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Is Physical Unattractiveness a Risk Factor for Sexual Violence Perpetration? Evidence from the U.S.

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Is Physical Unattractiveness a Risk Factor for Sexual Violence Perpetration? Evidence from the U.S*

Abstract

A comprehensive understanding of the determinants of sexual violence constitutes a crucial step toward effective prevention. While there is much research on the role of socio-economic circumstances of both victims and perpetrators, little is known about whether an individual's physical attractiveness influences the likelihood of perpetrating sexual violence. Using U.S. data from the National Longitudinal Study of Adolescent to Adult Health (Add Health), we examine the relationship between attractiveness and sexual violence perpetration against one's partner. Physical attractiveness is measured using interviewer-assigned scores for respondents aged 12 to 17. While no correlation is documented for women, among men, a one-point increase in attractiveness (on a 1–5 scale) reduces the likelihood of perpetrating sexual violence in adulthood by 13 percent. We also find that contextual factors, such as parental education and neighborhood cohesion, mitigate this association. Very unattractive men with highly educated parents have substantially lower predicted probabilities of perpetrating sexual violence against the partner, compared to peers with less-educated parents. Similarly, very unattractive men living in cohesive neighborhoods report markedly lower predicted frequencies of sexual violence perpetration than those in less cohesive neighborhoods.

JEL classification

J12, K42, J71, I12, J16

Keywords

sexual intimate partner violence, attractiveness, beauty premium

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1 Introduction

Sexual violence against women is a serious violation of human rights and a major social concern worldwide. In the U.S., nearly one in two women has experienced some form of sexual violence during her lifetime, with approximately half of rape cases perpetrated by an intimate partner (Centers for Disease Control and Prevention [CDC] 2011, 2018). Across the European Union, data collected by Eurostat (2025) for the timespan 2020-2024 indicate that one out of three women reported having experienced physical or sexual abuse. Moreover, one in five women has been victimized by her partner.¹ The consequences of sexual violence victimization are severe, ranging from mental and physical health disorders to diminished social well-being and an increased risk of suicidality (Dworkin et al. 2017; Basile and Smith 2011). Yet, despite its prevalence and harmful effects, relatively little is known about the underlying factors that drive men to commit sexual violence.

This knowledge gap has become even more pressing with the emergence of misogynistic movements such as the manosphere² and, in particular, the incel subculture. These groups, rooted in online communities, portray male sexual deprivation as the inevitable outcome of low attractiveness and call for a social order in which women are subordinated to men. While often confined to virtual spaces, these ideologies have at times contributed to episodes of real-world violence, such as the 2014 Isla Vista shootings.³ Although still relatively rare, violent episodes linked to incel culture have increased, reflecting the broader spread of misogynistic attitudes.

Moreover, the misogynistic culture is not confined to men without a partner, but also spread to men in stable relationships. The number of women who report their partners had been sucked into the manosphere or consumed far-right material online is increasing (The Guardian, April 2025).

¹This figure, though, encompasses all forms of domestic violence, not only sexual violence.

²The “manosphere” describes a collection of online communities—such as forums, blogs, and websites—where men discuss topics related to modern masculinity and their relationships with women, often promoting perspectives that are critical of feminism and opposed to women’s rights.

³The Isla Vista massacre took place in Santa Barbara County, California, on the evening of May 23, 2014, when 22-year-old Elliot Rodger killed six people and injured fourteen others through shootings, stabbings, and vehicle attacks near the University of California, Santa Barbara campus, before taking his own life. Prior to the attack, he had written a manifesto expressing deep resentment toward women, rooted in feelings of unattractiveness and sexual rejection. Rodger participated in online forums where he and other men shared misogynistic content and identified themselves as ‘incels,’ an online subculture centered on the perceived inability to establish romantic or sexual relationships. Following the massacre, Rodger became the most frequently referenced figure within incel communities and is at times cited as the symbolic founder of the contemporary online incel movement.

More specifically, a key issue in the context of the manosphere is the lack of consent in the sexual sphere within couples. An emblematic example of this is the phenomenon – widely documented by the Italian media in the summer of 2025 – of men sharing intimate photos of their partners on dedicated Facebook pages (e.g. “Mia Moglie”). At the time it was shut down, “Mia Moglie” page had around 30,000 subscribers, yet it represents only the surface of a much larger problem. Telegram hosts numerous groups devoted to sharing and circulating non-consensual intimate content. According to a report released in November 2023, the association *PermessoNegato* estimated that in Italy there were no fewer than 147 such channels. All these alarming signals underscore the urgent need to investigate the factors driving gender-based violence, and particularly intimate partner violence, given its widespread occurrence.

This study is the first to examine the relationship between physical attractiveness and sexual violence perpetration within couples. Specifically, we investigate whether a less attractive partner is more likely to engage in predatory sexual behaviors toward their partner compared to a more attractive one. Theoretically, the direction of this relationship is ambiguous. On the one hand, it may be reasonable to assume that less attractive individuals are more prone to violent behavior, as they might feel less socially accepted—both by society at large and by their partner. On the other hand, less attractive individuals may have developed more sophisticated socio-emotional skills to compensate for the lack of a “beauty premium”. These skills could enhance their persuasive abilities, potentially reducing the need to resort to violence, even in the sexual domain.

We document a negative correlation between an individual’s level of physical attractiveness and the likelihood of committing sexual violence against a partner, using rich U.S. survey data from the National Longitudinal Study of Adolescent to Adult life (*Add Health*). This dataset follows a nationally representative sample of American adolescents into adulthood and is particularly well suited for our study because it provides (i) interviewer ratings of respondents’ physical attractiveness and (ii) detailed information on respondents’ relationships, including reports of attempted or completed sexual offenses against partners. In particular, the survey captures within-couple sexual violence by asking whether the respondent insisted on or forced sexual relations when the partner did not consent. By avoiding the explicit labeling of such behaviors as “sexual violence,” this measure may reduce social desirability bias and underreporting, thus yielding more reliable estimates of this specific form of intimate partner violence. However, we also rely on an alternative

- more explicit - definition of social violence. Our results show that, within the sample of men, a one-point increase in beauty ratings decreases the likelihood of perpetrating sexual violence toward one's partner by 1.3 percentage points. Relative to the sample mean baseline (9.9), this effect corresponds to a 13 percent reduction in perpetrated violence. No effects are found for women. These findings are robust to a series of robustness checks. We also find that personality traits and social inclusion play only a marginal role in mediating the relationship between attractiveness and sexual violence perpetration, whereas parental education and neighborhood support appear to significantly mitigate this correlation. Interestingly, we also document a link between physical attractiveness and perceptions of sex. More attractive individuals are less likely to view sex as a means of alleviating loneliness and more likely to associate it with physical pleasure. These results reinforce the idea that less attractive partners may attach to sex a meaning of social acceptance, which in turn could translate into a tendency to use violence as a way to fulfill this need. Our findings carry important implications, prompting reflection on the social importance placed on physical appearance and on the protective role of family and social environments in preventing the development of violent behaviors in the sexual sphere.

The rest of the paper is structured as follows. In Section 2, we revise the studies close to ours, in Section 3 we describe our data, and in Section 4 and 5 the empirical strategy and the results. Section 6 illustrates potential mechanisms, and Section 7 concludes.

2 Related literature

It is well established in the literature that society pays a premium for being physically attractive. From a young age, improvements in children's appearance increase objective learning outcomes, which translate into long-term gains in cognitive achievement (Hamermesh, Gordon, and Crosnoe 2023). Later on in life, attractive individuals are more successful in university (Mehic 2022), earn higher wages (Hamermesh 2011) and earnings (Hamermesh, Meng, and Zhang 2002), get easier career advancements (Hale, Regev, and Rubinstein 2023), and receive higher evaluations (Hamermesh and Parker 2005). Beauty is also associated with higher life satisfaction scores (Hamermesh and Abrevaya 2013), and it even plays a role in the intergenerational transmission of inequality (Hamermesh and Zhang 2025).

Failure to meet society's beauty standards can have significant negative impacts on individual well-being. Already in youth, unattractive students are more likely to be unpopular in high school and have lower number of friends (Green, Wilson, and Zhang 2023). Feelings of vulnerability and social exclusion have been shown to be among the factors that drive men toward extremist behaviors (Harpviken 2020). Within the sexual sphere in particular, physical unattractiveness and vulnerability are at the core of misogynist movements such as that of the incels (short for "involuntary celibate") (Daly and Reed 2022; Botto and Gottzén 2024). Incels attribute their inability to form romantic or sexual relationships to their perceived lack of physical attractiveness and glorify sexualized violence against women as a means to re-establish their manhood (Daly and Reed 2022; Gosse, Halpin, and Maguire 2024). Whether a relationship between physical attractiveness and sexual violence perpetration exists, however, remains to date empirically unknown.

With this paper, we contribute to two strands of literature. First, we add to the literature on beauty premium effects by providing first evidence on sexual violence outcomes. Earlier studies examined educational and labor market outcomes (Mehic 2022; Hale, Regev, and Rubinstein 2023; Hamermesh 2011), crime outcomes (Mocan and Tekin 2010), and risky behaviors (Green, Wilson, and Zhang 2023), but have overlooked intimate partner sexual violence. In particular, Mocan and Tekin 2010 find that higher attractiveness in youth reduces later criminal behavior, partly by boosting human capital and labour market opportunities. In a similar vein, Green, Wilson, and Zhang 2023 documents that that adolescent physical attractiveness correlates with risky behaviors. Attractive teens are less likely to smoke, use drugs, or have unprotected sex and, since they exhibit greater popularity, they are more likely to have higher self-esteem, and appealing personality traits. Like our study, they use the Add Health dataset and corroborate their findings by including school-by-interviewer fixed effects to account for the selection of students into schools based on unobserved factors. Consistent with these studies, we show that lower physical attractiveness can foster violent behavior, and for the first time provide evidence that such behavior may extend into the romantic sphere in the form of forced sexual intercourse.

Second, we contribute to the literature that examines the drivers of and protective factors against intimate partner violence (IPV) (Akyol and Kırdar 2022; Erten and Keskin 2018; Aizer 2010; Bulte and Lensink 2019; Brassiolo 2016; Card and Dahl 2011; Luca, Owens, and Sharma 2015; Cesur and Sabia 2016; Bhalotra et al. 2025; Stojetz and Brück 2023). The majority of

studies on this topic have generally focused on physical violence outcomes (Aizer 2010; Bulte and Lensink 2019; Card and Dahl 2011; Cesur and Sabia 2016), with relatively few also including sexual violence considerations (Akyol and Kırdar 2022; Erten and Keskin 2018; Brassiolo 2016; Luca, Owens, and Sharma 2015; Stojetz and Brück 2023). However, past studies typically offered evidence on sexual violence occurrences from women's (victimization) perspective.⁴

This paper contributes to the literature by shifting the focus to perpetrators' traits, providing novel evidence on how physical attractiveness influences the propensity to commit sexual IPV. We also show that this relationship can be mitigated by social context, particularly parental education and neighborhood cohesion.

3 Data

3.1 Add Health data and estimation sample

This study relies on data from the National Longitudinal Study of Adolescent to Adult Health (Add Health), a U.S. longitudinal survey that follows a nationally representative sample of 8th to 12th graders as they transition from adolescence to adulthood. The first wave of the survey (Wave 1) was conducted in the 1994-95 academic year and involved 80 high schools and 52 middle schools whose student population (about 90,000 students aged 12 to 19) was given a short baseline interview. From these schools, a subsample of 20,745 students – the "In-Home" sample – was randomly chosen to participate in a detailed interview that would typically take place at the respondent's home. Interviews in Wave 1 and subsequent waves were conducted using a mixture of Computer Assisted Personal Interview (CAPI) or Computer Assisted Self Interview (CASI), depending on the nature of the question.⁵ Specifically, for less sensitive questions, the interviewer

⁴Exploiting a compulsory schooling law in Turkey, Akyol and Kırdar (2022) and Erten and Keskin (2018) examined the effect of education on women's likelihood of becoming victims of physical, psychological, and sexual violence. Both studies found statistically insignificant effects of education on sexual violence victimization. Exploiting a reform that unexpectedly lowered the costs of divorce in Spain, Brassiolo (2016) examined the effects of divorce on the likelihood for women to become victims of physical, psychological, or sexual abuse by their partners. The author found a statistically negative effect of divorce on sexual violence victimization. Finally, Luca, Owens, and Sharma (2015) examined how a reform in India that banned alcohol consumption has reflected in the likelihood for women to become victims of physical or sexual violence. The author found that banning alcohol significantly reduced sexual violence victimization among women.

⁵Only in Wave 5, a mixed-mode interview is employed, where some respondents get the usual CASI/CAPI interviews, whereas other respondents fill a web or mail questionnaire independently.

would read the questions aloud to the respondents and record their answers on a laptop. For more sensitive questions, instead, the interviewer would allow respondents to read the question in private on the laptop and type the answer themselves.

The In-Home sample was then longitudinally followed in four subsequent follow-ups conducted in 1996 (Wave 2), 2001-02 (Wave 3, ages 18-26), 2008-09 (Wave 4, ages 24-32), and 2016-18 (Wave 5, ages 32-42). For the purpose of this study, we retain all Wave 1 In-Home respondents who participated in either one among Wave 3, Wave 4, or Wave 5 (18,350 observations) and for whom sexual violence information is collected (17,619 observations).⁶ After deleting observations with missing information on control variables (5.58 percent of the sample), our final sample consists of 16,636 observations, from 7920 men and 8716 women.

3.2 Construction of key variables

As a key independent variable of interest, we use the physical attractiveness rating assigned by interviewers to respondents in Wave 1. Specifically, at the end of the in-home interview, interviewers were asked to fill in answers to some questions regarding the interview and the respondent. Among these questions, interviewers were asked: “How physically attractive is the respondent?” with five possible responses: 1 – very unattractive, 2 – unattractive, 3 – about average, 4 – attractive, and 5 – very attractive.”

Moving to the dependent variable, our outcome of interest is the likelihood of committing sexual intimate partner violence. According to the U.S. Centers for Disease Control and Prevention, sexual violence is “a sexual act that is committed or attempted by another person without freely given consent of the victim or against someone who is unable to consent or refuse” (Basile et al. 2014). In our study, sexual IPV is measured using a binary indicator of whether individuals have ever attempted or forced sexual intercourse with a partner without consent. Indeed, starting from Wave 3 through Wave 5, respondents are asked almost always with respect to their ongoing relationship⁷, how often they “insisted on or made [partner] have sexual relations with [respondent] when [partner] didn’t want to”. We then code sexual violence perpetration as 1 if respondents re-

⁶Individuals who never had a partner up to Wave 3 or who do not have a current partner at the time of the survey in Wave 4 or 5 do not answer to questions related to partnership violence.

⁷Only in Wave 3 respondents are asked to reconstruct their relationship history and survey items about sexual violence are available for up to three relationships.

port having forced sexual relations on their partner at least once in any of the Waves 3-5 they participated, and as 0 if respondents report never having forced sexual relations on their partner in any of the waves they participated. Because questions on perpetrated violence address inherently sensitive and socially undesirable or unlawful behaviors that respondents may feel uncomfortable disclosing, they are administered via CASI interviews to maximize response rates. (Harris 2013).

To account for individual, family, and socioeconomic characteristics that might be correlated with physical attractiveness scores, we employ a wide range of control variables, all measured in Wave 1. At the individual level, we include a discrete variable for respondents' age, binary indicators for respondents' sex and birthplace (U.S.-born vs. foreign-born), and account for respondents' race by constructing five dummies (White, Black, Hispanic, Asian, Other). We also account for respondents not being continuously followed from Wave 3 to Wave 5 by creating binary variables that capture their exact participation pattern across these waves. These variables indicate whether a respondent participated in only Wave 3, only Wave 4, only Wave 5, both Waves 3 and 4, both Waves 3 and 5, both Waves 4 and 5, or all three waves (3, 4, and 5).

At the family level, we include discrete variables for respondents' number of full siblings and birth order. Additionally, as socioeconomic background variables, we first include a continuous variable for the total income received by the family in 1994. If missing, we impute it by taking the average family income of the school attended by the respondent, and we include a binary indicator to control for whether the family income variable was imputed. We also control for the mother's and father's level of education, each arranged in five categories (less than secondary education, secondary education, some college, college, and missing/not known).

We also construct a variety of variables that we use as mediating or moderating mechanisms. As mediating mechanisms, we test the roles of i) education; ii) social inclusion; iii) self-esteem; iv) personality traits.

First, because physical attractiveness has been shown to affect educational attainment (Mehic 2022), we check whether the correlation between beauty and IPV is partially explained by school grades. For this purpose, we construct a variable for respondents' Wave 1 Grade Point Average (GPA) by averaging the last grade that each respondent reported in English, History, Math, and Science, and then standardizing it within year-of-school level. Further, given evidence that physical attractiveness correlates with individuals' friendship ties and social inclusion (Green, Wilson,

and Zhang 2023), and that social exclusion is associated with higher willingness to engage in violent behaviors (for a review, see Pfundmair et al. 2024), we examine the role of social integration as a mediator of the association between physical attractiveness and sexual violence perpetration. To operationalize social inclusion, we construct two variables, social acceptance and social isolation, both using Wave 1 information⁸. Next, because physical attractiveness might significantly influence an individual's level of self-esteem and self-esteem has been shown to significantly correlate with violent behaviors (Ostrowsky 2010), we test the mediating role of self-esteem in driving the association between physical attractiveness and sexual violence perpetration.⁹ Finally, previous research has descriptively shown that certain levels of personality traits (low agreeableness, low extraversion, or low conscientiousness) recur more frequently among individuals who commit sexual offenses (Voller and Long 2010). Given that beauty can influence personality (Green, Wilson, and Zhang 2023), we test the role of personality traits as mediators of the relationship between physical attractiveness and sexual violence perpetration by including measures of respondents' Big Five personality traits – conscientiousness, extroversion, openness, neuroticism, and agreeableness – constructed using the Wave 4 personality modules.¹⁰

As a moderating mechanisms, instead, we consider and test the roles of i) parental education and ii) neighbourhood cohesion.¹¹ To test the former, we consider the mother's and father's levels of education separately and use binary variables for whether the mother or father has a college

⁸Following Fletcher et al. (2021), we construct a variable for how integrated the respondent is at school by doing factor analysis of how much the student feels “part of school”, “close to people at school” “happy at school”, “accepted at school” and thinks that “students are not prejudiced [at school]”. Additionally, we construct a variable for how isolated the respondent is by doing a factor analysis of how often in the week before the interview the respondent “talked less than usual”, “felt lonely”, thought “friends do not care”, felt “disliked by people”, “hang out with friends”.

⁹Following Green, Wilson, and Zhang (2023), we define self-esteem by factor analysis of respondents' levels of agreement (on a 1–5 scale, where 1 = strongly disagree and 5 = strongly agree) with each of the four following statements: 1) You have a lot to be proud of; 2) You like yourself just the way you are; 3) You feel you are doing everything just about right; 4) You have a lot of good qualities.

¹⁰The Big Five personality traits (conscientiousness, extroversion, openness, neuroticism, and agreeableness) are constructed using responses to 41 survey items asked in Wave 4 as part of the personality module (see Fletcher and Padrón 2016 for further information).

¹¹We also examined the role of parental religiosity (the importance of religion to the parent of the survey respondent, measured on a 1–5 scale), parental gender norms (whether the parent considers skills such as working hard or thinking independently to be most important for both boys and girls, versus other skills such as being popular, helping others, or behaving well; see Rodríguez-Planas, Galdeano, and Terskaya 2022 for details), and parental investment (a cumulative score from 0 to 3 based on whether the resident parent engaged in any of the following activities with their child in the four weeks preceding the survey: discussing grades, working on a school project, or talking about other school-related matters). Our results indicated no effect of parental religiosity or parental gender norms. While we did find a mitigating effect of parental investment among very unattractive men, we ultimately ruled out this mechanism, as parental investment is possibly endogenous to students' physical attractiveness.

education degree (1 for college-educated, 0 otherwise). To test the latter, we construct two proxies of neighbourhood cohesion. First, we construct a discrete “neighbourhood cohesion index” by summing the number of the following Wave 1 statements reported as true by each student: “You know most of the people in your neighborhood”; “In the past month, you have stopped on the street to talk with someone who lives in your neighborhood”; “People in this neighborhood look out for each other”. Since the answers to these questions come from students, however, they may be influenced by the students’ level of physical attractiveness, as more (less) attractive students may feel more (less) integrated into the neighborhood, or vice versa. Therefore, as a second proxy, we construct an alternative neighborhood cohesion indicator using a question from the parent questionnaire that asks whether the parent would tell a neighbor if they saw their child getting into trouble. This indicator ranges from 1 (definitely would not) to 5 (definitely would).

3.3 Descriptive statistics

Table 1 below shows the descriptive statistics of our sample, separately for men and women.

< Table 1 here >

The majority of individuals in our sample were born in the United States (91.8% of men and 91.9% of women). Moreover, slightly one-third of men and one-third of women identify as White, another one-third as mixed ethnicity, and the remaining third as Black, Hispanic, or Asian. About one in four individuals have mothers with a college education, and about one in five have fathers with a college education. Finally, approximately half of the sample participated in all of Waves 3, 4, and 5, with rates being higher among women (59%) than among men (46%).

Considering physical attractiveness scores, it appears that on average women receive higher beauty ratings than men, with mean scores of 3.7 for women and 3.5 for men. Both genders receive relatively few ratings in the “very unattractive” and “unattractive” categories combined (6.7% for men and 5.8% for women). Instead, approximately half of men (50.6%) are rated as “about average,” whereas this proportion is lower for women (37.3%). Finally, women receive relatively more ratings in the “attractive” or “very attractive” categories combined (57.2%), while this percentage is lower for men (42.7%).

Turning to frequencies of sexual violence perpetration, Table 1 shows that, in our data, 9.9

percent of men report having forced sexual relations on their partner at least once, whereas this percentage is lower within the sample of women, amounting to 5.4 percent.

4 Empirical strategy

To examine the effect of physical attractiveness on sexual violence perpetration, we estimate the following regression:

$$SVP_i = \beta_0 + \beta_1 PA_i + \gamma X_i + \delta_{st} + \varepsilon_i. \quad (1)$$

where SVP_i indicates the examined outcome variable (sexual violence perpetration) for individual i , PA is a discrete variable for an individual's level of physical attractiveness (scale 1-5), X_i defines a series of individual, family, and socioeconomic control variables, and δ_{st} denotes school-by-interviewer fixed effects. Unless otherwise specified, standard errors are clustered at the school by interviewer level.

Estimating the effect of beauty presents several challenges. First, although individuals appear to show relatively consistent judgments among each other about what is deemed “attractive” (Hamermesh 2011; Hamermesh and Abrevaya 2013), beauty is ultimately a subjective matter. The assessment of a person's level of beauty might indeed reflect personal preferences or cultural influences, with ratings differing from one person to another. Including interviewer fixed effects – by construction absorbed when school-by-interviewer fixed effects are estimated – allows us to account for subjectivity in beauty ratings.

Second, beauty is correlated with a number of background variables, among which the socioeconomic status (SES) of the family of origin is most prominent. Individuals from low-SES families may appear more neglected than those from high-SES families, influencing interviewers' assessments of beauty regardless of respondents' actual level of attractiveness. Including an extensive set of control variables for respondents' background characteristics helps us to mitigate this concern. In addition to family background characteristics, interviewers' beauty ratings may also be influenced by external factors. For example, interviewers may unconsciously be more likely to assign high beauty ratings to students attending schools located in wealthy neighborhoods than

to students attending schools located in more disadvantaged neighborhoods. To address this issue, we follow Green, Wilson, and Zhang (2023) and include school-by-interviewer fixed effects, exploiting variation in beauty ratings assigned by the interviewer within the same school.

5 Results

5.1 Main findings

Table 2 shows our main results for the effect of beauty on sexual violence perpetration, with estimates reported separately for men (columns 1 to 5) and for women (columns 5 to 10). We rely on a series of specification checks. Starting with the baseline model of columns 1 and 6, which includes only the full set of covariates, we gradually add school and grade fixed effects (columns 2 and 7), interviewer fixed effects (columns 3, 4, and 8, 9), and finally, in our preferred specification, school-by-interviewer fixed effects (columns 5 and 10).

Across specifications, we consistently find that, within the sample of men, physical attractiveness has a negative impact on sexual violence perpetration. By contrast, within the sample of women, no significant effect is found. In column 5, a 1-point increase in men’s beauty rating is associated with a 1.3 percentage points reduction in the likelihood of perpetrating sexual violence toward their partner. The magnitude of this reduction is non-negligible, corresponding to a 13% decrease relative to the sample mean.

< Table 2 here >

In Table A.2 we also show the coefficients of the other regressors included in the analysis.

5.2 Robustness checks

To test the robustness of your results, we perform a series of checks displayed in Table 3. First, we examine whether our estimates are sensitive to measuring physical attractiveness at another point in time (columns 1-2). To this end, we rely on beauty scores measured in wave 2 instead of wave 1, and test how they correlate with sexual violence perpetration measured as in our main analysis (a binary indicator equal to one if the partner insisted for sex either in wave 3, 4 or 5). The results are consistent with our main findings. Second, we address the possibility that reports of

sexual violence at younger ages may be less reliable, for example because of limited relationship experience. To address this, we examine how physical attractiveness (measured in wave 1 as in our main analysis) correlates with physical violence perpetration observed in either wave 4 or 5 (columns 3-4). Again, the coefficients are in line with those displayed in Table 2. In Table A.1 in the Appendix, we also check the association between physical attractiveness and sexual violence perpetration, with the outcome measured separately for each of waves 3, 4 or 5.

As a third check, we examine whether our main results of Table 2 hold when we consider binary variables for physical attractiveness instead of using a continuous variable (columns 5-6). Within the sample of men, our findings show that compared to the omitted category of very attractive men, men in all other categories of physical attractiveness engage more frequently in sexual IPV. The effect is particularly large among men classified as “average”, while for men in the unattractive and very unattractive categories, albeit positive, the effect is not significant, likely due to lower power. No statistically significant or economically meaningful effects are detected within the sample of women.

Finally, in column 7, we test whether our results hold under an alternative definition of sexual violence. In Wave 1, male respondents who had had sexual intercourse at least once were asked if they had ever “physically forced someone to have sexual intercourse against her will” (note that female respondents were instead asked if they had ever “been physically forced to have sexual intercourse against [their] will”, thus we conduct this check using the male sample only). Based on this item, we construct an as an outcome variable a dummy equal to 1 if the male respondent reports having committed sexual violence and 0 otherwise.

This robustness check serves two purposes. First, it allows us to assess whether our results hold when considering a broader sample that includes individuals who are not in a partnership. Indeed, it might be argued that the estimates in Table 2 represent a lower bound, since they are based on individuals in partnerships who may, on average, be more attractive or socially well-adjusted given that they succeeded in forming a relationship. In contrast, the sample in column (7) includes all male respondents who have ever had (consensual or non-consensual) sexual intercourse, regardless of their partnership status. Second, as discussed further in the next section, our main measure of sexual violence relies on wording that avoids explicit terms such as “committing violence”. It could be argued that more attractive individuals might be less likely to perceive their

actions as coercive. The measure used in this alternative specification of the outcome minimizes such interpretive ambiguity by focusing explicitly on completed (rather than attempted) sexual acts and by referring specifically to sexual *intercourse* rather than to sexual activity more broadly. The findings reported in column (7) are consistent with those estimated in our main analysis in Table 2.

< Table 3 here >

5.3 Dealing with reporting

Since sexual IPV is self-reported in our data, careful attention must be paid to potential reporting biases. First, as discussed in the introduction, a strength of this study is that the question on forcing sexual intercourse—phrased as “insisted on or made [partner] have sexual relations with [respondent] when [partner] didn’t want to”—is relatively mild, avoiding explicit terms like “committing violence” and thereby likely reducing social desirability bias (see Table 3 for an alternative definition of sexual violence perpetration that refers more specifically to sexual intercourse rather than sexual activity in general). Nevertheless, the topic remains sensitive and may still lead respondents to underreport.

Second, as described in Section 3, questions on sexual violence are administered via a CASI system, allowing respondents to answer independently and privately on laptops. Although CASI systems are generally effective at improving reporting of sensitive behaviors and increasing response rates (Cesur and Sabia 2016; Rathod et al. 2011), underreporting may still occur. This is particularly problematic if it is systematically related to physical attractiveness. For example, if less attractive individuals are more transparent about their behavior than more attractive ones, our results could be biased.

To assess this concern, we test whether beauty ratings are associated with another socially undesirable behavior—misreporting academic performance. Specifically, in Table 4 we compare self-reported high school GPAs with official transcripts, using two measures of discrepancy: (i) the difference between the reported and official GPA, and ii) a binary indicator equal to one if the self-reported GPA is larger than the actual GPA. Our results show no significant correlation between physical attractiveness and either measure of misreporting, which supports the validity of our estimates of the effect of beauty on sexual violence perpetration.

< Table 4 here >

5.4 Mechanisms

In this paper, we show that men’s physical attractiveness is negatively correlated with the self-reported likelihood of having perpetrated sexual IPV, measured as insisting on having sexual relations with a partner. While these results are intriguing, it is essential to understand the mechanisms behind this correlation. In this section, we first explore potential mediating factors, hypothesizing that physical attractiveness may shape certain individual traits, which in turn influence men’s propensity to engage in sexual IPV. We then examine possible moderating factors—individual or household characteristics, preferably unrelated to physical attractiveness, that may weaken or amplify the observed relationship between attractiveness and sexual violence perpetration.

5.4.1 Mediating factors of sexual IPV

In Figure 1, we test for the sample of men the possible roles of i) education; ii) social inclusion; iii) self-esteem; and iv) personality traits as mediators of the relationship between beauty and sexual violence perpetration (see Tables A.3-A.6 online for the corresponding regression tables). In Panel (a), we first assess the relevance of the mediators and find that physical attractiveness is significantly correlated with nearly all mediators along the directions suggested by the literature. Specifically, a one-point increase in beauty rating is associated with a 0.121 standard deviation (s.d.) increase in school GPA, a 0.116 s.d. increase in self-esteem, a 0.083 s.d. increase in social acceptance, and 0.033 s.d. decrease in social isolation. Finally, regarding personality traits, higher physical attractiveness is associated with greater conscientiousness (+0.087 s.d.), extraversion (+0.107 s.d.), and agreeableness (+0.098 s.d.), as well as lower neuroticism (-0.092 s.d.), whereas it is not significantly correlated with openness.

In Panel (b), we examine how the association between physical attractiveness and sexual violence perpetration changes when mediators are included in the regression. Specifically, for each potential mechanism, we report the estimated coefficient on physical attractiveness from two specifications: one excluding the mediator(s) and one including them. In Table 5, we report 95% percentile bootstrap confidence intervals, following the approach of Preacher and Hayes (2004), to

evaluate the significance of each mediating pathway. Our findings show that personality traits and social inclusion account for significant yet marginal portions of the observed association, reducing the physical attractiveness coefficient by 17.14% and 11.94%, respectively. Self-esteem also plays a statistically significant mediating role, explaining 6.15% of the reduction. In contrast, we do not find any evidence that high school GPA significantly mediates the relationship.

5.4.2 Moderating factors of sexual IPV

In Figure 2, we examine the role of parental education and neighbourhood cohesion as potential moderators of this relationship. In the upper panels, we show how predicted frequencies of sexual violence perpetration vary across levels of physical attractiveness, depending on whether the mother (top left graph) or the father (top right graph) attained a high school diploma at most or a college degree. The graph reveals a negative relationship between parental education and sexual violence perpetration among very unattractive individuals. Specifically, very unattractive men with highly educated parents appear to have predictive sexual violence perpetration frequencies that are very close in magnitude to zero and are not statistically significant, whereas very unattractive men with lower levels of parental education appear at the high end of the predicted sexual violence perpetration frequencies. We do not find evidence that parental education significantly moderates the relationship examined at other levels of physical attractiveness.

In the bottom panel, we show the results from testing the moderating role of neighbourhood cohesion. The bottom left graph reports changes in predicted frequencies of sexual violence perpetration across levels of physical attractiveness as the level of neighbourhood cohesion increases. Our results show that, among very unattractive men, those who live in neighbourhoods with higher cohesion report substantially lower predicted sexual violence perpetration frequencies compared to their counterparts who live in neighbourhoods with lower cohesion. However, as this index is constructed from the student's perspective and might therefore be influenced by how the student's physical attractiveness affects the perceived level of integration within the neighbourhood, we also report in the bottom right graph how sexual violence perpetration frequencies change when using an indicator drawn from the parent questionnaire and find a consistent pattern. Together, these findings provide suggestive evidence that among very unattractive men, those with less educated parents and who live in a neighborhood with weak ties might be especially at risk of developing

violent attitudes that ultimately lead to the perpetration of sexual violence.

5.5 Additional outcomes

To further understand how physical attractiveness relates to sexual (violence) behavior, we examine whether it is also associated with men's and women's attitudes toward sex. These attitudes capture how individuals perceive the social, emotional, and physical aspects of sex and may help contextualize our main findings. For this purpose, we exploit a series of questions asked in Wave 1 and 2 about attitudes toward sex.¹² Specifically, regardless of whether or not they have already had sex, respondents are asked how much they agree that by having sex they would i) become more attractive to women (if male) or to men (if female); ii) feel less lonely; iii) gain respect from friends; and iv) gain a lot of physical pleasure. The responses to each question are recorded on a five-point discrete scale ranging from 1 ("strongly agree") to 5 ("strongly disagree"), and we use the mean value of responses given in Waves 1 and 2 as an outcome (additionally controlling for whether respondents participated in both Waves 1 and 2 or Wave 1 only).¹³

We report our results in Table 6 below.¹⁴ Our findings show that for men (Panel A), a one-point increase in the beauty rating is significantly associated with a 0.043-point increase in the frequency of disagreeing with the statement that sex helps reduce loneliness, and a 0.034-point increase in the frequency of agreeing that sex is associated with a lot of physical pleasure. In other words, less attractive men are more likely to think of sex as a means of reducing loneliness and less likely to associate it with physical pleasure. No significant effects are found on attractiveness to women or respect among friends. Among women (Panel B), higher levels of physical attractiveness are again positively associated with higher frequencies of disagreeing that sex contributes to reducing loneliness, and that it makes women more attractive to men.

< Table 6 here >

¹²Note that, in Wave 1, questions about attitudes toward sex are asked to respondents aged 15 or older who are not married, whereas in Wave 2 they are asked to all respondents provided they are not married.

¹³We find consistent results when estimating the effects of beauty on attitudes toward sex measured using Wave 1 only or Wave 2 only (not reported).

¹⁴Note that Table 6 shows analyses estimated in our main sample, which consists of men and women who were in a partnership at the time of the Wave 3–5 survey(s). Because the relationship between beauty and attitudes toward sex may also be relevant for individuals not in a relationship, in Table A.7 in the Appendix, we replicate this analysis on the sample of all the respondents who participated in any of Waves 3–5, regardless of partnership status at the time of the survey(s). The results on the differently defined sample remain virtually unchanged.

6 Conclusion

In this paper, we analyze the relationship between perceived physical attractiveness and the likelihood of committing sexual violence. Our main insight is that men who are perceived as less attractive are more prone to developing frustration that may manifest in aggressive or violent behavior within the sexual sphere. This pattern, while somewhat mitigated by personality traits (such as conscientiousness and neuroticism) and levels of social inclusion during high school, is strongly influenced by parental education and perceived neighborhood cohesion.

While most forms of violence have declined, violence against women persists—making it crucial to identify and understand all contributing factors. A deeper investigation of possible mechanisms behind sexual violence is essential to inform policy design aimed at preventing the emergence of predatory behaviors. Our findings have important implications. Recognizing that lower perceived attractiveness can foster frustration and toxicity within romantic relationships prompts reflection on the value society places on physical appearance. This value has been further amplified by the rise of social media and the cultural emphasis on physical image. While there is already large evidence that perceptions of physical beauty affect a variety of social and economic outcomes, this paper documents, for the first time, another effect of beauty that extends beyond individuals and has important consequences for those around them—namely, sexual violence within couples. This link should raise concerns about the risks associated with the amplification of narrow beauty ideals, often reinforced by the media, although in the last decade a tendency of embracing a plurality of aesthetic models emerged.

In addition, evidence that higher parental education mitigates sexual violence underscores once again the broader spillover effects of education—relevant not only for labor market outcomes, but also for emotional well-being and social relations, contributing to the development of a more conscious society. Finally, the role of neighborhood cohesion highlights the importance of rethinking our increasingly individualistic societies, where social bonds and community life have weakened compared to the past. Strengthening community support networks can help address individual vulnerabilities, limit their impact on key dimensions of personal development, and reduce the likelihood of behavioral escalation that may culminate in violent attitudes.

Tables and Figures

Table 1: Descriptive statistics

	Men (N=7920)		Women (N=8716)	
	Mean	(SD)	Mean	(SD)
Physical attractiveness (1-5 scale)	3.454	(0.811)	3.692	(0.901)
Very unattractive	0.015	(0.121)	0.021	(0.144)
Unattractive	0.052	(0.222)	0.037	(0.189)
Average	0.506	(0.500)	0.37	(0.483)
Attractive	0.319	(0.466)	0.373	(0.484)
Very attractive	0.108	(0.311)	0.199	(0.399)
<i>Control variables</i>				
Age	15.724	(1.711)	15.567	(1.712)
Family income	46.523	(44.449)	46.608	(48.194)
Family income missing	0.234	(0.423)	0.258	(0.437)
Number of siblings	2.626	(1.452)	2.573	(1.435)
Born in US	0.918	(0.274)	0.919	(0.272)
Born outside US	0.082	(0.274)	0.081	(0.272)
White	0.36	(0.480)	0.363	(0.481)
Black	0.139	(0.346)	0.162	(0.369)
Hispanic	0.069	(0.253)	0.069	(0.253)
Asian	0.053	(0.225)	0.043	(0.204)
Other ethnicity	0.379	(0.485)	0.362	(0.481)
Mother no secondary education degree	0.135	(0.342)	0.162	(0.369)
Mother secondary education degree	0.373	(0.484)	0.374	(0.484)
Mother some college	0.117	(0.321)	0.128	(0.334)
Mother college degree	0.267	(0.442)	0.245	(0.430)
Mother education missing	0.107	(0.310)	0.091	(0.288)
Father no secondary education degree	0.105	(0.307)	0.108	(0.310)
Father secondary education degree	0.268	(0.443)	0.251	(0.433)
Father some college	0.086	(0.280)	0.078	(0.268)
Father college degree	0.229	(0.420)	0.208	(0.406)
Father education missing	0.312	(0.463)	0.355	(0.479)
Wave(s) participated: 3	0.064	(0.246)	0.035	(0.184)
Wave(s) participated: 4	0.071	(0.257)	0.045	(0.207)
Wave(s) participated: 5	0.029	(0.168)	0.025	(0.157)
Wave(s) participated: 3, 4	0.234	(0.424)	0.169	(0.375)
Wave(s) participated: 4, 5	0.089	(0.285)	0.088	(0.283)
Wave(s) participated: 3, 5	0.05	(0.218)	0.046	(0.210)

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	Men (N=7920)		Women (N=8716)	
	Mean	(SD)	Mean	(SD)
Wave(s) participated: 3, 4, 5	0.462	(0.499)	0.591	(0.492)
<i>Mechanism variables</i>				
Conscientiousness	-0.117	(1.365)	0.124	(1.420)
Neuroticism	-0.31	(1.302)	0.246	(1.378)
Agreeableness	-0.39	(1.484)	0.365	(1.309)
Openness	0.175	(1.400)	-0.139	(1.340)
Extroversion	-0.043	(1.459)	0.06	(1.461)
Self-esteem	0.275	(1.450)	-0.222	(1.637)
GPA	-0.113	(1.001)	0.162	(0.972)
Social isolation	-0.035	(0.633)	0.008	(0.705)
Neighbourhood cohesion index	2.276	(0.937)	2.175	(0.998)
Inform neighbour about child in trouble	4.306	(0.883)	4.278	(0.902)
<i>Outcome variable</i>				
Sexual violence	0.099	(0.299)	0.054	(0.227)

Notes: The table reports the mean and standard deviation for each of our control, moderating, and mediating variables as well as for our outcome variable, separately by sex.

Table 2: Beauty and sexual violence perpetration

	Men					Women				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Physical attractiveness	-0.009*** (0.004)	-0.010*** (0.004)	-0.011** (0.005)	-0.013*** (0.005)	-0.013*** (0.005)	-0.004 (0.003)	-0.004 (0.003)	-0.004 (0.003)	-0.005 (0.003)	-0.004 (0.003)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
School FE	No	Yes	No	Yes	Absorbed	No	Yes	No	Yes	Absorbed
Grade FE	No	Yes	No	Yes	Yes	No	Yes	No	Yes	Yes
Interviewer FE	No	No	Yes	Yes	Absorbed	No	No	Yes	Yes	Absorbed
Sch-by-int FE	No	No	No	No	Yes	No	No	No	No	Yes
Observations	7920	7920	7920	7920	7920	8716	8716	8716	8716	8716
Dep. var. mean	0.099	0.099	0.099	0.099	0.099	0.054	0.054	0.054	0.054	0.054
Cluster SE	School	School	Intvw	Intvw	Sch-by-int	School	School	Intvw	Intvw	Sch-by-int
R ²	0.019	0.041	0.090	0.110	0.172	0.011	0.031	0.062	0.083	0.136

Notes: The table shows the effect of physical attractiveness on the likelihood of having perpetrated sexual violence on one's partner. Physical attractiveness is a discrete score ranging from 1 (very unattractive) to 5 (very attractive) assigned to students by interviewers in Wave 1. Sexual violence is a binary variable, coded as 1 if the respondent reported forcing sexual relations on their partner at least once in Wave 3, 4, or 5, and coded as 0 if the respondent reported never having forced sexual relations on their partner. Control variables include age, family income, an indicator for missing family income, number of siblings, birth order, indicators for ethnicity, indicators for mother's and father's level of education, indicators for missing mother's and/or father's level of education, indicators for the waves the respondent participated among Wave 3, 4, and 5. Standard errors, clustered as indicated, in parenthesis. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 3: Beauty and sexual violence perpetration, robustness checks

	Sexual violence perpetration (W3-W4-W5)		Sexual violence perpetration (W4-W5)		Sexual violence perpetration (W3-W4-W5)		Sexual violence perpetration (Alternative measure, W1)
	Men (1)	Women (2)	Men (3)	Women (4)	Men (5)	Women (6)	Men (7)
W2 physical attractiveness (1-5)	-0.014** (0.007)	-0.002 (0.004)					
W1 physical attractiveness (1-5)			-0.010** (0.004)	-0.002 (0.002)			-0.015** (0.006)
W1 physical attractiveness dummies (omitted: very attractive)							
Attractive					0.023* (0.014)	0.008 (0.008)	
Average					0.043*** (0.014)	0.005 (0.008)	
Unattractive					0.027 (0.019)	0.014 (0.016)	
Very unattractive					0.033 (0.032)	0.029 (0.022)	
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
W2 sch-by-int FE	Yes	Yes	No	No	No	No	No
W2 grade FE	Yes	Yes	No	No	No	No	No
W1 grade FE	No	No	Yes	Yes	Yes	Yes	Yes
W1 sch-by-int FE	No	No	Yes	Yes	Yes	Yes	Yes
Observations	5259	5879	7339	8353	7920	8716	3366
Dep. var. mean	0.101	0.056	0.072	0.022	0.099	0.054	0.039
R ²	0.155	0.127	0.180	0.140	0.172	0.137	0.277

Notes: The table shows a series of robustness checks for the estimated effect of physical attractiveness on sexual violence perpetration. Columns (1) and (2) assess whether the results remain robust when beauty ratings are measured in Wave 2 instead of Wave 1 (while keeping the outcome variable as defined in Table 2). Columns (3) and (4) test robustness to redefining the outcome variable based on Waves 4 and 5 only, rather than Waves 3–5 (with physical attractiveness defined as in Table 2). In Columns (5) and (6), the key independent variable—physical attractiveness—is operationalized as a set of dummy variables, with “very attractive” as the omitted reference category (outcome variable as in Table 2). Finally, Column (7) examines the effect of physical attractiveness on an alternative measure of sexual violence perpetration. Specifically, it uses Wave 1 responses to the question asking male respondents whether they had ever “physically forced someone to have sexual intercourse against her will.” This measure includes men who participated in any of Waves 3–5 and who had ever had sex, whether consensually or not. Control variables include age, family income, an indicator for missing family income, number of siblings, birth order, indicators for ethnicity, indicators for mother’s and father’s level of education, indicators for missing mother’s and/or father’s level of education, indicators for the waves the respondent participated among Wave 3, 4, and 5. Standard errors, clustered as indicated, in parenthesis. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 4: Beauty and self-reported GPA versus transcribed GPA

	Men		Women	
	GPA Δ (1)	Inflated GPA (2)	GPA Δ (3)	Inflated GPA (4)
Physical attractiveness	-0.014 (0.014)	-0.004 (0.009)	-0.006 (0.011)	-0.015 (0.010)
Controls	Yes	Yes	Yes	Yes
Grade FE	Yes	Yes	Yes	Yes
Sch-by-int FE	Yes	Yes	Yes	Yes
Observations	3727	3727	4145	4145
Dep. var. mean	0.533	0.760	0.415	0.699
R ²	0.265	0.213	0.242	0.193

Notes: The table shows whether physical attractiveness is correlated with measures of school grades discrepancy. In particular, 'GPA Δ ' is constructed as the difference between a student's self-reported Grade Point Average (GPA) and the student's transcribed GPA. The self-reported GPA is constructed as the average of a student's grades in math, history, science, and English, as reported by the student in Wave 1. The transcribed GPA is the average of the student's grades in the same subjects, as derived from official school transcripts (more information on school transcripts is available at this link: <https://www.laits.utexas.edu/ahaa/home>). Both self-reported GPA and transcribed GPA are standardized within grade level. Because school transcripts are available for students in high school (grades 9–12), we perform this robustness check on students attending grades 9–12 in Wave 1 and for whom we can retrieve the official transcripts of the grades obtained while attending school in Wave 1. 'Inflated GPA' is a binary variable coded 1 if GPA $\Delta > 0$, meaning that the student's self-reported grades are higher than the official transcribed ones, 0 otherwise. Physical attractiveness, sexual violence perpetration, and control variables are defined as in Table 2. Standard errors, clustered as indicated, in parenthesis. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 5: Testing the significance of the indirect mediating effect following Preacher and Hayes (2004)

	GPA	Self-esteem	Social inclusion	Personality traits
Indirect effect	-0.0007	-0.0008	-0.0016	-0.0024
95% percentile bootstrap CI	[-0.0017, 0.0002]	[-0.0015, -0.0002]	[-0.0025,-0.0007]	[-0.0038,-0.0011]
% change in association	5.07%	6.15%	11.94%	17.14%

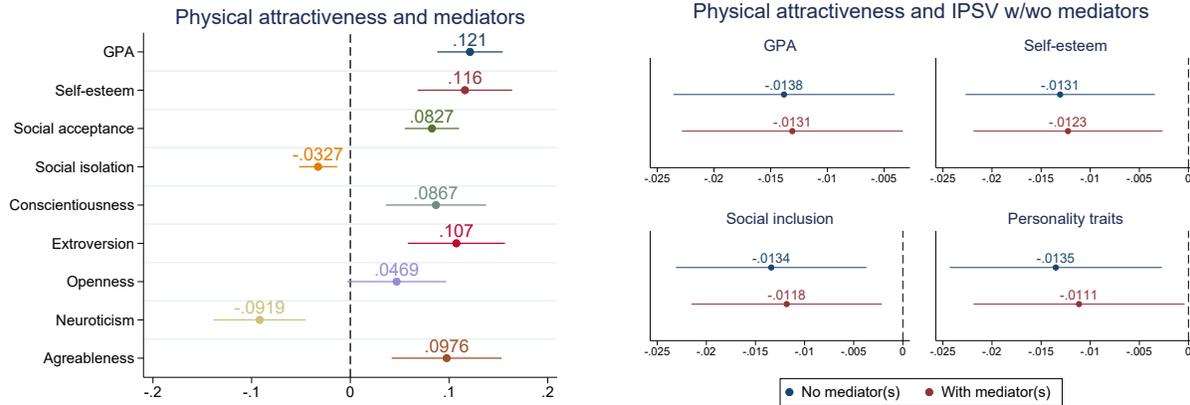
Notes: This table shows for each mediation analysis shown in Figure 1, the indirect effect (the difference in the key coefficient of interest between the regression with and without mediator(s)), 95% percentile bootstrap confidence intervals computed following Preacher and Hayes (2004) ($R=1000$), and the percentage change in the key coefficient of interest between the specification with and without mediator(s).

Table 6: Beauty and attitudes toward sex

<i>Panel A: Men</i>	If sex, more attractive to women (1)	If sex, feel less lonely (2)	If sex, gain more respect from friends (3)	If sex, have a lot of physical pleasure (4)
Physical attractiveness	0.020 (0.016)	0.043*** (0.015)	0.023 (0.016)	-0.034** (0.015)
Controls	Yes	Yes	Yes	Yes
Geade FE	Yes	Yes	Yes	Yes
Sch-by-int FE	Yes	Yes	Yes	Yes
Observations	7483	7491	7522	7480
Dep. var. mean	3.329	3.206	3.330	2.333
R ²	0.182	0.184	0.202	0.230
<i>Panel B: Women</i>	If sex, more attractive to men (1)	If sex, feel less lonely (2)	If sex, gain more respect from friends (3)	If sex, have a lot of physical pleasure (4)
Physical attractiveness	0.042*** (0.011)	0.058*** (0.012)	0.014 (0.012)	-0.015 (0.012)
Controls	Yes	Yes	Yes	Yes
Geade FE	Yes	Yes	Yes	Yes
Sch-by-int FE	Yes	Yes	Yes	Yes
Observations	8152	8163	8187	8096
Dep. var. mean	3.919	3.858	3.986	3.018
R ²	0.160	0.171	0.195	0.265

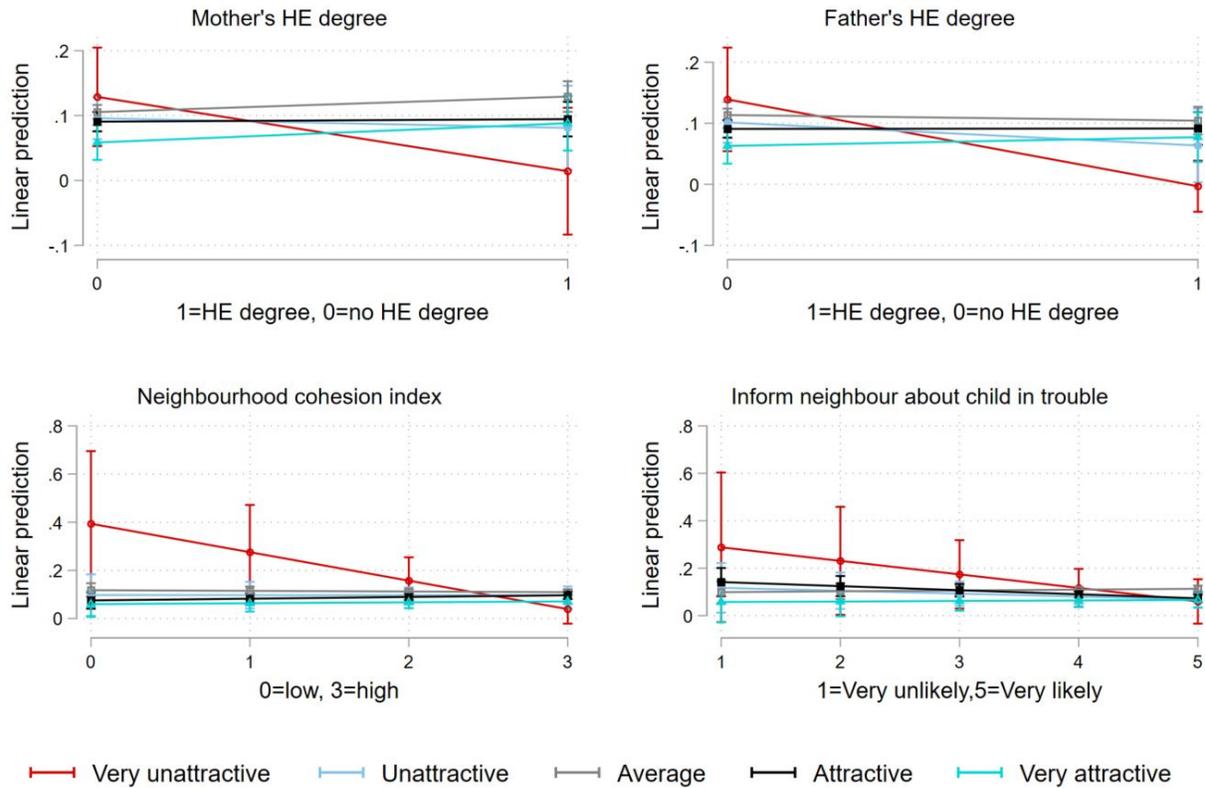
Notes: This table presents the effect of physical attractiveness on attitudes toward sex, for men (Panel A) and women (Panel B). Attitudes are measured using responses to the following items: “If you had sexual intercourse, (i) it would make you more attractive to women [if male respondent] / to men [if female respondent]; (ii) you would feel less lonely; (iii) your friends would respect you more; and (iv) it would give you a great deal of physical pleasure.” Responses are coded on a five-point Likert scale ranging from 1 (“strongly agree”) to 5 (“strongly disagree”). Attitudes toward sex were asked in Waves 1 and 2: in Wave 1, to unmarried respondents aged 15 or older, whereas in Wave 2 to all unmarried respondents. To maximize the number of observations, we take the average of responses across Waves 1 and 2 provided by individuals in our analysis sample (that is, by those individuals for whom sexual violence perpetration questions are asked in any of Waves 3–5) and include an indicator for whether the respondent participated in both Waves 1 and 2 or in Wave 1 only. Physical attractiveness is defined as in Table 2. Standard errors, clustered school by interviewer level, in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Figure 1: Mediating mechanisms of the association between physical attractiveness and sexual violence perpetration, within the sample of men



Notes: This figure shows the (possible) mediating roles of education, self-esteem, social inclusion, and personality traits in the relationship between physical attractiveness and sexual violence perpetration among men. Physical attractiveness is a discrete score ranging from 1 (very unattractive) to 5 (very attractive) assigned to students by interviewers in Wave 1. Sexual violence is a binary variable, coded as 1 if the respondent reported forcing sexual relations on their partner at least once in Wave 3, 4, or 5, and coded as 0 if the respondent reported never having forced sexual relations on their partner. Panel (a) presents the regression coefficients of the association between physical attractiveness and mediator(s), each estimated in a separate regression. Panel (b) shows the estimated coefficients for the association between physical attractiveness and sexual violence perpetration, in a regression with the mediator(s) and another regression without the mediator(s) in the model. Error bars represent 95% confidence intervals.

Figure 2: Moderators of the effect of physical attractiveness on sexual violence perpetration, within the sample of men



Notes: This figure shows the roles of parental education (upper panels) and neighbourhood cohesion (bottom panels) as moderators of the effect of physical attractiveness on sexual violence perpetration, among men. For each moderating model, we run a regression where we interact the key variable of interest with the moderator, and plot the predicted probability of sexual violence perpetration for each combination of physical attractiveness score and the moderator's value. 'Mother's HE degree' ('Father's HE degree') is a binary variable coded 1 if the mother (father) has a higher education degree, 0 otherwise. 'Neighbourhood cohesion index' is a discrete variable constructed by summing the number of the following Wave 1 statements reported as true by the student: 'You know most of the people in your neighborhood'; 'In the past month, you have stopped on the street to talk with someone who lives in your neighborhood'; 'People in this neighborhood look out for each other'. 'Inform neighbour about child in trouble' is a discrete variable indicating how likely a parent would tell a neighbour if they saw their child getting into trouble. Physical attractiveness is a discrete score ranging from 1 (very unattractive) to 5 (very attractive) assigned to students by interviewers in Wave 1. Sexual violence is a binary variable, coded as 1 if the respondent reported forcing sexual relations on their partner at least once in Wave 3, 4, or 5, and coded as 0 if the respondent reported never having forced sexual relations on their partner. Error bars represent 95% confidence intervals.

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Appendix

A Supplementary Tables and Figures

Table A.1: Beauty and sexual violence perpetration by waves

	Men			Women		
	Wave 3 (1)	Wave 4 (2)	Wave 5 (3)	Wave 3 (4)	Wave 4 (5)	Wave 5 (6)
Physical attractiveness	-0.011** (0.005)	-0.008** (0.004)	-0.002 (0.004)	-0.003 (0.004)	-0.000 (0.002)	-0.002 (0.002)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Grade FE	Yes	Yes	Yes	Yes	Yes	Yes
Sch-by-intvw FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	4981	6650	4785	5732	7639	6272
Dep. var. mean	0.062	0.056	0.041	0.054	0.017	0.011
R ²	0.219	0.188	0.213	0.182	0.144	0.145

Notes: The table shows the effect of physical attractiveness on the likelihood of having perpetrated sexual violence on one's partner, with the outcome variable constructed separately for Wave 3, Wave 4, and Wave 5. Physical attractiveness is a discrete score ranging from 1 (very unattractive) to 5 (very attractive) assigned to students by interviewers in Wave 1. Controls are defined as in Table 2. Standard errors, clustered at the school-by-interviewer level, are in parenthesis. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table A.2: Beauty and sexual violence perpetration, full regression table

	Men					Women				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Physical attractiveness	-0.009*** (0.003)	-0.010*** (0.004)	-0.011*** (0.004)	-0.013*** (0.004)	-0.013*** (0.005)	-0.004 (0.003)	-0.004 (0.003)	-0.004 (0.003)	-0.005 (0.003)	-0.004 (0.003)
Family income	-0.000** (0.000)	-0.000** (0.000)	-0.000** (0.000)	-0.000*** (0.000)	-0.000*** (0.000)	-0.000* (0.000)	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)
Birth order	-0.003 (0.004)	-0.001 (0.004)	-0.001 (0.005)	-0.000 (0.005)	0.000 (0.005)	-0.002 (0.003)	-0.001 (0.003)	-0.002 (0.003)	-0.002 (0.003)	-0.003 (0.003)
Non-US born	0.045*** (0.013)	0.040*** (0.014)	0.047*** (0.018)	0.045** (0.018)	0.040** (0.018)	0.009 (0.008)	0.003 (0.010)	0.004 (0.011)	0.002 (0.012)	0.002 (0.012)
Black	0.039*** (0.013)	0.012 (0.014)	0.016 (0.015)	0.013 (0.016)	0.018 (0.016)	0.042*** (0.008)	0.027** (0.010)	0.030*** (0.011)	0.029*** (0.011)	0.026** (0.011)
Hispanic	0.009 (0.019)	-0.007 (0.025)	-0.008 (0.016)	-0.003 (0.017)	-0.006 (0.017)	0.027*** (0.010)	0.011 (0.014)	0.016 (0.013)	0.012 (0.013)	0.014 (0.014)
Asian	0.057*** (0.019)	0.023 (0.020)	0.026 (0.024)	0.027 (0.025)	0.030 (0.025)	0.015 (0.010)	-0.001 (0.011)	0.002 (0.015)	-0.002 (0.015)	-0.003 (0.016)
Other	0.018** (0.008)	0.005 (0.008)	0.001 (0.008)	0.004 (0.009)	0.004 (0.009)	0.024*** (0.006)	0.016** (0.007)	0.017*** (0.007)	0.018*** (0.007)	0.014** (0.007)
Family income missing	0.011 (0.008)	0.009 (0.008)	0.010 (0.009)	0.010 (0.009)	0.010 (0.009)	-0.005 (0.006)	-0.005 (0.005)	-0.002 (0.006)	-0.003 (0.007)	-0.003 (0.007)
Age	-0.004 (0.002)	-0.005 (0.005)	-0.003 (0.002)	-0.007 (0.005)	-0.006 (0.005)	-0.001 (0.001)	-0.001 (0.004)	-0.001 (0.002)	-0.002 (0.004)	-0.001 (0.004)
Mother SE degree	-0.026** (0.011)	-0.024** (0.011)	-0.020 (0.013)	-0.019 (0.013)	-0.018 (0.013)	0.010 (0.007)	0.013* (0.007)	0.012 (0.008)	0.013 (0.008)	0.014* (0.008)
Mother some college	-0.017 (0.015)	-0.018 (0.016)	-0.014 (0.016)	-0.015 (0.016)	-0.018 (0.017)	0.007 (0.009)	0.010 (0.009)	0.010 (0.010)	0.012 (0.010)	0.010 (0.010)
Mother college degree	0.003 (0.012)	-0.002 (0.013)	0.003 (0.015)	0.002 (0.015)	-0.004 (0.015)	0.003 (0.008)	0.005 (0.008)	0.006 (0.008)	0.007 (0.009)	0.004 (0.009)

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	Men					Women				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Mother education missing	-0.021*	-0.022*	-0.026*	-0.026*	-0.029*	0.013	0.015	0.014	0.013	0.014
	(0.012)	(0.012)	(0.015)	(0.015)	(0.015)	(0.010)	(0.010)	(0.011)	(0.012)	(0.012)
Father SE degree	-0.020	-0.015	-0.018	-0.021	-0.018	-0.008	-0.004	-0.005	-0.003	-0.003
	(0.012)	(0.013)	(0.014)	(0.015)	(0.015)	(0.009)	(0.009)	(0.010)	(0.010)	(0.011)
Father some college	-0.017	-0.017	-0.027	-0.028	-0.022	0.000	0.002	-0.003	-0.003	-0.001
	(0.015)	(0.015)	(0.017)	(0.018)	(0.018)	(0.012)	(0.012)	(0.014)	(0.013)	(0.014)
Father college degree	-0.020	-0.019	-0.020	-0.021	-0.021	-0.000	0.005	0.001	0.003	0.007
	(0.013)	(0.014)	(0.015)	(0.016)	(0.016)	(0.009)	(0.010)	(0.011)	(0.011)	(0.012)
Father education missing	-0.004	-0.005	-0.013	-0.015	-0.012	0.001	0.000	0.003	0.002	0.005
	(0.012)	(0.013)	(0.014)	(0.015)	(0.015)	(0.009)	(0.010)	(0.010)	(0.010)	(0.011)
Number of full siblings	0.004	0.003	0.003	0.003	0.003	0.004	0.003	0.004	0.004	0.005
	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
Wave(s) participated: 4	0.010	0.017	0.021	0.022	0.027*	-0.026*	-0.028*	-0.035**	-0.041***	-0.049***
	(0.014)	(0.015)	(0.015)	(0.014)	(0.016)	(0.015)	(0.015)	(0.015)	(0.015)	(0.016)
Wave(s) participated: 5	-0.011	-0.003	-0.009	-0.010	-0.005	-0.033***	-0.027**	-0.038***	-0.038***	-0.039**
	(0.015)	(0.015)	(0.017)	(0.018)	(0.018)	(0.013)	(0.013)	(0.014)	(0.014)	(0.016)
Wave(s) participated: 3,4	0.068***	0.071***	0.071***	0.073***	0.074***	0.015	0.018	0.012	0.009	0.005
	(0.016)	(0.016)	(0.013)	(0.014)	(0.014)	(0.015)	(0.014)	(0.014)	(0.014)	(0.015)
Wave(s) participated: 4,5	0.037***	0.048***	0.052***	0.051***	0.049***	-0.021	-0.017	-0.023*	-0.024*	-0.026*
	(0.014)	(0.015)	(0.016)	(0.016)	(0.016)	(0.013)	(0.013)	(0.013)	(0.013)	(0.015)
Wave(s) participated: 3,5	0.038*	0.042**	0.040**	0.043**	0.040**	0.022	0.026	0.017	0.016	0.017
	(0.019)	(0.020)	(0.018)	(0.019)	(0.020)	(0.016)	(0.016)	(0.018)	(0.018)	(0.019)
Wave(s) participated: 3,4,5	0.075***	0.080***	0.083***	0.082***	0.084***	0.018	0.022*	0.016	0.015	0.009
	(0.013)	(0.014)	(0.012)	(0.012)	(0.013)	(0.014)	(0.013)	(0.012)	(0.013)	(0.014)
Constant	0.138***	0.174**	0.150***	0.213**	0.195**	0.048	0.052	0.058*	0.077	0.061
	(0.045)	(0.081)	(0.045)	(0.091)	(0.093)	(0.035)	(0.068)	(0.034)	(0.068)	(0.073)
School FE	No	Yes	No	Yes	Absorbed	No	Yes	No	Yes	Absorbed

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	Men					Women				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Grade FE	No	Yes	No	Yes	Yes	No	Yes	No	Yes	Yes
Interviewer FE	No	No	Yes	Yes	Absorbed	No	No	Yes	Yes	Absorbed
Sch-by-int FE	No	No	No	No	Yes	No	No	No	No	Yes
Observations	7920	7920	7920	7920	7920	8716	8716	8716	8716	8716
Dep. var. mean	0.099	0.099	0.099	0.099	0.099	0.054	0.054	0.054	0.054	0.054
Cluster SE	School	School	Intvw	Intvw	Sch-by-int	School	School	Intvw	Intvw	Sch-by-int
R ²	0.019	0.041	0.090	0.110	0.172	0.011	0.031	0.062	0.083	0.136

Notes: The table shows the effect of physical attractiveness on the likelihood of having perpetrated sexual violence on one's partner, displaying estimated coefficients of all control variables. Physical attractiveness is a discrete score ranging from 1 (very unattractive) to 5 (very attractive) assigned to students by interviewers in Wave 1. Sexual violence is a binary variable, coded as 1 if the respondent reported forcing sexual relations on their partner at least once in Wave 3, 4, or 5, and coded as 0 if the respondent reported never having forced sexual relations on their partner. Control variables include age, family income, an indicator for missing family income, number of siblings, birth order, indicators for ethnicity, indicators for mother's and father's level of education, indicators for missing mother's and/or father's level of education, indicators for the waves the respondent participated among Wave 3, 4, and 5. Standard errors, clustered as indicated, in parenthesis. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A.3: Mediation table, GPA

	Sexual violence perpetration		GPA
	(1)	(2)	(3)
Physical attractiveness	-0.0138*** (0.005)	-0.0131*** (0.005)	0.1212*** (0.017)
GPA		-0.0061 (0.004)	
Controls	Yes	Yes	Yes
Grade FE	Yes	Yes	Yes
Sch-by-invw FE	Yes	Yes	Yes
Observations	7837	7837	7837
R2	0.173	0.173	0.307

Notes: This table reports estimated coefficients from the mediation analysis with GPA as the mediator. Column (1) presents results from a regression of sexual violence perpetration on the full set of controls, excluding the mediator. Column (2) reports results from a regression of sexual violence perpetration on the full set of controls, including the mediator. Column (3) shows the regression of the mediator on the key independent variable of interest. Physical attractiveness is a discrete score ranging from 1 (very unattractive) to 5 (very attractive) assigned to students by interviewers in Wave 1. Sexual violence is a binary variable, coded as 1 if the respondent reported forcing sexual relations on their partner at least once in Wave 3, 4, or 5, and coded as 0 if the respondent reported never having forced sexual relations on their partner. Standard errors in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table A.4: Mediation table, self-esteem

	Sexual violence perpetration		Self-esteem
	(1)	(2)	(3)
Physical attractiveness	-0.0131*** (0.005)	-0.0123** (0.005)	0.1161*** (0.024)
Self-esteem		-0.0069*** (0.002)	
Controls	Yes	Yes	Yes
Grade FE	Yes	Yes	Yes
Sch-by-invw FE	Yes	Yes	Yes
Observations	7906	7906	7906
R2	0.172	0.173	0.205

Notes: This table reports estimated coefficients from the mediation analysis with self-esteem as the mediator. Column (1) presents results from a regression of sexual violence perpetration on the full set of controls, excluding the mediator. Column (2) reports results from a regression of sexual violence perpetration on the full set of controls, including the mediator. Column (3) shows the regression of the mediator on the key independent variable of interest. Physical attractiveness is a discrete score ranging from 1 (very unattractive) to 5 (very attractive) assigned to students by interviewers in Wave 1. Sexual violence is a binary variable, coded as 1 if the respondent reported forcing sexual relations on their partner at least once in Wave 3, 4, or 5, and coded as 0 if the respondent reported never having forced sexual relations on their partner. Standard errors in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table A.5: Mediation table, social inclusion

	Sexual violence perpetration		Social acceptance	Social isolation
	(1)	(2)	(3)	(4)
Physical attractiveness	-0.0134*** (0.005)	-0.0118** (0.005)	0.0824*** (0.014)	-0.0325*** (0.010)
Social acceptance		-0.0121*** (0.005)		
Social isolation		0.0178*** (0.006)		
Controls	Yes	Yes	Yes	Yes
Grade FE	Yes	Yes	Yes	Yes
Sch-by-intvw FE	Yes	Yes	Yes	Yes
Observations	7866	7866	7866	7866
R2	0.173	0.176	0.186	0.191

Notes: This table reports estimated coefficients from the mediation analysis with social isolation and social acceptance as mediators. Column (1) presents results from a regression of sexual violence perpetration on the full set of controls, excluding the mediator. Column (2) reports results from a regression of sexual violence perpetration on the full set of controls, including the mediator. Columns (3) and (4) show the regression of each mediator on the key independent variable of interest. Physical attractiveness is a discrete score ranging from 1 (very unattractive) to 5 (very attractive) assigned to students by interviewers in Wave 1. Sexual violence is a binary variable, coded as 1 if the respondent reported forcing sexual relations on their partner at least once in Wave 3, 4, or 5, and coded as 0 if the respondent reported never having forced sexual relations on their partner. Standard errors in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table A.6: Mediation table, personality traits

	Sexual violence perpetration		Conscient.	Extroversion	Openness	Neuroticism	Agreeableness
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Physical attractiveness	-0.014** (0.006)	-0.011** (0.005)	0.087*** (0.026)	0.107*** (0.025)	0.047* (0.026)	-0.092*** (0.024)	0.098*** (0.028)
Conscient.		-0.011*** (0.003)					
Extroversion		0.004 (0.003)					
Openness		0.001 (0.003)					
Neuroticism		0.018*** (0.003)					
Agreeableness		-0.002 (0.003)					
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Grade FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Sch-by-intvw FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	6764	6764	6780	6775	6780	6781	6774
R2	0.190	0.197	0.188	0.186	0.205	0.187	0.192

Notes: This table reports estimated coefficients from the mediation analysis with personality traits as mediators. Column (1) presents results from a regression of sexual violence perpetration on the full set of controls, excluding the mediator. Column (2) reports results from a regression of sexual violence perpetration on the full set of controls, including the mediator. Columns (3)-(7) show the regression of each mediator on the key independent variable of interest. Physical attractiveness is a discrete score ranging from 1 (very unattractive) to 5 (very attractive) assigned to students by interviewers in Wave 1. Sexual violence is a binary variable, coded as 1 if the respondent reported forcing sexual relations on their partner at least once in Wave 3, 4, or 5, and coded as 0 if the respondent reported never having forced sexual relations on their partner. Standard errors in parentheses.

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table A.7: Beauty and attitudes toward sex - inclusive sample

<i>Panel A: Men</i>	If sex, more attractive to women (1)	If sex, feel less lonely (2)	If sex, gain more respect from friends (3)	If sex, have a lot of physical pleasure (4)
Physical attractiveness	0.020 (0.015)	0.038*** (0.015)	0.020 (0.016)	-0.044*** (0.015)
Controls	Yes	Yes	Yes	Yes
Geade FE	Yes	Yes	Yes	Yes
Sch-by-int FE	Yes	Yes	Yes	Yes
Observations	7961	7970	8004	7959
Dep. var. mean	3.326	3.205	3.331	2.346
R ²	0.187	0.185	0.204	0.237
<i>Panel B: Women</i>	If sex, more attractive to men (1)	If sex, feel less lonely (2)	If sex, gain more respect from friends (3)	If sex, have a lot of physical pleasure (4)
Physical attractiveness	0.044*** (0.011)	0.059*** (0.012)	0.013 (0.013)	-0.016 (0.012)
Controls	Yes	Yes	Yes	Yes
Geade FE	Yes	Yes	Yes	Yes
Sch-by-int FE	Yes	Yes	Yes	Yes
Observations	8512	8523	8549	8450
Dep. var. mean	3.915	3.855	3.979	3.023
R ²	0.170	0.177	0.203	0.265

Notes: This table presents the effect of physical attractiveness on attitudes toward sex, for men (Panel A) and women (Panel B). Attitudes are measured using responses to the following items: “If you had sexual intercourse, (i) it would make you more attractive to women [if male respondent] / to men [if female respondent]; (ii) you would feel less lonely; (iii) your friends would respect you more; and (iv) it would give you a great deal of physical pleasure.” Responses are coded on a five-point Likert scale ranging from 1 (“strongly agree”) to 5 (“strongly disagree”). Attitudes toward sex were asked in Waves 1 and 2: in Wave 1, to unmarried respondents aged 15 or older, whereas in Wave 2 to all unmarried respondents. To maximize the number of observations, we take the average of responses across Waves 1 and 2 and include an indicator for whether the respondent participated in both Waves 1 and 2 or in Wave 1 only. This table relies on the sample of individuals who ever participated in any of Wave 3-5 but regardless of whether they were involved in a partnership at the time of the survey(s). Physical attractiveness is defined as in Table 2. Standard errors, clustered school by interviewer level, in parenthesis. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$