



Working Paper Series

WP n° 8, dicembre 2019

"LIKE A VIRGIN". CORRELATES OF VIRGINITY AMONG ITALIAN UNIVERSITY STUDENTS

Manuela Stranges

*University of Calabria, Department of Economics, Statistics and Finance "Giovanni Anania" – DESF
(e-mail: manuela.stranges@unical.it)*

Daniele Vignoli

*University of Florence, Department of Statistics, Informatics, Applications "G. Parenti"
(e-mail: daniele.vignoli@unifi.it)*

Info

Via Pietro Bucci, Cubo 0/C
87036 Rende (Cs) - Italia
tel. (+39) 0984 492434 / 492422

<http://www.unical.it/desf>



“Like a virgin”.

Correlates of Virginity among Italian University Students

Manuela Stranges* & Daniele Vignoli^{†2}

Abstract

In this paper we describe the correlates of virginity in Italy. We use a dataset of students enrolled in bachelor programs of Economics and Statistics stemming from the SELFY survey, conducted in Italy in 2001 and 2017. Descriptive results show a reduction of students, both males and females, which are virgin at the time of the interview between 2001 and 2017. Regression analyses suggest that self-esteem and own body image, the relationship with parents (in particular the mother), and religion exert the strongest correlation with virginity. Models augmented with interaction terms between time and religion variables show that the relationship between religion and virginity has weakened over time. Our results also show that the participation in religious groups is more important than the importance attributed to religion in favouring being virgin. In all, our findings extend research on sexuality among Italian young adults and underscore the important variability that exist in the sexual experiences of students as highlighted by the salience of a multitude of individual, familial, interpersonal, and community-level factors associated with their virginity.

Keywords virginity status, correlates, Italy, religion.

JEL classification codes: J10, J13, J19

* **Corresponding author.** Department of Economics, Statistics and Finance “Giovanni Anania”, University of Calabria, manuela.stranges@unical.it

[†] Department of Statistics, Informatics, Applications “G. Parenti”, University of Florence, daniele.vignoli@unifi.it

1. Introduction

Modernization, secularization, more relaxed social norms, and a greater equality among genders have generated important changes in sexual and affective behaviours in contemporary societies. Such changes are especially relevant when they affect the first stages of the process of building one's own social and relational identity (Rosina 2004). Although rarely mentioned and analysed, the onset of the transition to adulthood starts with first sexual experiences during adolescence, particularly in relation to increasing independence, responsibility, and management of at-risk behaviours. In particular, the virginity loss symbolises a life-changing event not only in historical, but also in contemporary societies (Landor & Simons 2019) as the prevalence and correlates of virginity status among young adults is closely connected to their social and family life (Humphreys 2013). This paper aims to depict the socio-demographic profiles of virginity among a specific target of youths in Italy – i.e. the group of university students.

The first years of tertiary education represents a crucial stepping stone for young Italian people. For many, this is the first time that they are away from home, and they might engage for the first time in casual sex, unprotected sex, or risky behaviours (Rosina & Rivellini 2004; La Mendola & Tinto 2004; Bernardi & Mencarini 2004). Past research on the sexuality of Italian university students has focused exclusively on issues related to first sexual experience or being sexually active (Dalla Zuanna & Crisafulli 2004; Ongaro 2004; Castiglioni 2004; Billari & Ongaro 2004; Dalla Zuanna & Mancin 2004; Caltabiano et al. 2004).

The characteristics that predict virginity among Italian young adults may be consistent with factors that contribute to their sexual activity, but such factors are not inevitably the converse of these previously identified factors, and may vary (e.g., Landor & Simons 2019). No attention has been paid so far on variation in factors associated with virginity status among young adults in Italy. This paper aims to fill this gap by asking: (i) What are the socio-demographic profiles of Italians who are virgin in their young adulthood? and (ii) Have these profiles changed over the last couple of decades?.

University students are ideal to address these research questions because they are provided with many opportunities for social interaction with peers to form relationships and have sex (Di Mauro 2008). Hence, it appears particularly interesting to uncover what factors affect their virginity status. The results of this study could increase our understanding of sexual development among Italian young adults and highlight the heterogeneity of the virgin – minority – group.

In line with most sex literature, we define virginity by referring to individuals who have never engaged in vaginal-penile intercourse³ (e.g. Humphreys 2013; Landor & Simons 2019). The empirical analysis is based on data from the SELFY (Sexual and Emotional LiFe of Youths) survey, which provides information on the sexual and emotional behaviour of about 8,000 Italian university students in 2017 and about 5,000 in 2000-01 (hereafter, 2001) across all Italian regions (Dalla Zuanna et al. 2019). The full comparability between the two surveys allows to pinpoint changes over time in the prevalence and correlates of virginity.

From the analytical point of view, this paper follows a descriptive approach. First, we aim to evaluate the relationship between different covariates offered by SELFY data and the virginity status. Second, building upon these results, we assess the change over time in the relationship between religiosity and virginity. To the best of our knowledge, no prior study on the correlates of virginity exists for Italy. A descriptive study is a necessary first step for further analyses.

The paper is structured as follows: in section 2, we review the literature on the correlates of virginity with a focus on the peculiarity of the Italian context characterized by a strong influence of religion on sexuality. In Section 3, we describe data and methods. Section 4 is devoted to the presentation and discussion of the empirical results. Concluding remarks follow in Section 5.

2. Background

2.1 Correlates of Virginity: Literature Review

Most of the research on sexual intercourse has focused on the timing of sexual debut and its subsequent outcomes. Nonetheless, “*persons who defy the odds and delay sexual debut beyond adolescence represent an interesting minority group*” (Halpern et al. 2006: 926.e2). From the limited empirical works available in psychology and sociology on the correlates of virginity, the importance of individual-, family-, interpersonal-, and community-level factors is suggested. Most of these studies use adolescent or student samples.

³ In our dataset we have also a few cases of youths who declare themselves to be homosexual (220 equal to 1.77% of the total sample). We have decided to keep these observations in the sample first of all because they are very few and secondly because we have assumed that correlates of virginity may be similar for heterosexual and homosexual youths. As a check, we have deleted these few observations and we find no changes in the main estimations.

The gendered pattern of virginity loss has been emphasized largely (Trapnell et al. 1994, Shechterman & Hutchinson 1991). Men and women have traditionally followed different guidelines for sexual behaviour (Giordano et al., 2006; Peplau 2003; Collins 2000; Sprecher & Regan 1996; Crawford & Popp 2003). The gendered nature of virginity has been discussed by Holland et al. (2000), who highlighted that first intercourse represents an empowering moment for young men that settles their identity, whereas for young women is more ambivalent and cautiously faced⁴. Following these advises, we opted for segmenting the analysis by gender.

Recent studies on the relationship between sexual debut and birth order have shown that laterborns are more likely to engage in sexual activity (Argys et al. 2006), and report earlier initiation into sexual activity (Dixon 1980; Rodgers et al. 1992). This may be related to the fact that middleborns and lastborns employ different personality strategies as an attempt to garner parental attention and this may affect their sexual strategies (Michalski & Shackelford 2002). In addition, the sexual behavior and attitudes of older siblings may shape the behavior of their younger siblings (Argys et al. 2006), also leading to an earlier sexual debut.

Family structure (e.g., being in a two-parent household) as well as high parental quality were suggested to increase the likelihood of sexual abstinence among adolescents (Miller et al. 2001). More recently, significant associations among familial-level factors (family structure and parental quality) and virginity were found among African American young adults (Landor & Simons 2019). They suggest that family still exerts an important influence on sexuality even into young adulthood in their studied sample. A study conducted for the Republic of Iran suggests that abstinence until marriage is more likely to be practiced among adolescents who live in traditional families, where mothers were not employed or where students received lower daily allowances (Mohtasham et al 2009). More specifically, parental communication is a known protective factor with respect to early – eventually unprotected – sexual intercourse (Karofsky et al. 2000; Miller et al. 1998; Vazsonyi & Jenkins 2010).

A significant association between having friends with limited social activities and virginity was suggested by previous studies (Jaccard et al. 2005; Landor & Simons 2019), in the sense that having friends with an active social life was associated with lower odds of being a virgin. Additional research suggests that men receive more pressure from peers to engage in sexual activity than women do (Guggino & Ponzetti, 1997). Bozon & Rault (2013,

⁴ For a review of the studies on gender differences toward different aspects of sexuality, see Peterson & Hyde (2011, 2010).

2012), analysing data about France find that nightclubs and discotheques have grown in popularity as places where people find their first life partner and, among the less educated, also as place where they have their first sexual intercourse. Analogously, Kabiru & Orpinas (2009), focusing on students in Kenya, find that going to discos was associated (as well as other factors) with an higher likelihood of sexual experience for both males and females. For Norway, Gravningen et al. (2012) find that one-fourth of participants to their cross-sectional study among high school students in five towns in Finnmark met last sex partner at a private party, bar or disco (23% of female and 25% of male students).

A large body of research has documented that physically attractive males were more likely to become sexually active earlier and had more sexual partners (Rhodes et al. 2005). Weeden & Sabini (2007) find that self-rated attractiveness correlated positively with sexual behaviours and with sociosexuality. Self-confidence is strongly related to physical characteristics. In this vein, the Body Mass Index (BMI hereafter)⁵ has been found to be strongly related with body attractiveness in the low end of the “normal” range (which are values between 18.5 and 24.9 for generic adults) for women and in the high end of the “normal” range for men (Weeden & Sabini 2007, 2005). Other factors, such as acne or skin problems, may be responsible for depression and low self-esteem of youths, and this negative impact is worsened by the sociological evolution of adolescents in the 21st century (Revol et al. 2015). Skin problems may negatively affect youths’ sexual life (Parker et al. 2010)⁶.

Because sexual abstinence can be presumed to be largely involuntary, sexual inactivity has been customarily correlated with poorer mental health (Dunn et al. 1999; Rosen et al. 2009; Shifren et al 2008). Nonetheless, a recent study by Kim et al. (2017) suggest that sexually inactive people were no less happy than their sexually active counterparts. This finding challenges the perception transmitted by popular media that the absence of partnered sexual activity commonly results in poorer happiness levels.

Decades of research document the influence of religious beliefs and degree of religiosity on sexual activity among young people (Sheeran et al. 1993, Trapnell et al. 1994). In particular, the role of religiosity in facilitating virginity status among adolescents and young adults have been extensively proved (e.g., Rew & Wong 2006; Bersamin et al. 2006; Brewster & Tillman 2008; Lammers et al. 2000; Paul et al. 2000; Regnerus 2007; Rostosky et

⁵ For most adults, the ideal BMI ranges between 18.5 and 24.9. If BMI is below 18.5, it is typically classified as underweight; between 18.5 and 24.9 it is classified as healthy weight range; between 25 and 29.9 it is classified as overweight; between 30 and 39.9 it is considered in the obese range.

⁶ For a review of the literature about the relationship between skin problems and sexuality, see Magin et al. 2010.

al. 2003). For instance, a study among Croatian college students found that religiosity was related to decreased odds of sexual debut among women (Štulhofer et al. 2010). And even very recently, Landor and Simons (2019) find that especially religious males had a greater likelihood of being virgins.

2.2 The role of religion and religiosity in Italy

The literature review outlined so far summarizes prior research results that may serve as a background to interpret the findings also for the Italian context. All the research conducted for Italy focus on the first sexual intercourse of youths (see, e.g., Caltabiano et al. 2006; Castiglioni 2004; Billari & Borgoni 2002), often trying to investigate the timing and correlates of the sexual debut, while nothing is said about the correlates of virginity, which represent a distinct phenomenon in itself. With this paper we aim to fill this gap. In our statistical analysis, we therefore consider all the variables which have proved to be related to virginity from the literature review, although with the limits posed by the variables available in the SELFY dataset. Given the descriptive nature of this study, we deliberately abstain from formulating specific research hypotheses.

Nonetheless, there is a peculiarity of the Italian setting that deserves special attention. The delay in sexual changes in Italy is the result also of the influence of the Catholic Church, which has maintained a strong presence in the socialization of young people and this is more marked than in other European contexts (Caltabiano et al. 2006; Vignoli & Salvini 2014). Nonetheless, sexual opinions, attitudes, and behaviours of Italians have changed radically over the last decades, especially in the north of Italy (Billari et al. 2007; Billari & Ongaro 2004; Caltabiano 2006; Dalla Zuanna et al. 2019).

Among other things, sexuality has become increasingly separated from reproduction, with sexual pleasure gaining central relevance in the lives of both singles and couples (Barbagli et al. 2010). For the country, the relationship between religiosity and sexuality has been analysed in many papers (see e.g., Barbagli et al. 2010; Caltabiano et al. 2006; Dalla Zuanna et al., 2005), and most of these papers underlined a relatively flexible attitudes of Italians towards sexuality with respect to Catholic doctrine (Vignoli & Salvini 2014). The linkages between virginity and religiosity remains, however, still unexplored.

3. Data and methods

3.1. Data: the *SELFY* surveys

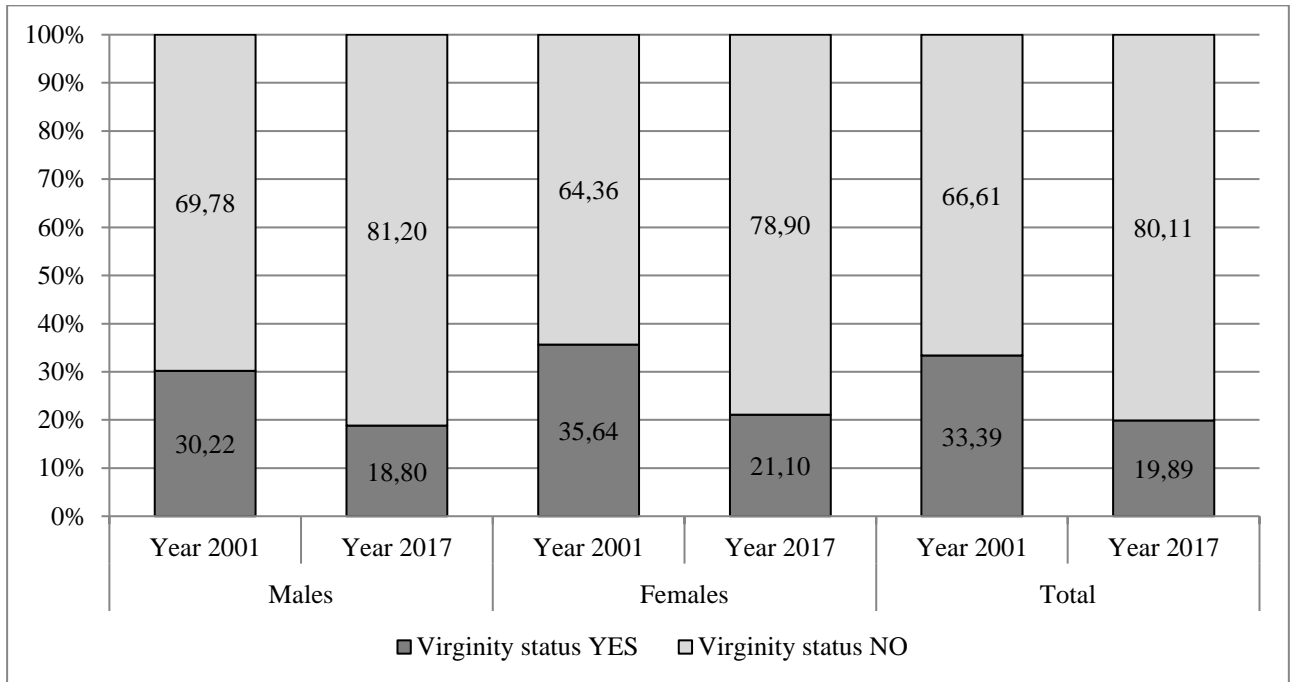
We examine data from the 2001 and 2017 editions of the *SELFY* survey. Students in bachelor programs of Economics and Statistics were surveyed using the same national sampling procedure and the same data collection technique – a self-completed questionnaire filled out in the classroom during lesson lectures under the discreet surveillance of both the professor and the researcher (Dalla-Zuanna & Crisafulli 2004; Caltabiano et al. 2006; Billari et al. 2007). University students have been often considered good subjects for research on sexuality, as they are very diverse with respect to sexual and affective attitudes, opinions, and behaviours (see, e.g., Keller 1959; Pitts and Rahman 2001; Weeden and Sabini 2007; Hines 2007; Billari et al. 2007; Stinson 2010).

After excluding some incomplete questionnaires and questionnaires filled out jokingly, the *SELFY* dataset includes 4,762 questionnaires for 2001 and 7,842 for 2017. For both years, the data were post-stratified at the macro-region level to obtain representative results at the national level. For our analysis, we have excluded some observation due to some missing values randomly distributed among the variables considered in the analysis (listed and described in the next paragraph). Our final sample is composed of 12,400 students (5,979 male and 6,421 female students).

Complete descriptives for males and females are reported in the appendix. About our variable of interest, 3,104 students declared they never had a sexual intercourse, 1,352 males (22.61% of total male students) and 1,752 females (27.29% of total female students). The students interviewed are on average 21,08 years old (21,12 among males and 21,04 among females). 35,59% of students are born in a region in the North of Italy (37.2% for males and 35.11% for females), 26,14 in the Centre (26.54% for male and 25,76 for female) and 38,27% in the South (36.26% for males and 40.13% for females).

Figure 1 shows the distribution of virginity by gender and year. We notice important changes over time. Considering both genders together, while in 2001 over one third of the sample never had a sexual intercourse, in 2017 the percentage of those declaring to be virgin is less than 20%. It can be noticed that the virginity has a lower incidence in 2017 than in 2001 for both males and female. In particular, among males the virgins were 30.22% in 2001 sample and 18.80% in 2017. While, among females, the virgins were 35.64% in 2001 and 21.20% in 2017. Values for female are always higher than males.

Figure 1. Distribution of virginity by gender and year



3.2. Method

The present study scrutinises the correlates of virginity among Italian university students through a logistic regression:

$$\log\left(\frac{p}{1-p}\right) = \beta_0 + \beta_1 X_i + \beta_2 year2017 \quad [1]$$

where the dependent variable “*Virginitiy status*” is assessed through a question asking the respondent whether he/she had or had not a complete sexual intercourse. We coded it as a dummy, assuming value 1 if the respondent never had a complete sexual intercourse (and 0 otherwise). X_i is a vector of covariates (which are listed in details below) and, due to the pooled nature of the dataset, we also add a dummy variable for year 2017.

At individual level, as demographic correlates we have included age⁷ and being first born⁸. To account for the family background we include mother’s and father’s education

⁷ We have not included the square term in the final models because the relationship between virginity and age is clearly linear. Moreover, the age interval is very short (from 18 to 26 years). As a proof, we have run a preliminary model including both terms and there was to change in sign (and the square term was not significant).

⁸ We have also tried another specification to take into account the birth order and the number of siblings. We build three dummies: firstborn (of more siblings), laterborn or only child. No one of these variables proved to

(coded as number of years starting from the highest level of education achieved)⁹, and a dummy for parents being separated at the time of the interview. From the question about the affective relationship with relatives between 14 and 18 years, we build two dummies for “having a balanced or intense relationship” separately for mother and father (versus having a distant relationship or having it not at all). Finally, we included three dummies for having talked in depth with parents about (i) sexual development, (ii) sexual diseases and (iii) contraception.

We included in the model equation the BMI as a proxy of attractiveness, and its square term to account for overweight, which may have an opposite effect on sexual debut. We also account for having had at least one physical problem (including halitosis, excessive sweating and severe acne) between the 14 and 18 years. Next to these covariates the model includes the satisfaction with his/her own body image nowadays¹⁰. In order to test the literature findings about the relationship between sexuality and subjective wellbeing, we include a dummy for depression, starting from the question “*How much do you agree with the sentence «Sometimes I have the impression to live with no scope?»*” and coding it as 1 for those who answer quite agree or fully agree.

Other additional covariates are “having attended the disco often or very often (versus never or sometimes) between 14 and 18 years” and being an “off-site” student. We have included this dummy because we wanted to test whether living outside the social context may somehow affect students’ sexual debut. For instance, those moving from the southern regions to the northern to attend university, come from a more traditional social context and get in touch with a more open minded contexts.

Given the strong relationship between religiosity and sexuality in Italy, we included two variables about religiosity: the first one is a dummy obtained from the question “*How important is religion in life?*” coded as 1 if the answer in “quite” or “very important”; the second one is a dummy about current participation in religious groups¹¹, assuming value 1 if the answer is “sometimes”, “often” or “very often” (versus rarely or never).

Finally, we included covariates for area of birth (Centre and South, with North as reference), to account for the fact that the Southern region have a more traditional social

have a significant relationship with virginity, so we have kept only the variable about birth order in the main models. Results are available upon request to the authors.

⁹ We have tried other specifications, using levels of schooling instead of years of education, obtaining similar results.

¹⁰ A dummy equal to 1 if the respondent declares to be quite or fully satisfied of his/her own current body image.

¹¹ The survey contains information also about the participation in religious groups in the past, that are highly related to the current participation so were omitted to avoid problem of collinearity.

context, while the Northern are more open minded (Caltabiano et al. 2006). The area of origin may be a very important determinant of sexual behaviours, particularly for females (Billari & Borgoni 2002).

We have run separate models for male and female students¹². After presenting the main results, we test for changes in relationship between each covariate and the virginity status over time by estimating interactions between all the covariates associated with virginity and the year of the survey. We especially focused on the role of religion, as it shows a clear and statistically significant pattern of change over time. All models were estimated with robust standard errors.

4. Results

4.1. Main models

Table 1 illustrates the results of main models run separately for male and female students. Covariates are grouped by categories according to the literature review, but have been considered in the model all together. Our aim at this stage is purely descriptive: Since this is the first study about virginity in Italy, we are interest in uncovering sign and magnitude of each correlate net to all the others, and not to disentangle specific mechanisms.

Age is negatively related to virginity both for male and female students: growing older reduces the probability of being virgin. Being first born is not significant. If we turn to the analysis of self-esteem and own body image, we find that BMI and its square are significant for male, denoting a negative relation with virginity as BMI grows (from underweight to ideal weight), but the relationship is not linear and became positive with the square term (so the relationship with virginity is positive as BMI moves from regular weight to overweight). Virginity status is strongly related to having had some physical problems between 14 and 18 years (at least one between halitosis, excessive sweating and severe acne). For both male and female students, the coefficient of this covariate is highly statistically significant; this result is in line with the literature. Satisfaction with body image is negatively related with virginity, although significant only for males. The relationship between depression and virginity is positive and highly statistically significant both for male and female students.

¹² Due the well-known differences in sexuality between males and female, separate analyses for males and females should be carried out (Caltabiano et al. 2006). Many studies have also shown that the relationship between sex and religion may be gender-specific (Caltabiano et al, 2006; Meier 2003; Rostosky et al. 2003).

Table 1. Correlates of virginity status among Italian students, odds ratios.

	(1)	(2)
	Males	Females
Individual characteristics		
Age	0.717***	0.766***
	(0.020)	(0.018)
First born	1.096	1.014
	(0.075)	(0.062)
Self-esteem and own body image		
Satisfaction about own body image nowadays	0.618***	0.935
	(0.053)	(0.064)
BMI	0.694***	1.051
	(0.078)	(0.087)
BMI ²	1.007***	1.001
	(0.002)	(0.002)
Having had at least one physical problem between the 14 and 18 years, including halitosis, excessive sweating and severe acne	1.227***	1.229***
	(0.089)	(0.082)
Depression	1.335***	1.313***
	(0.096)	(0.084)
Parents		
Father's education (number of years)	1.006	0.999
	(0.012)	(0.010)
Mother's education (number of years)	0.964***	0.987
	(0.011)	(0.01)
Parents separated or divorced	0.778**	0.699***
	(0.090)	(0.085)
Balanced or intense relationship with the father	0.806**	1.270***
	(0.071)	(0.098)
Balanced or intense relationship with the mother	1.399***	1.244**
	(0.178)	(0.125)
Have talked in depth to parents about sexual development	1.202	1.007
	(0.145)	(0.087)
Have talked in depth to parents about sexual diseases	0.838	1.040
	(0.100)	(0.105)
Have talked in depth to parents about contraception	0.609***	0.574***
	(0.076)	(0.061)
Socialization		
Attended the disco often or very often (versus never or sometimes) between 14 and 18 years	0.302***	0.475***
	(0.022)	(0.032)
Off-site student	0.939	1.036
	(0.077)	(0.082)
Religion		
Opinion about the importance of religion in life (=1 if quite or very important)	1.442***	1.449***
	(0.106)	(0.101)
Participation in religious groups	1.804***	1.518***
	(0.175)	(0.114)
Other covariates		
Area of birth: Centre Italy (<i>ref. North Italy</i>)	0.956	0.868*
	(0.081)	(0.071)

Area of birth: South Italy	0.678***	0.967
	(0.055)	(0.071)
Year 2017	0.651***	0.462***
	(0.055)	(0.036)
N	5,979	6,421
Pseudo R-sq	0.134	0.108

Notes: The Table reports odds ratios of logit models' estimates based SELFY data (cumulative dataset 2001 and 2017). The dependent variable is "Virgin status". Robust standard errors (corrected for heteroskedasticity) are reported in parentheses. The symbols ***, **, * indicate that coefficients are statistically significant, respectively, at the 1, 5, and 10 percent level, respectively.

Turning to variables about parents, we find that only mother's education in the male students' sample is significant, and it is negatively related to virginity: as the mother's years of education increase, the probability of being virgin decreases. For females the relationship is negative as well, but it is (slightly) not significant at the conventional threshold. The coefficient for father's education is not significant for both samples. Having separated parents is related to a lower probability of being virgin, both for male than for female students in the sample. About the affective relationship with parents, we find contrasting results for the two genders about the relationship with the father: for males it is negatively related to the virginity status, while for the females it is positively related. The balanced or intense affective relationship with the mother is positively related to virginity for both genders, showing that those who have a stronger affective relationship with their mother have an higher probability of not having experienced a first sexual intercourse. About the three variables aiming to evaluate if the students had a dialogue with parents about some important issues related to sexuality, the only significant variable is having talked in depth about contraception, which is negatively related to virginity. Although we are not able to assess the causality or the direction of this correlation, it seems plausible that they start talking of contraception with their parents when they decide or they already had a sexual intercourse.

The variable about having attended the disco often or very often (versus never or sometimes) between 14 and 18 years is significant and negatively related to the virginity status for both genders. Being an off-site student is not significant, although it may be noted that it has a negative relation with virginity for males and a positive relationship for females.

Both variables about religion are highly statistically significant and strongly related with the virginity status. For males, thinking that religion is quite or very important in life is related to an increase of 44.2% in the probability of being virgin, while current participation to religious groups is related to an increase of 80.4%. For females, the probability of being virgin are 44.9% and 51.8% higher, respectively for those who think that religion is important

and for those who participate to religious groups. These results confirm that religion is strongly correlated with sexuality, as well assessed in literature (for Italy see, e.g. Barbagli et al. 2010; Caltabiano et al. 2006; Dalla Zuanna et al. 2005).

Importantly, we find that those who are born in the Centre and in the South have a lower probability to be virgin than those who are born in the North, although only the coefficient for South is significant for males and that for Centre is significant for females. Corroborating descriptive figures, those interviewed in 2017 have a probability of being virgin 34.64% and 53.84% lower, respectively in the male and in the female sample, than those interviewed in 2001.

4.2. A focus on the change of the relationship between religion and virginity over time

To assess the changes over time in the correlates of virginity, we have run several additional models introducing interaction terms between each covariate and year 2017. We generally find no statistically significant differences between the two time points¹³. On the contrary, for the two variables related to religiosity (importance of religion in life and participation in religious group) we find a significant change over time.

Preliminarily, let us observe how both the variables have changed from 2001 to 2017 (Figure 2). There has been a dramatic decrease of those who declare that religion is quite or very important in their life (Figure 2a) and, of course, a parallel increase of those declaring that it is not important, for both genders and for both condition of virginity status. The percentage of those declaring that religion is important in life is lower for those who are not virgin, both for male and female students and in both the time points.

An analogous pattern may be found for participation in religious groups (Figure 2b): a decrease in participation of those who participate for both genders and for both virginity status and, generally, a lower participation for those who are not virgin. From these descriptive figures, we note that the strength of the relationship between sex and religion may be gender-specific¹⁴ (Carpenter 2010; Caltabiano et al. 2006; Meier 2003; Rostosky et al. 2003).

These figures illustrate that the association between each of the two religion variables and virginity have changed over the last decades. This is confirmed also by the Chi² value of association between each variable of religiosity and virginity status, which is always higher

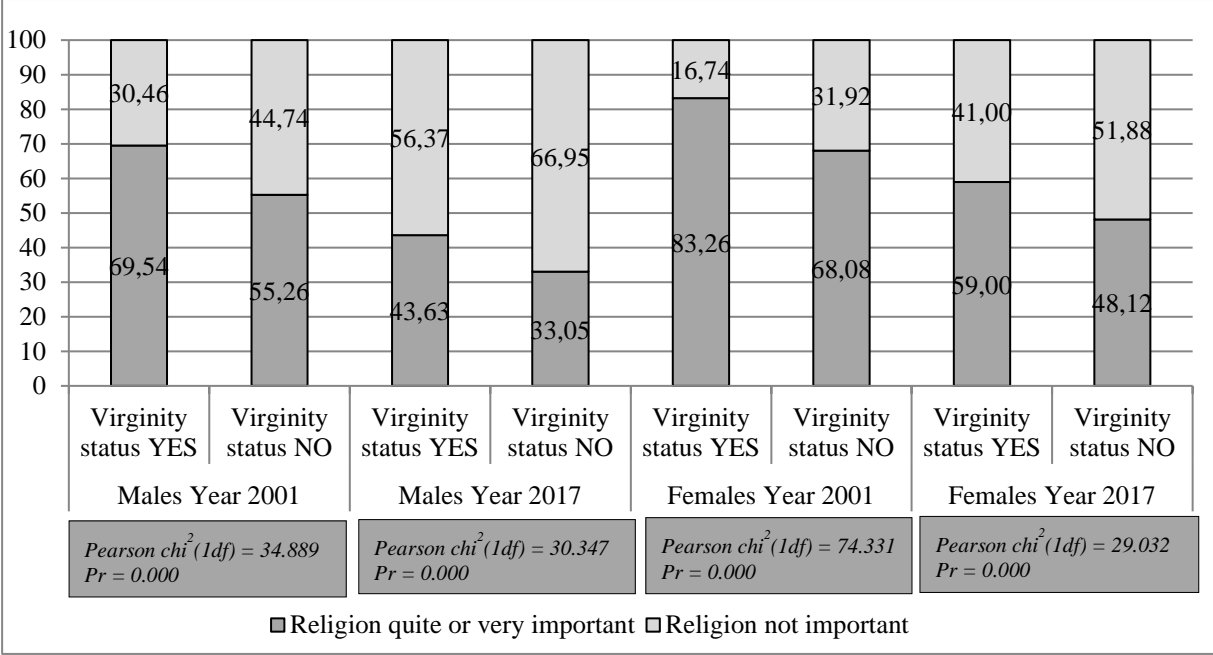
¹³ Results are available upon request to the authors.

¹⁴ For Italy, Castiglioni (2004) suggests that even control factors may have a differentiated impact on gender.

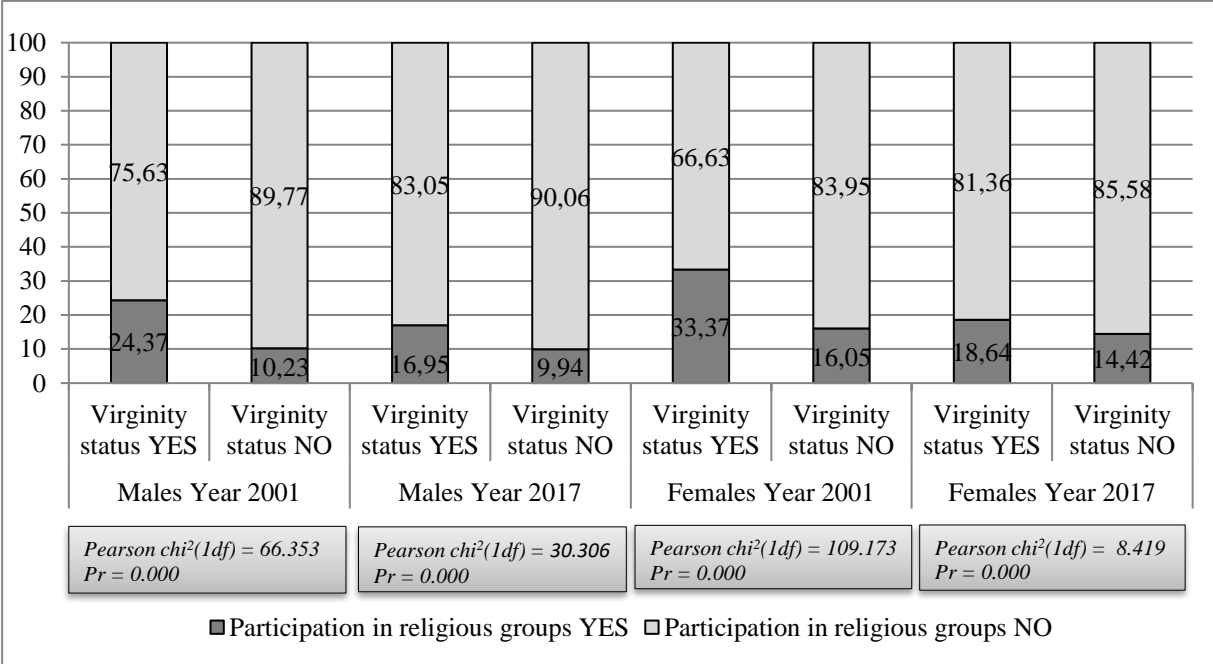
than the 6.63 threshold (at 1 degree of freedom) – i.e. the H_0 hypothesis that results are due to the case can be rejected.

Figure 2. Secularization: changes over time for boys and girls by virginity status

2a. Importance of religion in life



2b. Participation in religious groups



From the main estimations reported in Table 1, we note that religion is strongly related to the virginity status of male and female university students in Italy, but we cannot assess

how this relationship has changed over time. A more precise evaluation of this association may be obtained estimating a set of models augmented by interaction terms between *year2017* and each religious dummies. Interaction terms allow disentangling and interpreting the difference in the effect of each variable across time¹⁵.

Results are reported in Table 2. In this case, the coefficients for “Opinion about the importance of religion in life” and “Participation to religious groups” express the relationship between each of the two variables and the virginity status only in 2001, while the interaction terms express the relationship in 2017 and the net effect must be computed summing the value of the variable and the interaction term.

Table 2. Secularization and virginity status, odds ratios.

	(1)	(2)	(3)	(4)
	Males	Females	Males	Females
Year 2017	0.721***	0.646***	0.693***	0.548***
	(0.085)	(0.078)	(0.063)	(0.046)
Opinion about the importance of religion in life (=1 if quite or very important)	1.616***	1.928***	1.452***	1.495***
	(0.188)	(0.206)	(0.107)	(0.105)
Interaction: Opinion about the importance of religion in life *year 2017	0.832	0.614***		
	(0.119)	(0.083)		
Participation in religious groups	1.811***	1.522***	2.226***	2.169***
	(0.176)	(0.115)	(0.328)	(0.220)
Interaction: Participation in religious groups*year 2017			0.694*	0.444***
			(0.132)	(0.067)
N	5,979	6,421	5,979	6,421
Pseudo R-sq	0.135	0.110	0.135	0.112

Notes: The Table reports odds ratios of logit models’ estimates based SELFY data (cumulative dataset 2000 and 2017). The dependent variable is “Virginity status”. Robust standard errors (corrected for heteroskedasticity) are reported in parentheses. All models control also for all the variables included in main model (see Table 1), not reported. The symbols ***, **, * indicate that coefficients are statistically significant, respectively, at the 1, 5, and 10 percent level, respectively.

¹⁵ The results of an Hausman test conducted on separate models for year 2001 and 2017 (for each gender separately), show that for male we cannot reject the hypothesis that the coefficients for opinion about religion in 2001 and opinion about religion in 2017 are the same both (chi2(1)=0.33, Prob > chi2 =0.566), while for females the difference between 2001 and 2017 is significant, although at 10% level (chi2(1) = 3.20, Prob > chi2 =0.074). The same test conducted for participation in religious groups shows that for male we can reject the hypothesis that the coefficients for opinion about religion in 2001 and opinion about religion in 2017 are the same both although at the highest threshold of significance (chi2(1)=2.93, Prob > chi2 =0.087), while for females the difference between 2001 and 2017 is significant at the highest level (chi2(1) = 23.20, Prob > chi2 =0.000).

Results for opinion about the importance of religion in life (columns 1 and 2) show that this variable is significant and positively associated with virginity for both males and females for 2001 (the probability of being virgin is 61,6% and 92,8% higher, respectively), while for 2017 there is a reduction of the magnitude of this association. In particular, for males the relationship is not significant any longer in 2017 (indeed, the combination of the two coefficients results in an odds ratio lower than 1). For females, those who declare that religion is quite or very important in life have statistically significant higher probability (31.4%) of being virgin of those who do not declare that it is not important (1.928-0.614, $z=-3.62$, $p<0.000$).

If we turn to the analysis of the association between participation in religious groups and virginity status, we find that for 2001 the odds ratio is 2.226 for males and 2.169 for females, both highly statistically significant. Hence, the probability of being virgin was more than double for those who participated to religious groups.

The interaction terms show a reduction in the magnitude of the coefficients both for males and female students in 2017: for males the odds ratio is 1.533 (2.227-0.694, $z=-1.92$, $p=0.054$), for female it is equal to 1.725 (2.169-0.444, $z= -5.37$, $p<0.000$). The probability of being virgin is around 53 and 73% higher for those who participate to religious groups than those who do not participate. These results confirm and strengthen the previous descriptive findings and clearly show that, although religion is still important in the sexual life of youths in Italy, its importance is weakening over time.

5. Conclusions

Humans' sexuality research has spanned a wide spectrum of bio-medical, socio-medical, and socio-demographic disciplines, but there have been surprisingly few studies exploring the factors associated with the absence of sexual activity (Kim et al. 2017). We did not locate any of such study for Italy. To fill a gap in our understating of Italian young adults' sexuality, the purpose of the current study was to examine the individual, familial, interpersonal, and community-level correlates of virginity among Italian university students.

Several covariates outlined a profile of virgin university students for Italy that accords with prior literature for other countries, for instance with regard to the role of family background. The balanced or intense affective relationship with the mother is positively related to virginity for both genders. These results may be related to the literature which underline that parental communication is a protective factor for maintaining virginity

(Karofsky et al. 2000; Miller et al. 1998; Vazsonyi & Jenkins 2010) and high parental quality increase the likelihood of sexual abstinence among adolescents (Miller et al. 2001). Students who have a more balanced or intense affective relationship are probably those who have a higher level and intensity of communication. In addition, having talked in depth about contraception with parents is negatively related to virginity.

Beside familial correlates, objective measures of attractiveness proved important. In line with literature findings, we found a non-linear association between BMI and virginity. This pattern suggests that as males' BMI grows from underweight to healthy weight, the relationship with virginity is negative, while the relationship is positive as it grows to overweight and obese range. Moving from objective to subjective measures of one's own body, satisfaction with one's own body image is negatively related with virginity, although significant only for males. This is in line with previous findings according to which physically attractive males were more likely to become sexually active earlier (Weeden & Sabini, 2007; Rhodes et al. 2005). The relationship between depression and virginity is positive and highly statistically significant both for male and females, confirming those literature findings (Dunn et al. 1999; Rosen et al. 2009; Shifren et al 2008) outlining a relationship between sexual inactivity and poorer mental health. On the contrary, our study contrasts the recent paper by Kim and colleagues (2017), who suggest that sexually inactive people are no less happy than their sexually active counterparts.

Socialization is also pivotal for defining the profiles of virgin students. Both male and female students who have attended the disco often or very often are remarkably less likely to be virgin. These results are coherent with previous empirical findings according to which attending socialization places such as discos and night clubs is related to an higher likelihood of sexual experience for both males and females (Bozon & Rault 2013, 2012; Gravningen et al. 2012; Kabiru & Orpinas, 2009).

Other results add specific characteristics that make the profiles of virgin university students in Italy quite country-specific. The findings of the present study, in fact, recall the attention to two crucial characteristics of the Italian society, the regional divide and the role of religiosity. Being born in the South for male students and Centre for female students, compared with being born in the North of Italy, are significant, both negatively related to virginity. To exploit these results further, we have run regressions splitting the sample by year. Results (not shown, but available upon request to the author) show that in 2001, although none of the variable is significant, the association between area of origin and virginity had a different direction. In particular, for males being born in the South still shows

a negative relation with virginity while being born in the Centre shows a positive association. For females, being born in the Centre shows a negative association, while being born in the South shows a positive relation. Models for 2017 show the same pattern of the main models on the pooled dataset (being born in the South for males and Centre for female, compared with being born in the North of Italy, are negatively related to virginity), but with all the coefficients significant except Centre for males. The results obtained for females may suggest a reduction of the social distance between North and South of Italy in terms of sexuality.

Regarding the important role of religiosity in the Italian context, Dalla Zuanna & Mancin (2004) concluded that postponed sexual debut of Italian youth, if compared to youth in other Western countries, could be explained – at least partly – in the peculiarity and emotional closeness of family ties and in the significant role played by the Catholic religion. Two decades later, our results show that, although religion still has a strong association with sexuality of youths in Italy, the strength of this association is weakening over time. Moreover, these results show that the active participation in religious groups is more influent than the opinion about the importance of religion in life. Modernization and secularization lead to deep changes in sexual and affective behaviours of post-industrial societies. Along these lines, the present study point to a loss of the influence of religion in shaping sexual behaviours of young Italians.

To conclude, it is worth recalling that the present study is, by its very nature, descriptive. Our goal in this paper was to describe the socio-demographic profiles of virgin Italian university students, and not to infer about causation. In addition, our sample is not, of course, representative of the population of young Italians as a whole. The sexuality of our sample of university students seems to be delayed and to be less intense than that of their less educated peers. In addition, it is in line with, or only slightly delayed and less intense than, that of university students in other fields of study (for details see: Dalla-Zuanna et al. 2019). Nonetheless, our findings extend research on sexuality among Italian young adults and underscore the important variability that exist in the sexual experiences of Italian students as highlighted by the salience of a multitude of individual, familial, interpersonal, and community-level factors associated with their virginity.

References

- Argys, L. M., Rees, D. I., Averett, S. L., & Witoonchart, B. (2006). Birth Order and Sexual Behavior. *Economic Inquiry* 44(2):215-233.
- Barbagli, M., Dalla Zuanna, G., & Garelli, F. (2010). *La sessualità degli italiani*. Bologna: Il Mulino.
- Bernardi, L., & Mencarini, L. (2004), Italian Young People Facing AIDS Risk: Knowledge, Risk Perception and Sexual Behaviour, in Dalla Zuanna & C. Crisafulli (Eds.), *Sexual behaviour of Italian Students. An international comparison* (pp. 126-134). Messina: Department of Statistics, University of Messina.
- Bersamin, M. M., Walker, S., Fisher, D. A., & Grube, J. W. (2006). Correlates of oral sex and vaginal intercourse in early and middle adolescence. *Journal of Research on Adolescence* 16(1):59–68.
- Billari, F.C., Caltabiano, M., & Dalla Zuanna, G. (2007). The Heirs of the Sexual Revolution. In F.C. Billari, M. Caltabiano, & G. Dalla Zuanna (Eds.), *Sexual and affective behaviour of students. An international comparison* (pp. 1-46). Padova: Cleup.
- Billari, F.C., & Ongaro, F. (2004). First stages in partnership history and in sexual experiences. In G. Dalla Zuanna & C. Crisafulli (Eds.), *Sexual behaviour of Italian Students. An international comparison* (pp. 107-124). Messina: Department of Statistics, University of Messina.
- Billari, F.C., & Borgoni R. (2002). Spatial profile in the analysis of event histories: an application to first sexual intercourse in Italy, *International Journal of Population Geography*, 8, 261-275.
- Bozon, M., & Rault, W. (2013). Where do people meet their first sexual partner and their first life partner?, *Population Societies*, Number 496, January 2013.
- Bozon, M., & Rault, W. (2012). From Sexual Debut to First Union. Where Do Young People in France Meet Their First Partners?, *Population*, 67(3): 377 – 410.
- Brewster, K. L., & Tillman K. H. (2008). Who’s doing it?: Patterns and predictors of youths’ oral sexual experiences. *Journal of Adolescent Health* 42(1):73–80.
- Caltabiano, M. (2006). The first romantic relationship of adolescents: A comparative analysis. *Genus*, 61(2), 141-160.
- Caltabiano, M., Dalla Zuanna, G., & Rosina, A. (2006). Interdependence between sexual debut and church attendance in Italy. *Demographic Research*, 14(19), 453-484.
<http://www.demographic-research.org/Volumes/Vol14/19/> DOI:
10.4054/DemRes.2006.14.19

- Caltabiano, M., Castiglioni, M., & Dalla Zuanna, G. (2004). Current sexual behaviour. In: G. Dalla Zuanna & C. Crisafulli (Eds.), *Sexual behaviour of Italian Students. An international comparison* (pp. 135-157). Messina: Department of Statistics, University of Messina.
- Carpenter, L.M. (2010). Gendered sexuality over the life course: A conceptual framework. *Sociological Perspectives*, 53(2), 155-177.
- Castiglioni, M. (2004). First sexual intercourse and contraceptive use in Italy. In G. Dalla Zuanna & C. Crisafulli (Eds.), *Sexual behaviour of Italian Students. An international comparison*. Messina: Department of Statistics, University of Messina.
- Crawford, M., & Popp, D. (2003). Sexual double standards: A review and methodological critique of two decades of research. *The Journal of Sex Research*, 40(1), 13-26.
- Collins, A. (2000). Surrender value of capital assets: The economics of strategic virginity loss. *Journal of Bioeconomics*, 2(3), 193-201.
- Dalla Zuanna, G., De Rose, A., & Racioppi, F. (2005). Low fertility and limited diffusion of modern contraception in Italy during the second half of the twentieth Century. *Journal of Population Research* 22(1): 21–48. doi:10.1007/ BF03031802
- Dalla Zuanna, G., & Crisafulli C. (2004). *Sexual behaviour of Italian Students. An international comparison* (Eds.) Messina: Department of Statistics, University of Messina.
- Dalla Zuanna, G., & Mancin, M. (2004). Determinants of age at first sexual intercourse. In G. Dalla Zuanna & C. Crisafulli (Eds.), *Sexual behaviour of Italian Students. An international comparison* (pp. 126-134). Messina: Department of Statistics, University of Messina.
- Dalla Zuanna, G., Caltabiano, M.C., Minello, A., & Vignoli, D. (2019). Catching up! The sexual opinions and behaviour of Italian students (2000-2017). DiSIA Working Paper 2019/02.
- Di Mauro, D. (2008). Reluctant virginity: The relationship between sexual status and self-esteem. *Theses and Dissertations*, 717.
- Dixon, R. D. (1980). The Absence of Birth Order Correlations among Unwed and Married Black First-Conceptors. *The Journal of Sex Research*, 16(3):238-244.
- Dunn, K.M., Croft, P.R., & Hackett, G.I. (1999). Association of sexual problems with social, psychological, and physical problems in men and women: A cross sectional population survey. *Journal of Epidemiology and Community Health*. 53:144–148.

- Giordano, P.C., Longmore, M.A., & Manning, W.D. (2006). Gender and the meanings of adolescent romantic relationships: A focus on boys. *American Sociological Review*, 71(2), 260-287.
- Gravningen, K., Furberg, A.-S., Simonsen, G. S., & Wilsgaard, T. (2012). Early sexual behaviour and Chlamydia trachomatis infection – a population based cross-sectional study on gender differences among adolescents in Norway, *BMC Infectious Diseases*, 12:319, <http://www.biomedcentral.com/1471-2334/12/319>
- Guggino, J. M., & Ponzetti, J. J. (1997). Gender differences in affective reactions to first coitus. *Journal of Adolescence*, 20: 189–200.
- Halpern, C. T., Waller, M. W., Spriggs, A., & Hallfors, D. D. (2006). Adolescent predictors of emerging adult sexual patterns. *Journal of Adolescent Health*, 39(6): 926-e1-e10.
- Hines, D.A. (2007). Predictors of sexual coercion against women and men: A multilevel, multinational study of university students. *Archives of Sexual Behavior*, 36(3), 403-422.
- Holland, J., Ramazanoglu, C., Sharpe, S., & Thomson, R. (2000). Deconstructing virginity - young people's accounts of first sex. *Sexual and Relationship Therapy*, 15(3), 221-232.
- Humphreys, T. (2013). Cognitive frameworks of virginity and first intercourse. *Journal of Sex Research*, 50(7), 664-675.
- Jaccard, J., Blanton, H., & Dodge T. (2005). Peer Influences on Risk Behavior: An Analysis of the Effects of a Close Friend. *Developmental Psychology*, 41(1): 135–147.
- Kabiru, C. W., & Orpinas, P. (2009). Factors associated with sexual activity among high-school students in Nairobi, Kenya. *Journal of Adolescence* 32 (2009) 1023e-1039.
- Karofsky, P., Zeng, L., & Kosorok, M.R. (2000). Relationship between adolescent-parental communication and initiation of first intercourse by adolescents. *Journal of Adolescent Health*, 28, 41-45.
- Keller, D. (1959). Personality aspects related to misinformation about sex among college students. *Science Education*, 43, 156-163.
- Kim, J., Tam, W., & Muennig, P. (2017). Sociodemographic correlates of sexlessness among American adults and associations with self-reported happiness levels: Evidence from the U.S. general social survey. *Archives of Sexual Behavior*, 46(8), 2403-2415.
- Lammers, C., Ireland, M., Resnick M., & Blum R. (2000). Influences on adolescents' decision to postpone onset of sexual intercourse: A survival analysis of virginity among youths aged 13 to 18 years. *Journal of Adolescent Health* 26(1):42–48.

- La Mendola, S., & Tinto, A. (2004). On 'damned' behaviour: sex, drugs & rock'n roll, in G. Dalla Zuanna & C. Crisafulli (Eds.), *Sexual behaviour of Italian Students. An international comparison*. Messina: Department of Statistics, University of Messina.
- Landor, A.M., & Simons, L.G. (2019). Correlates and predictors of virginity among heterosexual African American young adults. *Sexuality and Culture*, 23(3), 943-961.
- Magin, P., Heading, G., Adams, J., & Pond, D. (2010). Sex and the skin: A qualitative study of patients with acne, psoriasis and atopic eczema. *Psychology, Health & Medicine*, 15(4): 454-462.
- Meier, A. M. (2003) Adolescents' transition to first intercourse, religiosity, and attitudes about sex, *Social Forces*, 81, 1031-1052.
- Michalski, R., & Shackelford, T. K. (2002). Birth Order and Sexual Strategy. *Personality and Individual Differences*, 33:661-667.
- Miller, B., Benson, B., & Galbraith, K. (2001). Family relationships and adolescent pregnancy risk: A research synthesis. *Developmental Review*, 21 (1):1-38.
- Miller, K. S., Kotchick, B. A., Dorse, S., & Forehand, R. (1998). Family communication about sex: What are parents saying and are their adolescents listening?. *Family Planning Perspective*, 30, 218-222.
- Mohtasham, G, Shamsaddin, N, Bazargan, M, Anosheravan, K, Elaheh, M. & Fazlolah, G. (2009) Correlates of the intention to remain sexually inactive among male adolescents in an Islamic country: case of the Republic of Iran. *Journal of School Health* 79, 123-129
- Ongaro, F. (2004): Parental family, parenting strategies and age at first sexual intercourse, in G. Dalla Zuanna & C. Crisafulli (Eds.), *Sexual behaviour of Italian Students. An international comparison*. Messina: Department of Statistics, University of Messina.
- Parker, M., Heading, G., Adams, J., & Pond, D. (2010). Sex and the skin: A qualitative study of patients with acne, psoriasis and atopic eczema, *Psychology, Health & Medicine*, 15:4: 454-462, DOI:10.1080/13548506.2010.484463
- Paul, C., Fitzjohn, J., Eberhart-Phillips, J., Herbison, P., & Dickson, N. (2000). Sexual abstinence at age 21 in New Zealand: The importance of religion. *Social Science & Medicine* 51(1):1-10.
- Peplau, L. A. (2003). Human Sexuality: How Do Men and Women Differ? (2003). *Current Directions in Psychological Science* 12 (2): 37-40.
- Petersen, J. L., Shibley, H. J. (2011). Gender Differences in Sexual Attitudes and Behaviors: A Review of Meta-Analytic Results and Large Datasets, *The Journal of Sex Research*, 48:2-3, 149-165, DOI:10.1080/00224499.2011.551851

- Petersen, J. L., & Shibley, H. J. (2010). A meta-analytic review of research on gender differences in sexuality, 1993–2007.
- Pitts, M., & Rahman, Q. (2001). Which behaviors constitute “having sex” among university students in the UK? *Archives of Sexual Behavior*, 30(2), 169-176.
- Regnerus, M. D. (2007). *Forbidden fruit: Sex and religion in the lives of American teenagers*. New York: Oxford University Press.
- Rostosky, S. S., Regnerus, M. D., & Wright, M. C. (2003). Coital debut: The role of religiosity and sex attitudes in the Add Health Survey. *Journal of Sex Research* 40(4):358–67.
- Revol, O., Milliez, N., & Gerard, D. (2015). Psychological impact of acne on 21st-century adolescents: decoding for better care. *British Journal of Dermatology* (2015) 172 (Suppl. 1): 52–58.
- Rew, L. & Wong, Y.J. (2006) A systematic review of associations among religiosity/spirituality and adolescent health attitudes and behaviors. *Journal of Adolescent Health*. 38:433–442.
- Rhodes, G., Simmons, L.W., & Peters, M. (2005). Attractiveness and sexual behavior: Does attractiveness enhance mating success? *Evolution and Human Behavior*, 26(2), 186-201.
- Rodgers, J., Rowe, D., & Harris, D. (1992). Sibling Differences in Adolescent Sexual Behavior: Inferring Process Modeling Composition Patterns. *Journal of Marriage and Family* 54(1):142-152.
- Rosen, R.C., Shifren, J.L., Monz, B.U., Odom, D.M., Russo, P.A. & Johannes, C.B. (2009). Correlates of sexually related personal distress in women with low sexual desire. *Journal of Sexual Medicine*. 6:1549–1560.
- Rosina, A. (2004). First sexual approaches. In G. Dalla Zuanna and C. Crisafulli (Eds.), *Sexual behaviour of Italian Students. An international comparison* (pp. 105-106). Messina: Department of Statistics, University of Messina.
- Rosina, A., & Rivellini, G. (2004). Living arrangements, trasgressive behaviour and sexuality, Dalla Zuanna and C. Crisafulli (Eds.), *Sexual behaviour of Italian Students. An international comparison*. Messina: Department of Statistics, University of Messina.
- Rostosky, S. S., Regnerus M. D., & Comer Wright M. L. (2003) Coital debut: the role of religiosity and sex attitudes in the Add Health Survey, *Journal of Sex Research*, 40, 358-367.
- Schechterman, A. L. & Hutchinson, R. L. (1991). Causal attributions, self-monitoring, and gender differences among four virginity status groups. *Adolescence*, 26: 659–678.

- Sheeran, P., Abrams, D., Abraham, C., & Spears, R. (1993). Religiosity and adolescents premarital sexual attitudes and behavior: An empirical study of conceptual issues. *European Journal of Social Psychology, 23*(1), 39-52.
- Shifren, J.L., Monz, B.U., Russo, P.A., Segreti, A. & Johannes, C.B. (2008). Sexual problems and distress in United States women: Prevalence and correlates. *Obstetrics and Gynecology, 112*:970–978.
- Sprecher, S. & Regan, P.C. (1996). College virgins: How men and women perceive their sexual status. *Journal of Sex Research, 33*(1), 3-15.
- Stinson, R. (2010). Hooking up in young adulthood: A review of factors influencing the sexual behavior of college students. *Journal of College Student Psychotherapy, 24*(2), 98-115.
- Štulhofer, A., Šoh, D., Jelaska, N., Baćak, V., & Landripet, I. (2010). Religiosity and sexual risk behavior among Croatian college students, 1998-2008. *Journal of Sex Research, 48*, 360-371.
- Trapnell, P., Meston, C., & Gorzalka, B. (1994). Gender differences in predictors of virginity status - social dominance, self-rated attractiveness, and religiosity. *Canadian Psychology-Psychologie Canadienne, 35*(2A), 149.
- Vazsonyi, A., & Jenkins, D. (2010). Religiosity, self-control, and virginity status in college students from the “Bible Belt”: A research note. *Journal for the Scientific Study of Religion, 49*(3), 561-568.
- Vignoli, D., & Salvini, S. (2014). Religion and union formation in Italy: Catholic precepts, social pressure, and tradition, *Demographic Research, 31*(35): 1079–1106.
- Weeden, J., & Sabini, J. (2007). Subjective and objective measures of attractiveness and their relation to sexual behavior and sexual attitudes in university students. *Archives of Sexual Behavior, 36*(1), 79-88. DOI 10.1007/s10508-006-9075-x
- Weeden, J., & Sabini, J. (2005). Physical attractiveness and health in Western societies: A review. *Psychological Bulletin, 131*, 635–653.

Appendix

Descriptive statistics of the complete sample (2001 plus 2017)

Table A1. Descriptive statistics. Males (n=5,979).

Variable	Mean	Std. Dev.	Min	Max
Virginity status	0.226		0	1
Age	21.126	1.479	18	26
Depression	0.328		0	1
Parents separated or divorced	0.116		0	1
Satisfaction about own body image nowadays	0.821		0	1
BMI	22.766	2.784	11.318	42.163
BMI ²	526.034	134.419	128.105	1777.709
First born	0.500		0	1
Balanced or intense relationship with the father	0.763		0	1
Balanced or intense relationship with the mother	0.903		0	1
Have talked in depth to parents about sexual development	0.155		0	1
Have talked in depth to parents about sexual diseases	0.194		0	1
Have talked in depth to parents about contraception	0.186		0	1
Father's education (number of years)	12.267	3.512	5	17
Mother's education (number of years)	12.349	3.453	5	17
Opinion about the importance of religion in life (=1 if quite or very important)	0.431		0	1
Opinion about the importance of religion in life (=1 if quite or very important)	0.123		0	1
Attends the disco often or very often (versus never or sometimes)	0.390		0	1
Having had at least one physical problem between the 14 and 18 years, including halitosis, excessive sweating and severe acne	0.305		0	1
Area of residence: North Italy	0.372		0	1
Area of residence: Centre Italy	0.265		0	1
Area of residence: South Italy	0.363		0	1
Year 2017	0.674		0	1
Off-site student	0.018		0	1

Table A2. Descriptive statistics. Females (n=6,421).

Variable	Mean	Std. Dev.	Min	Max
Virginity status	0.273		0	1
Age	21.040	1.473	18	26
Depression	0.350		0	1
Parents separated or divorced	0.098		0	1
Satisfaction about own body image nowadays	0.683		0	1
BMI	21.026	2.999	13.932	42.163
BMI ²	451.077	139.831	194.094	1777.709
First born	0.471		0	1
Balanced or intense relationship with the father	0.698		0	1
Balanced or intense relationship with the mother	0.866		0	1
Have talked in depth to parents about sexual development	0.256		0	1
Have talked in depth to parents about sexual diseases	0.198		0	1
Have talked in depth to parents about contraception	0.210		0	1
Father's education (number of years)	11.332	3.648	5	17
Mother's education (number of years)	11.342	3.612	5	17
Opinion about the importance of religion in life (=1 if quite or very important)	0.603		0	1
Opinion about the importance of religion in life (=1 if quite or very important)	0.183		0	1
Attends the disco often or very often (versus never or sometimes)	0.343		0	1
Having had at least one physical problem between the 14 and 18 years, including halitosis, excessive sweating and severe acne	0.282		0	1
Area of residence: North Italy	0.341		0	1
Area of residence: Centre Italy	0.258		0	1
Area of residence: South Italy	0.401		0	1
Year 2017	0.573		0	1
Off-site student	0.023		0	1