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# Sexual behavioural differences and risk-taking differences among born-abroad and native university students in Italy

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## Abstract

There is a substantial lack of information in the literature on affective and sexual behaviours in youths with migratory backgrounds, despite immigrants' immediate descendants growing in recent years in many destination countries. In order to fill this gap, we use original information, collected by the "Sexual and Emotional Life of Youths (SELFY)" survey carried out in Italy in 2017. We aim to provide a deeper understanding of sexual behaviours by comparing, for the very first time, university students with a migratory background and their native counterparts, stratifying them by gender. Our results show that born-abroad male students have a greater exposure to more liberal attitudes than their native counterparts, while there are no notable differences between born-abroad and native women. Moreover, we analyse, among a number of factors, the association between three sexual behaviours (extra-couple sexual intercourse, occasional sexual intercourse, and numerous sexual partners) and multiple "risk" behaviours. Behaviours defined as "risky" include voluntary attitudes which can be responsible for negative outcomes. Our results show that reckless driving and drug use are directly associated with sexual behaviours, with no differences by gender or migratory status. The association of binge drinking and early sexual debut with the three considered sexual behaviours is largely present only among natives, while having problems with family and school rules have a gender-related role on sex.

**Keywords:** Born-abroad students, Comparative analysis, Sexual behaviours, Extra-couple sexual intercourse, Occasional sexual intercourse, Numerous sexual partners, Risk behaviours, SELFY, Italy

## Introduction

International migration is generating deep demographic transformations in several European destination countries, especially among young adults (Suárez-Orozco, Motti-Stefanidi, Marks, & Katsiaficas, 2018). Even in countries with a relatively short history of immigration, youths with migratory backgrounds are growing faster not only in numbers but also because they are becoming older. Whether they arrived at a very young age or were born from immigrant parents in destination countries, they attended higher education and experienced events of transition to adulthood. An increasing number of them are having their first affective and sexual experiences. Their

transition to adulthood represents a decisive issue to understand the forces that shape their living arrangements and decision making in adulthood (DeWind & Kasinitz, 1997; Tillman, Brewster, & Holway, 2019).

Sexual behaviours performed during the youth of both migrants and non-migrants can affect health status and can determine specific lifestyles during adulthood and negative health outcomes in their lives (Parrado & Flippen, 2010). However, young people with limited or no experience adopt in many cases behaviours without understanding the immediate or long-term consequences of their actions.

In this general framework, an interesting issue is the way in which sexuality is shaped by the experience of migration (Herdt, 1997; Zimmer-Gembeck & Helfand, 2008). Cultural and ethical norms on this issue vary over time and across space. In other words, the timing and characteristics of sexuality are neither universal nor uniform, but they may differ according to origin and destination contexts, as well as among migratory groups (Gagnon, 2004; Laumann, John, Robert, & Stuart, 1994; Seidman, 2003).

Despite the fact that sexuality can be profoundly influenced by migration, since the movement from the origin to the destination context can alter attitudes and determine original behavioural patterns (Avery & Lazdane, 2008; Hondagneu-Sotelo, 1992), research on the topic remains incomplete.

Generally speaking, the largest part of surveys on sexuality has not followed specific sampling procedures aimed at obtaining a representative sample of individuals with migratory backgrounds. Furthermore, analyses on migrants tend to focus on specific issues, rather than consider the wider spectrum of sexual conduct.

In order to fill this gap, the Sexual and Emotional Life of Youths (SELYF) survey was carried out in 2017 involving young students attending undergraduate courses in economics and statistics in Italian state universities (Dalla-Zuanna, Caltabiano, Minello, & Vignoli, 2019). This survey collects original information about sexual and emotional attitudes and behaviours (the last representative Italian survey on this topic was conducted in 2006; see Barbagli, Dalla-Zuanna, & Garelli, 2010) and compares, for the very first time, students with migratory backgrounds to their native counterparts.

Italy represents a significant context of study because adolescents and young adults grew during recent years (Ambrosini & Molina, 2004; Barbagli & Schmoll, 2011; Casacchia, Natale, Paterno, & Terzera, 2008; Dalla-Zuanna, Farina, & Strozza, 2009; Strozza, 2015). As a consequence, an increasing number of students with migratory backgrounds are enrolled in the Italian school system (Gabrielli, Buonomo, & Strozza, 2018). They became significant in all school orders and, more recently, also in university. In the 2017/2018 academic year, there were 84,000 students with migratory backgrounds at Italian state universities, representing 5% of the total student population attending university. Among them, the largest percentage of 25,000 born-abroad students, registered in Italian universities for the first time in the academic year 2017–2018, have obtained a diploma abroad (Marzullo, 2019) and, presumably, arrived for study reasons.

To the best of our knowledge, there is a substantial lack of information on affective and sexual behaviours in this minority (but increasing) group, despite the attention that has been given to the youngest generations of immigrants since the late 1980s.

We aim to investigate differences in sexual behaviours among born-abroad and native Italian university students. Comparing the two groups, we analyse, among a number of factors, the association between three sexual behaviours (extra-couple sexual

intercourse, occasional sexual intercourse, and numerous sexual partners, respectively) and six “risk” behaviours. Behaviours defined as “risky” include voluntary attitudes which can be responsible for negative outcomes (early sexual debut, binge drinking, use of drugs, reckless driving, problems with parents’ rules, problems with high-school’s rules).

The paper is organised as follows. In the “[Theoretical background](#)” section, we present the theoretical background. Two main sets of research questions drive our analyses and specify to what extent born-abroad and native Italian young adults assume equal or different conduct. The “[Data and methods](#)” section presents data, sample characteristics, and methods used for the empirical analysis. The “[Results](#)” section sets out the results of multivariate regression models. Several concluding remarks are discussed in the “[Discussion and conclusions](#)” section.

### **Theoretical background**

Research on the sexual behaviours of migrants is generally focused on the topics of sexual risk and health-related consequences (Gordillo, 2010; Hirsch, Wardlow, & Smith, 2009; Minian, 2018). Most research has largely focused on several specific communities (respectively, Latinos and Hispanic in the USA and Asiatics/Africans in specific European countries; see, among others, Coleman-Minahan, 2010; Gras, Weide, Langendam, Coutinho, & van den Hoek, 1999; Minnis & Padian, 2001; Morales-Alemán & Scarinci, 2016).

Few studies have observed if the sexual behaviours of the first generation of immigrants are significantly different with respect to those of the autochthonous youth in the first phases of migration (an exception being Cohen, 2015; Mole, Parutis, Gerry, & Burns, 2014).

In this context, research regarding the sex behaviours of foreign youth in destination countries has lacked a dedicated theoretical framework for the design of empirical analysis and the interpretation of results (Guarini, Marks, Patton, & Coll, 2011; Parrado & Flippen, 2010).

However, according to the assimilation theory, some studies highlighted that migrants’ sexuality is “often evaluated in terms of their supposed success or failure in ‘assimilating’ to dominant cultural sexual norms (which are held to be superior to migrants’ cultures), and the presumption that exposure to dominant culture cause change” (Luibhéid, 2014: 2).

Moreover, taking into account the origin culture, some analyses shaped the interpretation of their results according to the theory of acculturation (Ford & Norris, 1993; Ladrine & Klonoff, 2004). It supposes that “behaviours that are low in prevalence for a population in its native country will be high in prevalence post-migration due to the removal of punishers that previously inhibited the behaviours. Similarly, behaviours that are high in prevalence for a population in its native country will be low in prevalence post-migration due to the removal of positive or negative reinforcers that sustained the behaviours” (Guarini et al., 2011: 207).

The attempt to verify if these theories fit a particular context and/or to a specific group of migrants needs to compare the sexual behaviours of migrants with those of non-migrants both in their origin and destination countries. Additionally, differences

among migratory generations need to be considered to evaluate changes in sexual conduct.

Unfortunately, the available cross-sectional data on university students does not allow us to explicitly test both the assimilation and the acculturation theories due to the young age of respondents, and to the lack of information on their country of birth, on their migratory generation, and on the duration of their stay in Italy. Therefore, being completely aware of the importance of these mechanisms for born-abroad students in Italy, we aim to consider the different sexual behaviours and determinants between born-abroad and natives, even if we are not able to disentangle the different mechanisms and clearly explain the possible differences.

Generally speaking, the behaviours of youths are influenced by a complex set of biological, social environmental, perceived environmental, personality, and behavioural factors (Santelli, Brener, Lowry, Bhatt, & Zabin, 1998; Seidman, Fischer, & Meeks, 2016; Tillman et al., 2019). Considering the determinants of sexual conduct and according to the literature (e.g. Morales-Alemán & Scarinci, 2016), we consider two different types of factors/variables, namely, individual factors (i.e. characteristics and behaviours of the individual) and proximal-context factors (i.e. variables pertaining to origin family and to high-school).

Among individual factors, one of the most important, in addition to migratory status, is gender, which may reflect different approaches to experiencing sexual relationships (Allison & Risman, 2013; Crawford & Popp, 2003; Muindia, Mudegeb, Beguya, & Mberua, 2014). Obviously, gender is a decisive dimension of sexuality, as beliefs associated with gender roles regarding masculinity and femininity define how men and women must behave (Parrado & Flippen, 2010). In this perspective, it was identified that, since in many cases women and men grew up in different ways in the context of origin, the migration event and the exposure to the dominant culture of the destination country can produce different behaviours among the two genders (Cardoza, Documet, Fryer, Gold, & Butler 3rd., 2012; Davies et al., 2006; Edwards, Fehring, Jarrett, & Haglund, 2008; Manlove, Ryan, & Franzetta, 2007; Raffaelli & Ontai, 2004; Tolman & McClelland, 2011). Guarini et al. (2011: 207) showed that levels of sexual risk behaviours of Latino female adolescents in the USA “increase due to the removal of *marianismo* as a contingency inhibiting” those behaviours, while the conduct of male adolescents does not differ greatly from the cultural norm of “*machismo*” that is present in the countries of origin; as a consequence, levels of sexual risk behaviours did not increase as dramatically among males as they do among females.

Another factor that can also influence the conduct of migrants and of natives is the age at which they have their first sexual experience, which was defined as a crucial event in the transition to adulthood and throughout the life-course (Laumann et al., 1994; O'Donnell, O'Donnell, & Stueve, 2001). Some research has demonstrated that a higher proportion of migrants than non-migrants initiate sex at 14 years old or even before (Muindia et al., 2014). Moreover, early sexual initiation is a risk marker for other sexual risk behaviours (e.g. failing to use condoms and the number of lifetime sexual partners) after first intercourse for both migrants and natives (Santelli, Lowry, Brener, & Robin, 2000).

It was also demonstrated that an association exists between, on the one hand, youth personal characteristics (e.g. a risk-taking personality profile), accompanied by a

biological predisposition to “sensation-seeking”, and, on the other hand, risky sexual activity (Muindia et al., 2014). The consumption of alcohol, tobacco, illegal drugs, and sexual risk behaviours are increasingly common during youth-ages and are becoming, more and more often, habits of life (Connell, Gilreath, & Hansen, 2009). Scholars highlighted how an early debut of risk behaviours during youth-ages increases the likelihood of risk-taking during adulthood (Baldwin, Shrestha, Potrepka, & Copenhaver, 2013; Jackson, Sweeting, & Haw, 2012). According to Gerrard, Gibbons, Benthin, and Hessling (1996), adolescents are aware of the threat they are taking, but that awareness does not change their engagement in hazardous conduct.

As a consequence, although limited research has simultaneously examined the co-occurrence of risk behaviours, it was revealed that alcohol and drug use are the most important predictors for sex risk activities (e.g. multiple sexual partners, early initiation of sexual intercourse, and not using condoms; Morales-Alemán & Scarinci, 2016). In particular, it was highlighted that binge drinking (Lee & Hahm, 2010) and drug use (Bryan, Schmiede, & Magnan, 2012; Guo et al., 2002; Khan, Berger, Wells, & Cleland, 2012; Luk et al., 2016; Ritchwood, DeCoster, Metzger, Bolland, & Danielson, 2016; Tapert, Aarons, Sedlar, & Brown, 2001) are associated with increased sexual risk behaviours; in addition, it was demonstrated that reckless driving is correlated with alcohol use, substance use, and sexual conduct (Adu-Frema, Saka, & Perrino, 1997; Irwin, 1990; Stanton, Li, Cottrell, & Kaljee, 2001).

Males are more likely than females to report taking risks for fun while driving and are more optimistic than their counterparts when judging the hazard of driving situations that involved quick driving reflexes or vehicle-handling skills (Dejoy, 1992; Morgenroth, Fine, Ryan, & Genat, 2017). More generally, it was showed that “problem-behaviours” are often linked to sexual risk during youth-ages (Cook & Clark, 2005; Kann et al., 2014; Miller, Naimi, Brewer, & Jones, 2007; Thompson, Kao, & Thomas, 2005).

Among the most important proximal-context factors, particular emphasis has been given to the family, and especially to parental influence on migrants. In fact, it was highlighted that when youths experience low levels of parental monitoring (compared to an accurate form of control and supervision of children’s activities outside the home) they are more likely to engage in various sexual risk behaviours (e.g. early sex intercourse initiation), while high parental monitoring produces the opposite effect (Cabral et al., 2017; Huang, Murphy, & Hser, 2011). Moreover, it was highlighted that levels of parental monitoring differ by gender and race/ethnicity (Huang et al., 2011). In particular, Guilamo-Ramos, Jaccard, Pena, and Goldberg (2005) suggested that the “subjugation to the family”, typical of familismo (closeness/interconnectedness between family members and responsibility towards each other), was associated with fewer hazards. Among Latino immigrants in the USA, Muindia et al. (2014) proved that young migrants can be engaged in sexual activity soon after migration, not only due to the lowering of parental monitoring but also due to behavioural problems. Among these problems, difficulties with fitting into the new environment can appear.

In the end, previous analyses showed that many risk behaviours (delinquency, alcohol and drug use, and unprotected sex) are initiated during the youth-ages. In particular, some authors (Li et al., 2011) tested the effects of school engagement on risk behaviours, highlighting also the role of conventional institutions, mainly represented by the school, in the lives of children and adolescents, and the prosocial values that they

represent on delinquent and health-compromising behaviours (Chassin, Flora, & King, 2004). Following this perspective, other authors (Henry, Swaim, & Slater, 2005) demonstrated that young people who are connected to or emotionally involved in school may be less likely to engage in problematic conduct and are willing to endorse the norms established within the school context. Emotional engagement was defined as students' emotional reaction to the rules and conduct of the school, teacher, and classmates (Stipek, 2002).

According to the available data, we analysed three sexual behaviours, namely, extra-couple sexual intercourse (having had sex with a different person while having a boy/girlfriend), occasional sexual intercourse (having had sex with a friend or a stranger, not sharing with him/her any affective relationship), and numerous sexual partners (having had sex with a number of partners higher than the mean value: more than two partners).

Following the aforementioned literature described, we can formulate two main sets of research questions, bearing in mind that, generally speaking, the differences of sexual behaviours between young men and women are relevant in Italy and that it is useful to use a "gender lens" to identify the double standard (Dalla-Zuanna et al., 2019).

RQ1: are the sexual behaviours of born-abroad university students notably different than those of the native ones? If yes, does this difference affect mostly men or women? Among the three observed behaviours, in which is this difference more evident?

RQ2: is the occurrence of observed sexual behaviours directly associated with risk behaviours? If yes, what are the different impacts of this effect by gender and place of birth? Among the three observed behaviours, in which is this association more evident?

## Data and methods

We examine data from the Sexual and Emotional LiFe of Youths (SELFY) survey, which was carried out in 2017 in 28 Italian universities with the aim of drawing an updated picture of sexual and emotional attitudes and behaviours among almost 8000 (20% of the total) young Italian university students, attending undergraduate courses in economics and statistics in Italian state universities. Data are weighted to make them representative of this group of university students at the national level.

The main limitation is that we are not dealing with a representative sample of the whole youth population. Nonetheless, a sample comprised of university students has many advantages: mainly, a high number of respondents who are well disposed towards filling in a relatively long, although not complex, questionnaire. Within this group, there exists relevant heterogeneity regarding both sexuality and affective behaviours, which makes university students relevant subjects of research (see, for example, Keller, 1959; Pitts & Rahman, 2001; Stinson, 2010; Weeden & Sabini, 2007).

For further information on the survey see Dalla-Zuanna et al. (2019), which states that "the sampled students are less sexually precocious than the average of their peers" because "a strong investment in study, like that required of students of economics and statistics, corresponds with a less intense sexual life (p. 8)". SELFY replicates an identical survey held in 2000–2001 by using the same national sampling procedure and the same data collection technique (Billari, Caltabiano, & Dalla-Zuanna, 2007; Dalla-Zuanna & Crisafulli, 2004; Gabrielli & Borgoni, 2007). On that occasion, a specific analysis of students with migratory backgrounds was not performed because immigrants' descendants had mostly not yet reached adulthood and, within the sample survey, only

120 students (42 males and 78 females) were born-abroad and, among them, only 77 students had had their first sexual experience.

Our analyses include 6019 students (77.7% of the SELFY total sample) who have had their first sexual experience by the time of the survey, of which 306 students (5.1%) are born-abroad (136 males and 170 females). We excluded from the analysis 97 students that had missing information on their place of birth.

The sub-sample of students born abroad includes people who arrived in Italy in pre-school or school ages following one or both parents, but also people who arrived as young adults to study in Italian universities. The second generation of immigrants (born in the destination country) is instead excluded from this sub-sample. Unfortunately, among children born in Italy (the majority group), we were not able to select the groups both of the children born in Italy from foreign parents (second generation) and of the children born from mixed couples; the data do not provide information on the citizenship, origin, or migratory background of interviewees and their origin family. In addition, we were not able to consider that a number of born-abroad students may have had Italian parents.

The most recent (unpublished) information on these groups of youths came from 2011 census data where, among those born in Italy at age 13–17 (and that had almost reached age 19–23 in 2017, i.e. the year of the survey), the percentage of minors from non-Italian parents (second generations) was 2.4% of the total, and the percentage of minors from one Italian parent was 6.4%. Moreover, the percentage of born-abroad minors from Italian parents was 10.0%. According to these numbers, the relative weight (percentage) of the three groups among native and born-abroad students is not significant enough to introduce bias in our analyses.

According to the available data, the three observed sexual behaviours are analysed through three dummy variables. First, the variable on “extra-couple sexual intercourse” considers if the respondent has had at least one sexual experience with a different person while with a boy/girlfriend (yes, i.e. sometimes, often, very often—ref., no). Second, “occasional sexual intercourse” considers if respondents have had sex with a friend or a stranger, not sharing with him/her any affective relationship (yes, i.e. sometimes, often, very often—ref., no). Third, the variable about “numerous sexual partners” considers if the respondent has had a number of partners higher than the median value in the sample (more than two partners). We decided to exclude from the analysis other sexual outcomes, such as having had “paid sexual partners” or “casual sex without using a condom”, due to the low number of individuals that have had these experiences.

Three separate logistic models were estimated to test if each observed behaviour is differently linked to the migratory status and gender of university students (RQ1). As shown by the extant literature on this topic and described in the “Theoretical background” section, differential patterns coexist based on the gender and migratory status of youths. The interaction of gender and place of birth (which divides students into four groups: men born in Italy—ref., men born-abroad, women born in Italy, women born-abroad) analyses the differential association and its significance on the three sexual behaviours, net to other covariates.

Moreover, we consider (according to RQ2) if the occurrence of a specific risk behaviour “yes” increases the probability of having the three sexual behaviours with respect

to its absence “no”. For this reason, six independent dummy variables (yes vs. no) were built and included in the logistic models to describe risk behaviours, as follows:

1. Early sexual debut: “Had first sexual intercourse before age 16?”
2. Binge drinking: “Ever got drunk?”
3. Use of drugs: “Ever used marijuana or ecstasy?”
4. Reckless driving: “Ever drove fast?”
5. Problems with parents’ rules: “Had difficulty in following parents’ rules at age 16–18 years old?”
6. Problems with high-school’s rules: “Had difficulty in following high-school’s rules?”

For each of the three logistic regression models proposed and for each of the six binary risk behaviours considered, a partial effect plot was produced. Each plot shows predicted probabilities by interaction of gender and place of birth in order to evaluate whether there exists a differential association among the four student groups and specific risk-taking in observing the three sexual behaviours, net to the other characteristics. On this issue, an overall synthetic picture is provided.

In all the regressions, we also include (according to the availability of information) several individual characteristics (as control variables) that the literature considers to be relevant for the study of sexual behaviours, such as:

- *Dimension of municipality* (less than 20,000 inhabitants—ref.; 20,000 to 100,000 inhabitants; more than 100,000 inhabitants): the effect of the municipality size on adolescent conduct is controversial. For example, Santelli et al. (1998) showed that residents living in urban areas were somewhat more likely to have specific sexual behaviours than those resident in nonurban areas because they are characterised by a traditional context and controlling habits. However, no significant urban-rural differences were observed for sexual behaviours in other recent studies (Thompson et al., 2005).
- *Age at interview* (less than 21 years old—ref.; 21 years old or older): it is expected that students at older ages had more occasion to experience sex than younger ones. Most interviewees are 19–22 years old (87.6% of the total sample), even if the sample size ranges from age 17 to age 26 at interview.
- *At least one older sibling alive* (no—ref.; yes): although studies agree on older siblings’ influence, disagreements prevail on whether the older sibling’s role is positive or negative (Rodgers, Rowe, & Harris, 1992; Haftu, Berhe, Tesfay, & Gebremeskel, 2019). The majority emphasise how older siblings’ behaviours can negatively influence their younger siblings’ sexual conduct (Whiteman, Zeiders, Killoren, Rodriguez, & Updegraff, 2014; Widmer, 1997). On the other hand, close sibling interaction allows younger siblings to have easy access to trusted and accurate information on sexuality-related issues, which prevent them from involvement in risky sexual activity (Averett, Argys, & Rees, 2011).
- *Current value of religion* (no value or very little—ref.; enough or very important): it is expected that strong religious beliefs reduce sexual risk behaviours by attending religious norms and ideals. Religiosity is widely cited as a potentially important factor for sexual attitudes and conduct. Different studies found that “intrinsic”



- religiosity (measured using beliefs and prayer) was protective against sexual hazard (Edwards et al., 2008; Smith, 2015; Zaleski & Schiaffino, 2000).
- *Separated/divorced parents* (no—ref.; yes): when parents divorce, children’s attitudes about sexual behaviours change. Each change in the family structure (such as from married to divorced couples) increases the probability of having sex for many teenage children. Children’s approval of premarital sex and sexual risk behaviours rises dramatically (Albrecht & Teachman, 2003), and divorced parents increase their permissive attitudes towards the sexual conduct of their children (Jeynes, 2001).
  - *Death of at least one parent* (no—ref.; yes): Compared with living in a 2-parent family, living in a single-parent family has been associated with an increased probability of sexual risk behaviours (Huang et al., 2011). Studies on parental monitoring and supervision demonstrated both the relationship between parental monitoring and risk behaviours and that single parents reduce parental monitoring towards their children (Bámaca-Colbert, Greene, Killoren, & Noah, 2014). A reduction in parental monitoring is observed in the case both of widowed parent and of separated/divorced parent.
  - *At least one parent has a diploma or higher educational level* (no—ref.; yes): Parents’ educational attainment, as a proxy of the cultural level of the origin family, is an important predictor of the sexual experiences of their children. However, the effect is not unique in the literature (e.g. Thornton & Camburn, 1987; Santelli et al., 2000). On the one hand, education of parents may reflect exposure to more liberal attitudes, with a consequential rise in the acceptance of sexual experiences of their children. On the other hand, highly educated parents might have higher ambitions for their children and might be more worried about sexual conduct and their health and marital consequences.
  - *At least one parent has a middle-high qualified job*—thus, employed or shopkeeper, professional or white collar, manager (no—ref.; yes): this can be considered to be a proxy of the socio-economic status (SES) of the origin family. SES, as measured by family occupational or income level, is associated with many measures of health status of the descendants. Some studies (Bámaca-Colbert et al., 2014; Langille, Hughes, Murphy, & Rigby, 2005; Lee & Hahm, 2010; Upchurch, Aneshensel, Mudgal, & McNeely, 2001) identified an association between family characteristics and adolescent sexual health. They proved that the hazard of having an anticipated sexual debut and contraceptive use increase if parents are unemployed, while having a higher family income increases the number of sexual partners and the frequency of intercourse. However, the limited empirical evidence on adolescents with migratory background in the US context suggests that other factors might have more influence within this category (Santelli et al., 2000; Vereecken, Maes, & De Bacquer, 2004).
  - *Talked at age 16–18 years old with at least one parent about affective experiences* (no—ref.; yes): it is expected that a strong and positive parent-child relationship should reduce sexual risk behaviours. Strong family relationships appear to promote healthy attitudes among adolescents (Minnis & Padian, 2001). Parent involvement is a protective factor against a variety of risks (Boyer, 2006; Crouter & Head, 2002; Han, Miller, & Waldfogel, 2010).

### Results

Observing our three target variables on sexual behaviours, the median ages at first sexual intercourse range from 17.8 years old in born-abroad males to 18.8 years old in born-abroad women (Table 1). The percentages of students that have experienced extra-couple sexual intercourse are higher among males than females and, in particular, among born-abroad students (33.5% for born-abroad males and 18.7% for born-abroad females, respectively). Similar pictures concern students who had both occasional sex and who had more than two sexual partners: percentages are higher among males than females and, in particular, among born-abroad male students (69.5% and 50.1% of born-abroad males, respectively).

Thus, the overall picture shows higher percentages of the observed behaviours among students with migratory backgrounds by gender if compared to those of natives. The only exception is born-abroad females who had occasional sex; they show a lower percentage than their native counterparts.

Figure 1 reports the predicted probabilities of having extra-couple sexual intercourse, occasional sex, and numerous sexual partners by the interaction of gender and place of birth, controlling for risk behaviours and individual characteristics (see the note included in the figure). Generally speaking, men (born in Italy or abroad) assume higher probabilities than their female counterparts for the three observed behaviours. Born-abroad men have higher predicted values of experiencing the three sexual activities (30.8%, 60.6%, and 50.3%, respectively) than Italian men (22.1%, 48.1%, and 39.7%), while no notable differences occur between born-abroad and native women. Among the three behaviours, students born abroad show the lowest gap between men and women in having had numerous sexual partners (in men, the gap is 3.7% for students born in Italy, and 10.4% for those born abroad), while they show the largest gap in having had occasional sex (17.5% and 30.9%, respectively).

Table 2 shows the results of the logistic regression models. Supporting the results of predicted probabilities, men born abroad systematically assume positive odds ratios in the three sexual behaviours and higher positive associations than the reference

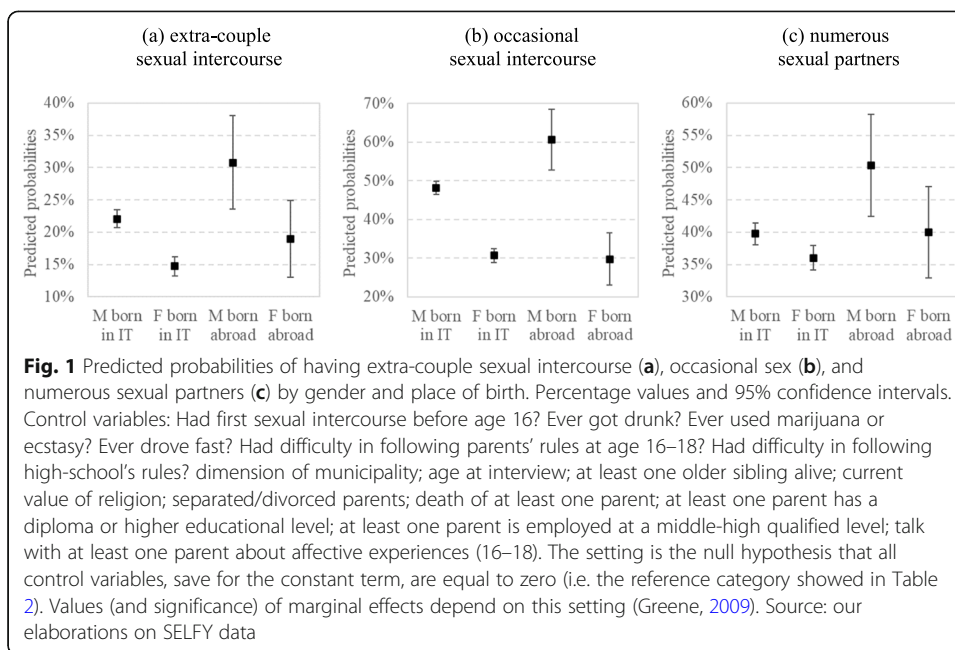
**Table 1** Characteristics of the sample by gender and place of birth

| Characteristics                                  | Born in Italy |        | Born abroad |        |
|--|---------------|--------|-------------|--------|
|  | Male          | Female | Male        | Female |
| Total SELFY sample size                          | 3874          | 3466   | 171         | 234    |
| Median age at interview                          | 20.7          | 20.5   | 21.1        | 21.2   |
| <i>Interquartile range (p75-p25)</i>             | 1.5           | 1.3    | 1.8         | 2.2    |
| Median age at first sex <sup>a</sup>             | 17.9          | 18.0   | 17.8        | 18.8   |
| <i>Interquartile range (p75-p25)</i>             | 3.6           | 4.0    | 3.4         | 4.5    |
| % that had first sexual intercourse              | 79.6          | 76.8   | 84.3        | 77.5   |
| Among which:                                     |               |        |             |        |
| % that had extra-couple sexual intercourse       | 23.6          | 13.3   | 33.5        | 18.7   |
| % that had occasional sexual intercourse         | 52.8          | 28.8   | 69.5        | 23.2   |
| % that had numerous sexual partners <sup>b</sup> | 43.6          | 34.8   | 50.1        | 36.7   |

<sup>a</sup>KM survivor estimates

<sup>b</sup>More than two partners (higher than the mean number of the distribution)

Source: our elaborations on SELFY data



category, while women born in Italy show the opposite. Women born abroad have a significant and negative odds ratio only when considering occasional sex.

Independently of the gender and place of birth, risk behaviours have positive odds ratios and are positively associated with sexual conducts. The use of drugs shows the highest odds ratio (1.963, 1.956, and 1.785, respectively), and binge drinking follows. Interestingly, reckless driving has, in particular, a high positive association with occasional sex (OR 1.555); while, not surprisingly, early sexual debut is positively related to the number of sexual partners (but also the risk of extra-couple sexual intercourse). Difficulties in following family and school rules are mostly associated with extra-couple sexual intercourse (respectively OR 1.363 and 1.512).

Briefly considering other control variables and according to the literature, the relatively older age at interview and the separation/divorce of parents are positively related to the probability of having the three sexual behaviours, while giving importance to religion has a protective outcome by producing negative probabilities in having occasional sex and numerous sexual partners. Two other control variables present interesting results. The dimension of municipality of residence shows that living in the largest cities relates (positively) only in having extra-couple sexual intercourse, while having older siblings increases the probability of having occasional sexual intercourse.

The cultural and socio-economic levels of the origin family are not associated with sexual behaviours, with the exception of having numerous sexual partners; this is positively related to the presence of at least one parent that is an employee at the middle-high qualified level. This result is not surprising given that our sample consists of university students that come presumably from origin families characterised by similar socio-economic and cultural statuses.

The differential association of each risk behaviour jointly with migratory status and gender on sexual behaviours is showed by predicted probabilities reported in two appendix figures (Additional file 1 and Additional file 2) and synthesised in Table 3 where

**Table 2** Determinants of having extra-couple sexual intercourse, of occasional sex, and of numerous sexual partners

| Variables   | Categories                               | Extra-couple sexual inter. |      | Occasional sexual inter. |      | Numerous sex. partners |      |
|---|--|----------------------------|------|--------------------------|------|------------------------|------|
|   |  | OR                         | Sig. | OR                       | Sig. | OR                     | Sig. |
| Gender and place of birth   | <i>M born in IT (ref.)</i>               | 1                          |      | 1                        |      | 1                      |      |
|   | F born in IT                             | 0.588                      | ***  | 0.435                    | ***  | 0.836                  | ***  |
|   | M born abroad                            | 1.636                      | **   | 1.769                    | ***  | 1.633                  | ***  |
|   | F born abroad                            | 0.815                      |      | 0.416                    | ***  | 1.010                  |      |
| Early sexual debut  | <i>No (ref.)</i>                         | 1                          |      | 1                        |      | 1                      |      |
|   | Yes                                      | 1.360                      | ***  | 1.043                    |      | 1.546                  | ***  |
| Binge drinking  | <i>No (ref.)</i>                         | 1                          |      | 1                        |      | 1                      |      |
|   | Yes                                      | 1.420                      | ***  | 1.726                    | ***  | 1.614                  | ***  |
| Use of drugs  | <i>No (ref.)</i>                         | 1                          |      | 1                        |      | 1                      |      |
|   | Yes                                      | 1.963                      | ***  | 1.956                    | ***  | 1.785                  | ***  |
| Reckless driving  | <i>No (ref.)</i>                         | 1                          |      | 1                        |      | 1                      |      |
|   | Yes                                      | 1.451                      | ***  | 1.555                    | ***  | 1.353                  | ***  |
| Problems with parents' rules  | <i>No (ref.)</i>                         | 1                          |      | 1                        |      | 1                      |      |
|   | Yes                                      | 1.363                      | ***  | 1.241                    | ***  | 1.223                  | ***  |
| Problems with high-school's rules                                   | <i>No (ref.)</i>                         | 1                          |      | 1                        |      | 1                      |      |
|   | Yes                                      | 1.512                      | ***  | 1.317                    | ***  | 1.333                  | ***  |
| <i>Control variables</i>  |  |                            |      |                          |      |                        |      |
| Dimension of municipality   | <i>Less than 20 thou. of hab. (ref.)</i> | 1                          |      | 1                        |      | 1                      |      |
|   | 20-100 thou. of hab.                     | 1.113                      |      | 1.044                    |      | 0.959                  |      |
|   | More than 100 thou. of hab.              | 1.208                      | **   | 1.130                    |      | 1.101                  |      |
| Age at interview  | <i>less than 21 years old (ref.)</i>     | 1                          |      | 1                        |      | 1                      |      |
|   | 21 years old or older                    | 1.535                      | ***  | 1.548                    | ***  | 2.035                  | ***  |
| At least one older sibling alive                                    | <i>No (ref.)</i>                         | 1                          |      | 1                        |      | 1                      |      |
|   | Yes                                      | 0.966                      |      | 1.129                    | **   | 1.008                  |      |
| Current value of religion   | <i>No value or very little (ref.)</i>    | 1                          |      | 1                        |      | 1                      |      |
|   | Enough or very important                 | 0.988                      |      | 0.810                    | ***  | 0.689                  | ***  |
| Separated/divorced parents  | <i>No (ref.)</i>                         | 1                          |      | 1                        |      | 1                      |      |
|   | Yes                                      | 1.213                      | **   | 1.348                    | ***  | 1.396                  | ***  |
| Death of at least one parent  | <i>No (ref.)</i>                         | 1                          |      | 1                        |      | 1                      |      |
|   | Yes                                      | 1.159                      |      | 1.014                    |      | 1.010                  |      |
| At least one parent has a diploma or higher educational level       | <i>No (ref.)</i>                         | 1                          |      | 1                        |      | 1                      |      |
|   | Yes                                      | 1.050                      |      | 1.007                    |      | 1.129                  |      |
| At least one parent has a middle-high qualified job                 | <i>No (ref.)</i>                         | 1                          |      | 1                        |      | 1                      |      |
|   | Yes                                      | 0.949                      |      | 1.067                    |      | 1.212                  | ***  |
| Talked with at least one parent about affective experiences (16–18) | <i>No (ref.)</i>                         | 1                          |      | 1                        |      | 1                      |      |
|   | Yes                                      | 1.143                      |      | 0.879                    | *    | 1.114                  |      |
| Constant term   |  | 0.060                      | ***  | 0.248                    | ***  | 0.135                  | ***  |
| Pseudo R2   |  | 0.090                      |      | 0.133                    |      | 0.100                  |      |

Logistic regression models

Legend: \* $p < 0.05$ ; \*\* $p < 0.01$ ; \*\*\* $p < 0.001$

Source: our elaborations on SELFY data

**Table 3** Positive associations among sexual behaviours and risk behaviours by gender and place of birth

| Students by gender and place of birth     | Early sexual debut | Binge drinking | Use of drugs | Reckless driving | Problems with parents' rules | Problems with school's rules |
|---|--------------------|----------------|--------------|------------------|------------------------------|------------------------------|
| <i>Male born in Italy</i>                 |                    |                |              |                  |                              |                              |
| Ever had extra-couple sexual intercourse? | ✓                  | ✓              | ✓            | ✓                |                              | ✓                            |
| Ever had occasional sexual intercourse?   |                    | ✓              | ✓            | ✓                |                              | ✓                            |
| Ever had numerous sexual partners?        | ✓                  | ✓              | ✓            | ✓                |                              | ✓                            |
| <i>Female born in Italy</i>               |                    |                |              |                  |                              |                              |
| Ever had extra-couple sexual intercourse? | ✓                  | ✓              | ✓            | ✓                | ✓                            |                              |
| Ever had occasional sexual intercourse?   |                    | ✓              | ✓            | ✓                | ✓                            |                              |
| Ever had numerous sexual partners?        | ✓                  | ✓              | ✓            | ✓                | ✓                            |                              |
| <i>Male born abroad</i>                   |                    |                |              |                  |                              |                              |
| Ever had extra-couple sexual intercourse? |                    |                | ✓            | ✓                |                              | ✓                            |
| Ever had occasional sexual intercourse?   |                    |                |              | ✓                |                              |                              |
| Ever had numerous sexual partners?        |                    |                | ✓            | ✓                |                              | ✓                            |
| <i>Female born abroad</i>                 |                    |                |              |                  |                              |                              |
| Ever had extra-couple sexual intercourse? |                    |                | ✓            | ✓                | ✓                            |                              |
| Ever had occasional sexual intercourse?   |                    |                | ✓            | ✓                | ✓                            |                              |
| Ever had numerous sexual partners?        |                    |                |              | ✓                | ✓                            | ✓                            |

Note: signs report when the positive marginal effect of each risk behaviour by gender and place of birth (reported in Additional file 1 and Additional file 2) is significantly associated with sexual behaviours  
 Source: our elaborations on SELFY data

only the most evident associations are outlined (significance according to 95% confidence intervals). Reckless driving and drug use have positive marginal associations with the three sexual behaviours among the four student groups, with only two exceptions (drugs use is not significantly associated with occasional sex for born-abroad male students and having numerous sexual partners for born-abroad female students).

Binge drinking and early sexual debut assume positive predicted probabilities in the three sexual behaviours only among Italian students, with two exceptions (early sexual debut has no significant association on occasional sex for either men or women).

Interestingly, difficulties following family and school rules are differently associated with sexual behaviours by gender and despite the place of birth. In particular, breaking family rules assumes positive marginal effects in association with the three sexual behaviours only among women, while breaking school rules does the same only among men. There are two exceptions: no significant association is observed with occasional sex for born-abroad male students, and born-abroad female students that break school rules had numerous sexual partners more frequently than others.

## Discussion and conclusions

By using original information collected by the SELFY survey, we aimed to provide a deeper understanding of the sexual behaviours of university students stratified by migratory status and gender and by controlling for a number of characteristics of respondents and their families. In particular, we analysed three sexual behaviours (having had extra-couple sexual intercourse, occasional sexual intercourse, and numerous sexual partners) and related them to multiple risk behaviours.

Referring to the two main sets of research questions that drove our analysis, we can give the following answers. Generally speaking and according to the literature (Cardoza et al., 2012; Davies et al., 2006; Edwards et al., 2008; Manlove et al., 2007; Raffaelli and Ontai, 2004; Tolman & McClelland, 2011), the migratory event and the subsequent exposure to the cultural context of the country of destination is differently associated with sexual behaviours for men and women (RQ1). Nevertheless, not conforming to Guarini et al. (2011), our results show that the probability of having experienced the selected sexual behaviours is higher among men than among women. This can be due to two main reasons, both linked to the distinct characteristics of the samples. While Guarini et al. (2011) considered a specific ethnic group (Latinos) of youths, independently of their educational attainment, we analysed university students coming from a range of origin countries. Consequently, our results should be considered as an average outcome of individuals coming from different contexts and backgrounds that we are clearly not able to disentangle (because of a lack of information, e.g. the country of birth of students). Moreover, we observe a homogenous group that is selected for its educational level (university students).

However, in a more general context, our findings confirm that the different norms that drive sexual behaviours among men and women play an important role (Muindia et al., 2014; Santelli et al., 1998; Parrado & Flippen, 2010). In particular, born-abroad male students show a greater exposure to more liberal attitudes than natives. In fact, the sexual conducts that assume the most evident “gendered” difference are those not (or less) related to affective relationships (i.e. first of all, occasional sexual intercourse and, secondly, numerous sexual partners), which are more common among born-abroad male students. On the other hand, born-abroad female students, as well as their native counterparts, are less involved in sexual experiences by having more “protective” cultural norms and/or presumably high professional ambitions (Dalla-Zuanna et al., 2019).

According to the literature, our findings confirm that early sexual debuts (Muindia et al., 2014; Santelli et al., 2000) and risk-taking personality profiles (Lee & Hahm, 2010; Morales-Alemán & Scarinci, 2016) are positively associated with sexual behaviours (RQ2). In particular, the use of drugs and alcohol is strongly related to sexual conduct (Bryan et al., 2012; Guo et al., 2002; Khan et al., 2012; Luk et al., 2016; Ritchwood et al., 2016; Tapert et al., 2001). In line with Irwin (1990), reckless driving is directly associated with occasional sexual partners.

When separately analysing student groups by gender and place of birth, interesting differences emerge. Reckless driving and drug use have a positive link on sexual attitudes in all four groups. The positive association between binge drinking and early sexual debut is largely present only among natives (and not among born-abroad students). In our opinion, this different pattern could once again be due to cultural and/or

religious backgrounds (factors that are only partially controlled) that affect behavioural rules and norms and that, in some cases, inhibit the use of alcohol or early sexual intercourse.

Family and school rules show gendered results. According to the literature (Huang et al., 2011), parental monitoring and family relations are more strongly associated with female behaviours than male ones (with no distinction between migrants and non-migrants). A possible explanation of this issue, that our data unfortunately does not allow us to further develop, could depend on the level of gender inequality that within the family defines different norms between women and men (Allison & Risman, 2013; Crawford & Popp, 2003; Dalla-Zuanna et al., 2019). Subsequently, breaking family rules is linked to unconventional sexual attitudes more among female than among male youths. The opposite is observed when considering the school context: more male students than female ones have particular sex conduct when they declared to have had difficulty in following their high-school's rules. The emotional reaction of male students to their school's institutional rules and conduct is associated with their sexual behaviours.

Our study presents some limitations. Two of them concern the sub-sample size of born-abroad students (306 cases) and the lack of information about the individual country of birth and the migratory background of interviewees and their origin family, without the possibility of identifying the second generation of immigrants. These limits prevented us from further stratifying born-abroad students in order to consider the different socio-cultural backgrounds of the origin context, as well as comparing their sexual behaviours with those of similarly aged individuals remaining in the countries of origin. In addition, the limited sample size of the born-abroad population failed to facilitate the conclusion of whether the relationships are not statistically significant because of the low number of students.

Another limit concerns the targeted age-group of the sampling procedure, which did not allow us to test specific existing theories in the literature (e.g. assimilation and acculturation theories). Therefore, this paper has a descriptive approach.

In addition, since we have no information on the age at which participants arrived in Italy, it was not possible to determine whether (and to what extent) some of the sexual activities (e.g. early sexual debut) had been experienced before migration; however, given the young age of most of our respondents, we can assume that it concerns only a residual percentage of interviewees.

Lastly, being aware that we are dealing with a sample representing only university students, we cannot exclude among the immigrants' sub-sample a selection bias, more evident than with respect to the native counterparts, concerning their migratory history (likely the most integrated ones) or motivation (in some cases they migrated for education-related reasons) and socio-economic characteristics (probably the most educated and wealthy ones) of respondents and their origin family.

Despite these limitations, we simultaneously examined the co-occurrence of different sexual behaviours and risk behaviours from a comparative perspective. Moreover, the novelty of this analysis lies in a dimension not studied so far in the Italian context to our knowledge: where applicable, we used retrospective information, despite the cross-sectional structure of data, in order to preserve the association between "risk" behaviours and the three observed sexual behaviours.

The insights obtained from the results of this study should stimulate future research to further clarify the mechanisms and causality patterns that affect attitudes and conduct within minority groups.

The higher propensity of immigrants to experience specific sexual behaviours implies a need to further investigate these issues, particularly from a longitudinal perspective, in a context (as the Italian one) that still does not pay particular attention to the differential behaviours of immigrants.

In particular, counting on a wide range of information, such as the characteristics of the contexts of origin and destination, it is vital to test theories about attitudes and trends, their causes, and their consequences, thus evaluating the importance of the migratory background and generation.

### Supplementary information

**Supplementary information** accompanies this paper at <https://doi.org/10.1186/s41118-020-00088-1>.

**Additional file 1: Figure 1.** Predicted probabilities of having extra-couple sexual intercourse (a), occasional sex (b), and numerous sexual partners (c) by gender, place of birth, and respectively early sexual debut (1), binge drinking (2), use of drugs (3). Percentage values and 95% confidence intervals.

**Additional file 2: Figure 2.** Predicted probabilities of having extra-couple sexual intercourse (a), occasional sex (b), and numerous sexual partners (c) by gender, place of birth, and respectively reckless driving (4), problems with parents' rules (5), problems with high-school's rules (6). Percentage values and 95% confidence intervals.

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### Authors' contributions

This paper is the result of a close and interactive collaboration among the authors. The sequence of their names on the paper as published reflects their intellectual contributions and is not determined by alphabetical order. The authors read and approved the final manuscript.

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### Availability of data and materials

The data that support the findings of this study are available from one of the Coordinators of SELFY survey (Marcantonio Caltabiano, Gianpiero Dalla Zuanna, Alessandra Minello e Daniele Vignoli) and from the authors upon reasonable request and with permission of one Coordinator of SELFY survey.

### Competing interests

The authors declare that they have not competing interests.

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