among adolescents in Italy, considering the migrant status and the geographical/cultural area of the maternal birthplace. Ordinal-logistic regressions were employed to analyse alcohol consumption, smoking cigarettes and binge drinking in an Italian nationally representative sample (58,976 obs.) from the HBSC 2018 survey. Results indicate that 1.5- and second-generation immigrants are less likely than "native" Italians to drink alcohol/smoke cigarettes. In binge drinking, only second-generation migrants are less at risk. No significant difference was found between the 1.5- and the second-generation. We see several differences for geographical/cultural backgrounds compared to the reference category Catholic-Europe. These findings show that certain groups of immigrant adolescents are at less risk than natives. Policymakers should consider how patterns of adolescent risky behaviours vary by immigrant background when designing prevention programs.

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Introduction

Although migration is a relatively recent phenomenon in Italy, at the beginning of 2024, more than 5 million migrants regularly lived there (ISTAT, 2024a). Among the 7,950,000 students attending the Italian school system, 895,000 students did not have Italian citizenship in the school year 2022/2023 (MIUR, 2023). The group included foreign-born students who arrived in Italy during childhood and students born in Italy to foreign parents. According to data from the resident register, 1.4 million students had at least one parent born abroad in 2019 (Conti & Prati, 2020).

This study focuses on risky behaviours in adolescents, as their onset during adolescence is a crucial marker of risk behaviours in adulthood (Degenhardt et al., 2016). Even if substance use and experimentation are considered normal for teenagers, early onset of alcohol, tobacco and marijuana consumption are linked to the development of problematic substance use (Nelson et al., 2015). Usually, behaviours such as alcohol consumption and smoking cigarettes are associated with drug abuse, gambling, and high-risk sexual behaviours later in life (American Psychological Association, 2022). Moreover, adults who assume one risky behaviour are more likely to engage in other risky behaviours (Meader et al., 2016). In this article, we will consider three risky behaviours to compare adolescents with and without a migrant background: tobacco smoking, monthly alcohol consumption, and binge drinking (the definition of binge drinking is the consumption of a specific number of drinks, usually five or more in a row for men on one occasion (Kuntsche et al., 2017)).

Literature and Hypotheses

Previous research connected risky behaviours and the background of immigrants through the healthy immigrant paradox. This paradox observes that even if first-generation immigrants are considered the least assimilated, the poorest, and the least educated compared to the overall population, they have better health, conduct, and academic attainment than native-born people in the country (Drouhot & Nee, 2019; García et al., 2012). In this theory, generational status is an approximation measure of the assimilation and acculturation level, considering that later generations of immigrants spend more time in the destination country than the first (Berry, 2003; Brandon, 2008). The healthy immigrant paradox was first developed in the United States of America by observing Latinos and, in particular, Mexican immigrants (Jasso

et al., 2004). However, in recent years, more studies have found evidence of the healthy immigrant paradox in the European context (Cristini et al., 2015; Dimitrova et al., 2016; Van Geel & Vedder, 2010).

This paradox is studied in adolescents, as the teenage years represent a complex and challenging period of life. In this case, the hypothesis is that newcomer children and adolescents exhibit better health respect than their native peers and those born in the country to immigrant parents (Marks et al., 2014).

The literature often uses measures of health risk behaviours such as substance use or risky sexual behaviours to measure the immigrant paradox and general health during adolescence (Bui, 2013; García et al., 2012; Laghi et al., 2021; Walsh et al., 2010). As the healthy immigrant paradox suggests, immigrant adolescents belonging to generations beyond the first are considered at a higher risk for engaging in risky behaviours due to their increased level of assimilation and acculturation (Chun & Mobley, 2014).

It is usual for adolescents to experiment with substance use, however, research has connected early adolescent risky behaviours with substance dependence later in life (Gray & Squeglia, 2018; Jordan & Andersen, 2017). Several studies investigated the connection between substance use and the background of immigrants. For example, in the U.S.A., Bui (2013) found evidence for the immigrant paradox in substance use among adolescents. However, she emphasised that the degree of integration and acculturation to which the adolescent was exposed mitigated the positive effect. Other authors have found similar results (Chun & Mobley, 2014; Martinez et al., 2017; Salas-Wright et al., 2016).

In Europe, mixed results have been found for the connection between risky behaviours and the roots of migrants. A Swedish study conducted by Svensson and Hagquist (2010) showed that second-generation immigrants were more similar to native Swedish adolescents than were first-generation immigrants, as stated in the paradox. In contrast, the same study found that all immigrants had a higher risk of using drugs than native Swedish individuals did, in contrast with the hypothesis of the immigrant paradox. Additionally, immigrants from non-European countries were less likely to practice binge drinking than were those from "native" Swedes. In contrast, second-generation immigrants from other Nordic countries were more likely to do so.

In the Netherlands, a study by Monshouwer et al. (2007) reported that students at schools with a high proportion of ethnic minorities, were less likely to binge drink. The authors suggested that this could be because minorities are often immigrants with a Muslim background, and these groups have much lower alcohol use.

A systematic review of 2021 analysed 15 articles on risky behaviours among immigrant adolescents compared to those of the general population (van Dorp et al., 2021). It showed that, unanimously, immigrants exhibit lower

alcohol use than their "native" peers, while the results for tobacco and illegal drugs were discordant. Instead, in the same study, the differences in substance use between generations were different, which was also due to the ethnic group.

Finally, a study comparing the risky behaviours of immigrant adolescents focusing on several European countries using HBSC data collected in 2006 found no common patterns across the countries (Molcho et al., 2010).

In Italy, the literature covering risky behaviours for adolescents with immigrant backgrounds is very scarce. To our knowledge, only two published studies have addressed this topic. First, a sample of 2533 adolescents attending high schools in the northern part of Italy was analysed (Cristini et al., 2015). Migrants were less likely to consume some substances, such as pharmaceutical drugs and cannabis, consistent with the migrant paradox theory. However, this study was limited by its small sample size and location in northern Italy. Another study, conducted on 472 adolescents recruited from 11th- and 12th-grade classes, found that alcohol consumption was lower among second-generation immigrants than among "native" adolescents (Laghi et al., 2021).

Specifically, our work aims to study risky behaviours among adolescents living in Italy, distinguishing between "native" Italians and those with a migrant background. According to the Italian National Institute of Statistics (ISTAT), 23.8% of the male Italian population smokes, while 15.6% of the females smoke (ISTAT, 2023). If we focused only on adolescents, the Global Youth Tobacco Survey showed that more than one in five students aged between 13 and 15 years was a daily smoker. Interestingly, the share of girls who smoke is higher than that of male students (EpiCentro, 2019).

In particular, this study is going to analyse risky behaviours for the different immigrant generations, taking into account the maternal cultural background based on the country of birth of the mother. We use the maternal country of origin as a proxy of cultural background because, in Italian society, the mother plays the central role in childrearing and childcaring; moreover, the same role has also been observed in Italian immigrants (Rania et al., 2018).

In the present study, we consider other factors, such as family socio-economic status and family support. Several international studies have confirmed that during adolescence, lower socio-economic status is associated with cigarette and cannabis smoking (Mathur et al., 2013), with engagement in multiple risky behaviours (Kipping et al., 2015) and, through a meta-analysis with engagement in cannabis and alcohol consumption (Lemstra et al., 2008). Moreover, to prevent risky behaviours during adolescence, several studies have emphasised the importance of family involvement and support (Rusby et al., 2018; Tharp & Noonan, 2012).

The Present Study

This study aims to investigate the relationship between migrant backgrounds and risky health behaviour (alcohol consumption, smoking cigarettes and binge drinking) among adolescents in Italy. In particular, we formulate two research questions:

RQ1) What are the differences in risky behaviours among "native" Italians, 1.5-generation migrants, and second-generation migrants?
RQ2) Does the maternal cultural background affect the adolescents' engagement in risky behaviours?

Our study is relevant because it is necessary to investigate behavioural differences among adolescents from diverse cultural backgrounds. Research on this topic is crucial for reducing social inequalities in health and increasing awareness of the possible positive influences that immigrants can have on our society.

We construct two hypotheses based on the previous literature:

H1) 1.5- and second-generation migrant students engage less in risky behaviours than "native" Italian adolescents;
H2) Adolescents who have a migrant background but are born in Italy (second-generation immigrants) are more subject to risky behaviours than those who are born in another country (1.5-generation immigrants), as stated by the healthy immigrant paradox theory.

Materials and Methods

Data: Description of the Survey and the Sample

We used data from the Italian Health Behaviours in School-Age Children (HBSC) survey of 2018. The HBSC is a cross-sectional international study led in collaboration with the World Health Organization that aims to explore the factors that influence the health and well-being of adolescents. The HBSC survey is conducted every four years in forty countries (For details, see https://www.hbsc.org) (Lazzeri et al., 2013; Nardone et al., 2020). The questionnaire was self-administered during school hours by students in the first and third classes of Italian middle school and the second class of Italian high school (11, 13 and 15 years old).

The international protocol recommends deleting the observations of adolescents of different ages from the ones that are proper for attending class, and we could not access these observations. However, we did not drop the individuals who were 13 or 15 but not in the correct grade because, in Italy, it

is common for adolescents with immigrant backgrounds to join a class that is more similar to their preparation level, not always considering the age of the adolescent.

The survey is part of the Italian adolescent monitoring health system, and the sample was representative of the Italian adolescents enrolled in the school system at the time. Nonetheless, it is not representative of the migrant adolescent population in Italy. Moreover, the HBSC Italian survey does not include teenagers who drop out of school. The problem is relevant in Italy, with more than 10% of young adults between 18-24 years old in 2023 dropping out of the education system without a diploma (ISTAT, 2024b). Several studies highlighted that immigrant adolescents are more likely to drop out of school in Italy (Mussino & Strozza, 2012; Strozza, 2015). The dropouts could have a higher risk of assuming risky behaviours due to their difficult situation. However, with the HBSC survey, studying this group of adolescents is not possible.

In the HBSC Italian survey 2018, 58,976 Italian adolescents answered the questionnaire. However, 444 students did not provide accurate information about either their own birthplace or the birthplace of their parents. Therefore, the analysis is based on 58,572 observations. The sample included 29,595 boys and 28,977 girls (the survey did not offer any other gender alternatives). The mean age was 12.98 (with a standard deviation of 1.61). The 11-year-olds were the 33.1% of the sample, the 13-year-olds were the 34.8%, and the 15-year-olds were the 32.1%. A total of 48,178 respondents had two Italian-born parents, 3293 respondents were foreign-born with two foreign-born parents, and 1890 students were born in Italy with both parents born outside of Italy.

Individual Level Measurements

In Table 1, we present the variables considered for the analysis. To measure risky behaviours, we used three dependent variables: one for smoking cigarettes in the previous month, one for drinking alcohol in the last month and one for binge drinking in the previous year.

Binge Drinking Last Year. We used the variable: "Think about the last 12 months: has it ever occurred to you to consume five or more drinks on one occasion?". The possible answers were "never," "once," and "more than once".

Smoking Cigarettes During the Last Month. We measured smoking habits using the question: "How many days did you smoke at least one cigarette in the last month?". The answers were categorised into seven categories: "never", "1–2 days", "3–5 days", "6–9 days", "10–19 days", "20–29 days", and "30 days

Table 1. Descriptive Statistics of the Italian HBSC Sample 2018 by Sex (Percentages).

	Male %	Female %		Male %	Female %
	n = 29,595	*n* = 28,977		*n* = 29,595	*n* = 28,977
Smoking cigarettes in the last month			**Migrant status**		
Never	88.8	86.7	At least one Italian parent	91.3	91.0
1–9 days	5.9	7.4	1.5-Generation migrant	3.2	3.2
10–19 days	1.1	1.5	Second-generation migrant	5.5	5.8
20–29 days	1.1	1.4	**Area for the maternal birthplace**		
30 days or more	3.1	3.0	Catholic Europe	86.9	86.8
Alcohol consumption in the last month			African Islamic	5.1	4.9
Never	70.3	77.7	Other Asia	0.9	0.8
1–9 days	26.2	20.7	Protestant Europe	2.0	2.1
10–19 days	1.8	0.9	Latin America	1.8	1.9
20–29 days	0.6	0.3	Orthodox Europe	3.3	3.5
30 days or more	1.1	0.4	**FAS III**[a]		
Binge drinking in the last year			Low	24.8	27.0
Never	74.7	80.5	Medium	48.9	49.2
Once	13.0	10.3	High	26.3	23.8
More than once	12.3	9.2	**Perceived family support**		
Age			Low	4.1	6.7
11 years old	33.3	32.8	Medium	12.3	14.1
13 years old	35.1	34.6	High	83.6	79.2
15 years old	31.6	32.6	**Dialogue with parents**		
Italian geographical repartition			Not talking with parents	0.5	0.3
Northern	47.4	48.2	Low	3.3	4.8
Central	17.8	17.6	Medium	46.1	50.6
Southern	34.8	34.2	High	50.1	44.3

[a]Socio-economic status indicator.
Source: Authors elaboration on HBSC survey.

or more". We grouped the categories from 1–2 to 6–9 days in 1–9 days. The final categorisation has five levels.

Alcohol Consumption During the Last Month. We considered the question: "How many days did you drink alcohol in the last month?". We did the same modification as for the smoking cigarettes variables, and the final categories were: "never", "1–9 days", "10–19 days", "20–29 days", and "30 days or more".

We considered the different characteristics of the adolescents and their families as independent variables.

Italian Geographical Repartition. We knew the Italian region where the students were attending classes due to the general school information. We use this information to obtain classic Northern, Central and Southern geographical repartitioning details from Italy.

Area for Maternal Birthplace. We derived the birthplace of the mother from the question: "Where was your mother born?". Subsequently, we used the Inglehart-Welzel Cultural Map, represented in Figure 1, to categorise the different countries according to geographical subdivisions and cultural proximity (The Inglehart-Welzel World Cultural Map - World Values Survey 7, 2023). The map is created for every wave of the World Values Survey. Its goal is to highlight cultural change and the persistence of distinctive cultural traditions through time. The map does not depict all the countries mentioned in the survey. We considered these countries in conjunction with the geographical areas. The map includes African-Islamic, Catholic Europe,

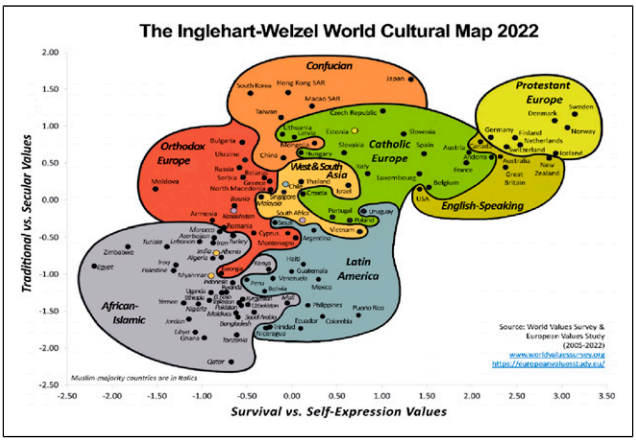

Figure 1. The inglehart-welzel cultural map 2022.

Confucian, English-speaking, Latin America, Orthodox Europe, Protestant Europe, and West and South Asia. The Catholic Europe category also includes Italians. Due to the low number of respondents in some groups, we decided to aggregate the English-speaking countries to Protestant Europe (hereafter referred to as Protestant Europe) and the Confucian to West & South Asia (hereafter referred to as Other Asia).

The Migrant Status. This variable was constructed using the questions: "Where were you born?" and "Where was your mother/father born?". We divided the answers into three categories: "At least one parent born in Italy" was considered as "native" Italian (thus including respondents without a migrant background). For the immigrant, we considered "1.5-generation migrant" when both the parents and the child were born outside of Italy, and "second-generation migrant" when both the parents were born abroad, but the child was born in Italy. There was no information about the time spent in Italy by those born abroad. Due to a lack of information about their time spent outside of Italy, those who were born abroad but had Italian-born parents were not considered migrants. Using the Stata function "collin", we tested for multicollinearity between the two variables: migrant status and area of maternal birthplace. Because none of the variable categories matched perfectly, we do not have multicollinearity.

Finally, we included control variables assessing socio-economic status, perceived family support and dialogue with parents.

Family Affluence Scale (FAS III). We assessed socio-economic status using the FAS III indicator since children do not provide reliable information about their parental education level (Hartley et al., 2016). The FAS III indicator is constructed from six questions about the daily life of the adolescent's family: "Does your family own a car, van or truck?", "Do you have your own bedroom for yourself?", "How many computers do your family own (including laptops and tablets, not including game consoles and smartphones)?", "How many bathrooms (room with a bath/shower or both) are in your home?", "Does your family have a dishwasher at home?", "How many times did you and your family travel out of Italy for a holiday/vacation last year?". We used the FASIII calculated by the Italian Health Institute, which has three categories: Low, Medium, and High.

Perceived Family Support. A relevant element in studying risky behaviours is the family environment in which adolescents live. We used the indicator calucated with the Multidimensional Scale of Perceived Social Support (MSPSS), a scale constructed to measure the support by friends and family (Zimet et al., 1988). The Perceived Family Support is constructed by four affirmations focusing on the family environment: "My family really tries to

help me", "I get the emotional help and support I need from my family", "I can talk about my problems with my family", "My family is willing to help me make decisions". The students rate how much they agree/disagree on a seven-point Likert scale. We divided the score into three categories: low, medium, and high.

Dialogue With Parents. We also included the variables that measured the dialogue with the parents. We considered the question: "How easy is it to talk with your mother/father about the things that preoccupied you?". We had the answers for both mother and father, and we decided to consider the higher score between the two. The students could indicate if they didn't have the mother/ father or never see that parent. Since we could not make assumptions about this situation, we considered only the dialogue with the other parent. If the students had no relationship with both parents, it was categorised as "not talking with parents". The categories used are not talking with parents, low, medium, and high.

In Table 2, the variables are reported by migration status. We also include the $\chi 2$ p-values for the dependence test. Except for sex, all the variables have p-values less than 0.001, indicating significant dependency. The 1.5 generation presents similar results to the natives in smoking cigarettes and binge drinking. For alcohol consumption, there is a higher percentage of those who never drink than the natives. The second-generation immigrants report a lower percentage of adolescents who practised all three risky behaviours than the 1.5 generation and the natives. Looking at maternal birthplace, the main groups of the 1.5 and second generations are those with mothers from the African Islamic area and Orthodox Europe, although the percentages differ. It is evident that 1.5- and second-generation immigrants tend to have higher percentages of low- and medium-level socio-economic status, measured with the indicator FAS III, than those with at least one Italian parent. There are small differences between natives and immigrants in the perceived family support. Migrants have slightly higher values for dialogue with their parents.

Methods

As we showed in the previous subsection, smoking cigarettes during the last month and alcohol consumption in the last month were analysed using five ordinal categories, while binge drinking in recent years was analysed using three ordinal categories. For the analysis, we wanted to preserve the ordinal structure of the dependent variables and avoid losing information using binomial variables. Thus, we implemented a series of ordered logistic regressions with the three risk behaviours as dependent variables.

For the statistical models, we used a stepwise regression approach, employing only the demographic variables in the first model (sex and age) and

Table 2. Descriptive Statistics by the Migration Status (Percentages and χ^2 *p*-values).

	Migration status			
	At least one Italian parent	1.5-Generation migrant	Second-generation migrant	
	53,564	1915	3381	
N	%	%	%	χ^2 *p*-value
Sex				0.34
Male	50.6	50.8	49.3	
Female	49.4	49.2	50.7	
Smoking cigarettes during the last month				<0.001
Never	87.5	88.3	92.2	
1–9 days	6.9	5.6	4.4	
10–19 days	1.3	1.5	0.8	
20–29 days	1.3	1.0	0.7	
30 days or more	3.1	3.7	2.0	
Drinking alcohol during the last month				<0.001
Never	72.9	80.9	86.2	
1–9 days	24.4	15.8	12.4	
10–19 days	1.4	1.1	0.6	
20–29 days	0.5	0.8	0.2	
30 days or more	0.7	1.4	0.5	
Binge drinking during last year				<0.001
Never	77.2	78.5	83.8	
Once	11.9	11.4	8.8	
More than once	11.0	10.2	7.4	
Age				<0.001
11 years old	32.6	27.9	42.8	
13 years old	34.8	37.5	34.5	
15 years old	32.6	34.6	22.7	
Italian geographical repartition				<0.001
Northern	46.2	61.5	65.1	
Central	17.3	19.8	23.3	
Southern	36.5	18.7	11.6	

(continued)

Table 2. (continued)

	Migration status			
	At least one Italian parent	1.5-Generation migrant	Second-generation migrant	
	53,564	1915	3381	
N	%	%	%	χ^2 *p*-value
Area for the maternal birthplace				<0.001
African Islamic	0.6	43.2	55.3	
Catholic Europe	95.0	2.1	3.1	
Other Asia	0.2	5.0	9.0	
Protestant Europe	2.1	1.2	3.1	
Latin America	1.0	13.2	9.0	
Orthodox Europe	1.2	35.3	20.5	
FAS III[a]				<0.001
Low	24.4	46.0	40.4	
Medium	49.6	39.0	44.3	
High	26.0	14.0	15.3	
Perceived family support				<0.001
Low	5.0	10.6	8.7	
Medium	12.8	17.1	16.8	
High	82.2	72.3	74.5	
Dialogue with parents				<0.001
Not talking with parents	0.3	1.4	0.5	
Low	3.9	5.8	5.1	
Medium	48.7	44.5	44.8	
High	47.0	48.3	49.6	

[a]Socio-economic status indicator.
Source: Authors elaboration on HBSC survey.

adding all the variables that reflected the background of the immigrant in the second and the third models (migrant status and Inglehart-Welzel Cultural Map for the maternal birthplace). In the last three models, we added one at a time: the socio-economic indicator, the perceived family support and the dialogue with the parents.

We used R to clean the variable data. We used Stata 17 to calculate the ordinal logistic models for the dependent categorical variables.

Results

The results are presented in Tables 3–5.

Table 3 reports the ordinal logistic regressions for smoking cigarettes during the last month. According to the sex variable, girls are more at risk of smoking than boys. For the age variable, 11-year-olds are at lower risk than 13-year-olds, while 15-year-olds are more at risk than 13-year-olds. These odds ratios indicate that the risk of smoking increases with age. For the Italian macroregion, adolescents attending Central and Southern Italy schools are more likely to smoke in the last month. Looking at the migration status variable, 1.5-generation migrants are less at risk of smoking than "native" Italians for models 1.6 and 1.7, while second-generation migrants are less at risk in all models. Considering the IW map areas for maternal birthplaces, adolescents with mothers born in the category Other Asia are less significantly at risk of smoking than those with mothers born in Italy. Having a mother born in Orthodox Europe or Latin America represents a risk factor for smoking cigarettes. When observing the socio-economic status, only the high-level is significantly more at risk than the low-level, indicating more risk of smoking for those who can afford it economically. The variables that measure closeness to the family are significant. The odds ratios indicate that medium and high levels of perceived family support and dialogue with parents suggest a decreased risk of smoking cigarettes during adolescence. While the students who do not talk with their parents have a higher risk of smoking in the last month.

In the regressions, there are slight changes in the odds ratios and some changes in the significance. In particular, the odds ratio of the 1.5 generation of the migration status is not significant until the 1.5 model, but it becomes significant in the 1.6 and 1.7 models, which include the family relationship variables.

Table 4 shows the results of the ordinal logistic regressions for alcohol consumption during the last month. As in the models for smoking cigarettes, sex is significant for this response variable but in the other direction. Indeed, girls are less at risk of consuming alcohol. For the age category, there is a similar effect to the models in Table 3: 11-year-olds are less at risk of having consumed alcohol in the last month than 13-year-olds, while 15-year-olds are more at risk than 13-year-olds. Central Italian geographical repartition shows a lower risk of drinking alcohol over the previous month except for the last model, where the coefficient is not significant, while Southern Italian geographical repartition adolescents are more at risk. The migration status is significant and indicates less risk for the 1.5 and the second generations than the natives. For areas of the maternal birthplace, the levels of African Islamic, Other Asia and Latin America indicate a lower risk of alcohol consumption in the last month. The socio-economic indicator FAS III is significant for both medium- and high-level, showing a higher risk for these two categories of

Table 3. Odds Ratio for Ordinal Logistic Regressions of Smoking Cigarettes in the Last Month (Obs. 55224).

	(1.1)	(1.2)	(1.3)	(1.4)	(1.5)	(1.6)	(1.7)
Female	1.21***	1.21***	1.21***	1.21***	1.21***	1.14***	1.14***
Age (Ref. 13 years old)							
11 years old	0.13***	0.13***	0.13***	0.13***	0.13***	0.14***	0.14***
15 years old	4.86***	4.86***	4.85***	4.87***	4.89***	4.78***	4.77***
Italian geographical repartition (Ref. Northern)							
Central		1.09*	1.09*	1.09*	1.10*	1.12**	1.12**
Southern		1.25***	1.24***	1.24***	1.26***	1.34***	1.35***
Migration status (Ref. Native Italian)							
1.5-generation migrant			0.91	0.80	0.81	0.76*	0.77*
Second-generation migrant			0.80**	0.79*	0.80*	0.78*	0.79*
Area for the maternal birthplace (Ref. Catholic Europe)							
African Islamic				0.90	0.91	0.85	0.83
Other Asia				0.59*	0.60*	0.46***	0.45***
Protestant Europe				1.06	1.05	1.05	1.04
Latin America				1.41**	1.42**	1.29*	1.28*
Orthodox Europe				1.40**	1.41***	1.35**	1.34**
FAS III (Ref. Low)							
Medium					0.96	1.0	1.0
High					1.16***	1.23***	1.24***
Perceived family support (Ref. Low)							
Medium						0.53***	0.56***
High						0.28***	0.31***

(continued)

Table 3. (continued)

	(1.1)	(1.2)	(1.3)	(1.4)	(1.5)	(1.6)	(1.7)
Dialogue with the parents (Ref. Low)							
Not talking with parents							1.54*
Medium							0.78***
High							0.74***
AIC	49226.9	49177.9	49170.8	49145.0	49118.6	48290.2	48261.8
BIC	49289.3	49258.1	49268.9	49287.7	49279.1	48468.6	48467.0

*$p < .05$, **$p < .01$, ***$p < .001$.
Source: Authors elaboration on HBSC survey.

Table 4. Odds Ratio for Ordinal Logistic Regressions of Consuming Alcohol in the Last Month (Obs. 54949).

	(1.1)	(1.2)	(1.3)	(1.4)	(1.5)	(1.6)	(1.7)
Female	0.60***	0.60***	0.60***	0.60***	0.60***	0.57***	0.57***
Age (Ref. 13 years old)							
11 years old	0.27***	0.27***	0.27***	0.27***	0.27***	0.28***	0.29***
15 years old	3.84***	3.85***	3.84***	3.84***	3.88***	3.80***	3.74***
Italian geographical repartition (Ref. Northern)							
Central		0.91**	0.91**	0.91**	0.93*	0.94*	0.95
Southern		1.15***	1.11***	1.10***	1.16***	1.20***	1.22***
Migration status (Ref. Native Italian)							
1.5-generation migrant			0.60***	0.74**	0.78**	0.75**	0.76**
Second-generation migrant			0.51***	0.70***	0.72***	0.71***	0.71***
Area for the maternal birthplace (Ref. Catholic Europe)							
African Islamic				0.58***	0.60***	0.58***	0.58***
Other Asia				0.74	0.77	0.65**	0.64**
Protestant Europe				1.05	1.03	1.03	1.03
Latin America				0.82*	0.83*	0.78**	0.78**
Orthodox Europe				1.06	1.06	1.04	1.04
FAS III (Ref. Low)							
Medium					1.15***	1.18***	1.18***
High					1.41***	1.47***	1.48***
Perceived family support (Ref. Low)							
Medium						0.70***	0.72***
High						0.43***	0.47***

(continued)

Table 4. (continued)

	(1.1)	(1.2)	(1.3)	(1.4)	(1.5)	(1.6)	(1.7)
Dialogue with the parents (Ref. Low)							
Not talking with parents							1.44*
Medium							0.92
High							0.74***
AIC	64905.5	64843.3	64646.6	64604.3	64476.2	63891.5	63800.6
BIC	64967.9	64923.5	64744.7	64746.9	64636.7	64069.8	64005.6

*$p < .05$, **$p < .01$, ***$p < .001$.
Source: Authors elaboration on HBSC survey.

Table 5. Odds Ratio for Ordinal Logistic Regressions of Binge Drinking in the Last Year (obs. 55299).

	(1.1)	(1.2)	(1.3)	(1.4)	(1.5)	(1.6)	(1.7)
Female	0.67***	0.67***	0.67***	0.67***	0.67***	0.64***	0.64***
Age (Ref. 13 years old)							
11 years old	0.41***	0.42***	0.42***	0.42***	0.42***	0.43***	0.44***
15 years old	3.74***	3.75***	3.75***	3.76***	3.79***	3.71***	3.69***
Italian geographical repartition (Ref. Northern)							
Central		0.91**	0.91**	0.91**	0.92*	0.94*	0.94*
Southern		1.29***	1.28***	1.28***	1.34***	1.40***	1.41***
Migration status (Ref. Native Italian)							
1.5-generation migrant			0.94	0.84*	0.88	0.84	0.84
Second-generation migrant			0.85**	0.82*	0.85*	0.83*	0.84*
Area for the maternal birthplace (Ref. Catholic Europe)							
African Islamic				0.87	0.89	0.86	0.85
Other Asia				1.22	1.26	1.05	1.04
Protestant Europe				1.02	1.01	1.01	1.00
Latin America				1.35***	1.37***	1.29**	1.28**
Orthodox Europe				1.33***	1.33***	1.29**	1.29**
FAS III (Ref. Low)							
Medium					1.08**	1.11***	1.11***
High					1.37***	1.44***	1.44***
Perceived family support (Ref. Low)							
Medium						0.67***	0.69***
High						0.39***	0.42***

(continued)

Table 5. (continued)

	(1.1)	(1.2)	(1.3)	(1.4)	(1.5)	(1.6)	(1.7)
Dialogue with the parents (Ref. Low)							
Not talking with parents							1.70**
Medium							0.88*
High							0.82***
AIC	68655.5	68489.9	68482.8	68451.5	68335.6	67626	67597.7
BIC	68700.1	68552.3	68563.0	68576.4	68478.3	67786.5	67785.0

*$p < .05$, **$p < .01$, ***$p < .001$.
Source: Authors elaboration on HBSC survey.

alcohol consumption than for low-level alcohol consumption. The perceived family support variable is significant for medium- and high-level, indicating less risk for these two than for the low level. For dialogue with parents, the high level is significant and less prone to this behaviour, while those who do not talk with parents have a higher risk of drinking alcohol in the last month.

In these regressions, odds ratios do not particularly change among the various models. What does change is their significance. For the variable area for maternal birthplace, the Other Asia and Latin America categories are significant for the 1.4 model and become not significant for the 1.5 model, which additionally includes the socio-economic indicator; however, they are again significant for models 1.6 and 1.7 when the variables for family relations are introduced.

Table 5 presents the regression models for binge drinking in the last year. As in the models for alcohol consumption, girls have a lower risk of binge drinking than boys. Moreover, in these models, similar to the previous two behaviours, age is associated with a progressive increase in the risk of practising risky behaviours. 11-year-old adolescents have a lower risk of binge drinking, while teenagers aged fifteen are more at risk than 13-year-olds. Central Italian repartition has a lower risk, but the Southern macroregion has a higher risk. The second generation reports significantly lower risk than the natives. The 1.5 generation is significant only for the 1.2 model. For areas of maternal birthplace, African Islamic is less at risk for binge drinking in the last year, while both Latin America and Orthodox Europe represent a higher risk for risky behaviour than those with a mother born in Italy. The socio-economic medium- and high-level indicate a higher risk of binge drinking than the low-level. Perceived Family Support levels of medium and high are protective factors against other risky behaviours, and levels of medium and high dialogue with parents are less at risk than low, such as alcohol consumption. Instead, those who do not talk with parents have a higher risk of binge drinking.

Also, the odds ratios for these regressions do not particularly change among the various models, but the significance changes. The 1.5 generation is only significant in model 1.4 and is not significant in model 1.5 when the socio-economic status is added and it is not significant for the other models. The second generation, instead, is significant in every model.

Robustness Check

Several other models were computed to verify the robustness of the results. In particular, the models were implemented using logistic regression for all three risky behaviours (Table A1 to Table A3), considering only the ages 13 and 15 (Table A4 to Table A6). These models are presented in Appendix A. The results were similar to those presented in the previous section.

Discussion and Conclusions

This study concentrates on adolescence and investigates the correlation between risky behaviours and cultural background. Specifically, we focused on the migrant status and cultural/ geographical maternal birthplace areas and their relationship with the risky behaviours of smoking cigarettes, alcohol consumption and binge drinking.

Our first research question was to investigate if there are differences between "native" Italians, 1.5-generation and second-generation migrants in assuming risky behaviours (RQ1). Our results show that 1.5- and second-generation migrants are more protected from monthly alcohol consumption and smoking cigarettes, as suggested in H1. Comparable results for the alcohol consumption were found in the study of Laghi and colleagues (2021), which observed that second-generation immigrants were less at risk of alcohol consumption than native Italians. Furthermore, the final considerations of the literature review of Van Dorp et al. (2021) indicated less risk for immigrant adolescents to assume alcohol-related behaviours, suggesting that the immigrant paradox theory could explain it. Instead, the Van Dorp et al. review found no precise pattern among the papers analysed for tobacco consumption. For monthly yearly binge drinking, the second-generation migrants are more protected than the "native" Italians, while the 1.5-generation coefficient is not significant for almost all models. We can say that this result is partially coherent with H1. We must stress that we chose to include individuals with only one Italian parent in the category of native Italians. Our decision is justified by the evidence in the literature showing that the behaviour of children from mixed couples tends to resemble that of native children. Therefore, if they were grouped with the children of immigrants, they might have narrowed the gap between the latter group and native children.

A lower risk of engaging in these behaviours for those with a migratory background could support the immigrant paradox theory, especially since we controlled the models for sex, socio-economic status and family relationships. These results highlight that adolescents with immigrant backgrounds have a healthier attitude toward risky behaviours than native peers, and it should be taken into consideration when planning policies for the migrant communities as something to preserve.

There is no significant difference between the two generational levels of migrants; therefore, we refuse H2. This result could also be related to the fact that the 1.5-generation adolescents in this survey arrived in Italy during childhood or teenage years and, therefore, there are fewer differences between the 1.5 and second generations. Unfortunately, we do not have the year of the arrival in Italy of the 1.5 generation.

Overall, the results of our study are partially coherent with the healthy immigrant paradox theory. As the paradox states, 1.5-generation migrants are

less at risk than "native" Italians for smoking cigarettes and alcohol consumption, but contrary to the hypothesis, the 1.5 generation does not show fewer risk behaviours than the second, and the second generation is instead also protected from binge drinking. Our findings are consistent with the review by van Dorp et al. (2021), who found that generational differences were not observed in all the studies analysed and were influenced by ethnic groups.

Our second research question was whether the maternal cultural background affects if adolescents engage in risky behaviours (RQ2). The maternal cultural/geographical background, assessed through the Inglehart-Welzel Cultural Map 2022, is associated with risky behaviours. More specifically, our findings show that adolescents with mothers coming from the area of Other Asia are less at risk of both monthly smoking cigarettes and monthly alcohol consumption. This outcome is consistent with the research of Abebe and colleagues (2015) for Norway and Rodham et al. (2005) for England, which observed that adolescents from Asian countries were less likely to engage in risky behaviours. The category of children with mothers from the African Islamic area is significantly less at risk of monthly alcohol consumption, coherently with the idea of Monshouwer et al. (2007) and the results of Sarasa-Renedo et al. (2015). These findings could be due to a cultural component, as the Quran forbids the consumption of alcohol. The category of students that have mothers coming from Orthodox Europe underlines a higher risk of smoking cigarettes and binge drinking. In Eastern Europe, alcohol consumption is higher than in Italy (WHO Regional Office for Europe, 2019). The category for adolescents with mothers from the Latin America area is the only level that was significant in all the behaviours: it increases the risk of monthly smoking cigarettes and yearly binge drinking but decreases the risk of alcohol consumption in the last month. These results are not consistent with a Spanish study that found that adolescents from Latin America were less at risk of using substances (Marsiglia et al., 2008). However, there are not many studies that focus on substance use and the Latino background origins in Europe. Lastly, the Protestant Europe maternal origin area level was not significant for any model.

Overall, our results show that some significant factors in our models are consistently associated with different risky behaviours in the same way. For example, as stated by other research, we found that smoking cigarettes in Italy is more common among girls than boys, but the opposite is true for alcohol consumption (EpiCentro, 2019; ESPAD Group, 2020). Medium and high levels of family-perceived support and the possibility to talk with parents are protective factors over low levels. The results also show the importance of better support from the family and the fundamental protective factor of having the possibility to speak with parents (Hair et al., 2008; Tilson et al., 2004).

To our knowledge, the only studies of risky behaviours in adolescents in Italy are the work by Laghi et al. (2021), which focuses on alcohol abuse, and an earlier article on cannabis and drug consumption by Cristini and colleagues (2015). Our work is the first study that underlines migrant background as a protective factor for both smoking cigarettes and drinking alcohol in the previous month. Moreover, the previous literature did not include the role of culture in teenagers' countries of origin in the analysis.

However, there are some limitations due to the data availability and study design. Data were not representative of a sample of migrant adolescents in Italy but of all the adolescents who were enrolled in the Italian school system at the time of the survey. The questionnaire did not include a variable that assessed the honesty of the adolescents or a measure that evaluated if the desirability of the peers influenced the answers. Regarding the information, the survey does not provide information on the religion of the adolescent or their parents. We used the Inglehart-Welzel Cultural Map as a proxy, but it does not include all the countries considered by the survey. Another limitation is the presence of both variables, the migrant status and the maternal birthplace, in the models, leading to mismatches. Those who had a mother born in Italy but not the father were considered Italian in the first and Catholic Europe in the second, while those who had a father born in Italy but a mother born abroad were considered for the migrant status "Italian" and the birthplace of the mother, the area of the mother. It was not possible to include both the birthplace of the parents in the analysis because of the high correlation, and adding another indicator for the birthplace of the father would have created high collinearity. At the same time, to delete the observations with an Italian-born mother and a foreign father would have meant dropping some information. However, these mismatches avoid multicollinearity in the models.

This study shows that the prevention policy should not only be based on the socio-demographic characteristics of the adolescents but consider their cultural background. Over the years, these adolescents with an immigrant background will grow up and probably will be more integrated. They should pay attention to the cultural background when designing new prevention programs and highlight it not as a diversity element but as an adolescent enrichment. Also, it is essential to consider these results to reduce social inequality in health. How this can be recognised in public health planning should be further investigated.

In conclusion, the results of this study indicate that the 1.5 and second generations of immigrant adolescents are more protected from risky behaviours than "native" Italians. Moreover, some origin places influence the propensity of alcohol consumption and smoking cigarettes. This fact highlights the importance of the cultural background of the family. Our findings emphasise the differences and complexity of immigrant adolescents, with consequences that public health and prevention programs should consider.

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Supplemental Material

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Author Biographies

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