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The (Un)Equal Effect of Binary Socialisation on Adolescents' Exposure to Pornography: Girls' Empowerment and Boys' Sexism from a New Representative National Survey

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Abstract: Due to the increasing trend in the use of pornography recorded in recent years, along with the decreasing age of its consumers, many studies have investigated its potential negative effects on adolescents, who are developing their social and sexual identity, often producing inconsistent results. With the present study, which is based on a large representative sample of Italian students attending public upper secondary schools, predictors as well as negative and positive effects of pornography use on adolescents' attitudes, beliefs and well-being have been identified through a psychosocial approach. To achieve these results, the study involved a two-step analysis: first, the decision tree method for classification was applied to identify the main predictors of different frequencies in pornography consumption; subsequently, multinomial logistic regressions were carried out to detect the effects of pornography use. The results show a large difference between boys and girls in terms of frequency of pornography use, but also in the effects on adherence to gender roles, which is related to a still strongly stereotyped socialisation. Instead, similar negative effects on both girls and boys were found on self-esteem, body satisfaction, negative primary emotions and distress, suggesting the need for adequate sex education provided by both parents and schools to counteract taboos and blind internalisation of models of beauty and sexual behaviours provided by pornography.

Keywords: pornography; adolescence; gender roles; gender sexual roles; self-esteem; distress; body satisfaction; negative emotions; sex education; survey

1. Introduction

Pornography use has increased dramatically in recent years, especially due to the spread of free content easily accessible through the Internet [1,2]. This phenomenon is receiving growing international attention due to its spread and its key role in the sex education of young people, but also because of its effects on attitudes and behaviours, especially during the most delicate stages of development.

Pornography in the digital age has been defined as pictures or videos professionally produced or user-generated intended to sexually arouse the viewer [3]. More specifically, online pornography concerns images and videos of people showing themselves in explicit sexual behaviour online. Thus, it refers to images and videos showing half-naked and naked people available online or shared by other people through their smartphones or computer [4].

1.1. Pornography Consumption among Adolescents

Although the increase in pornography use concerns all segments of the population, research about its predictors and effects has focused particularly on adolescents and usually on males. The choice to focus on adolescence stems from the fact that it is a crucial phase of life in terms of the development of social and sexual identity, whose structure determines

the perception of the Self in relation to others, influencing intersubjective behaviours that are linked to social roles, especially gender roles [5]. It should also be considered that today, the psychosocial effects of the COVID-19 pandemic have added to the increase in exposure to pornography among adolescents compared to the past [6]. Starting from 2020, there has been a further increase in access to the most popular porn websites, especially among the youngest [7,8]. Actually, data on access to the main porn websites do not refer to minors, as it is forbidden for people under 18 years old. However, the access barriers can be easily bypassed, as they rely on information provided by users [9]. This suggests that adolescents under the age of 18 are also included in the access statistics released by the main porn websites and by google trends. Overall, when looking at recent studies on pornography use among adolescents carried out in Europe, the prevalence rates vary widely. In general, as for other phenomena linked to the online sphere, the age of the first use of online pornography is decreasing, and the frequency is increasing [10].

Reliable data indicate that the prevalence rate ranges between 60% and 98% for men and between 30% and 90% for women [11,12]. These shares concern both intentional and unintentional exposure to pornographic materials since such contents can also be shared through the most common instant messaging applications—especially WhatsApp and Telegram—while other times they can be accessed accidentally due to pop-ups or via incorrectly accessing a website. The reason why most of the studies have focused on males lies in the highly gendered rates of pornography consumption, with shares of pornography users and consumption frequencies consistently higher among boys than among girls [13,14]. This gender difference could be attributed to several factors, such as the more negative attitude towards pornography among girls or their tendency to underreport sexual habits in research, which are direct consequences of the sexual double standard which is widespread in Italy [15].

1.2. The Main Correlates of Pornography Consumption

Several associations between exposure to online pornography and adolescents' attitudes and behaviours have been analysed so far. Some of the results from these studies are inconsistent, due to the use of different techniques, often with both methodological and theoretical shortcomings. The main findings of the scientific literature show that online pornography use is more prevalent among adolescents who spend more time on the Internet, those with weak or problematic family relationships and those with a low level of parental education, but also among people with stereotyped gender attitudes [14,16]. In addition, some studies have shown higher frequencies of pornography use among adolescents who use alcohol and other psychotropic substances, as such consumption reduces social inhibition [17–19].

In this regard, an interesting element linked to pornography overexposure concerns changes to the brain, to the point of rewiring the pleasure centers of the brain, altering their structures and functions, through a mechanism similar to that of drug addiction, with comorbidities such as anxiety and depression [20]. Similarly, other studies have found positive and significant correlations between exposure to pornography and difficulties in emotion regulation, loneliness, and perceived stress [21]. However, the link between pornography and depressive symptoms has been socially motivated as a result of a kind of self-condemnation that users inflict on themselves due to a cognitive dissonance with their moral beliefs [22]. In this sense, religion acts in terms of self-regulation. The adherence to a religious belief can lead to conservative attitudes that hinders intentional and accidental exposure to pornography [23], showing a "moderating" effect that increases with participation in a religious community [24].

1.3. Pornography, Sexual Objectification of Women and Gender Norms

Within the research investigating the impacts of pornography use on sexual attitudes, behaviours and well-being of adolescents, only a few studies have emphasised its potential positive role as a source of sex education that allows for the development of positive

attitudes about sex [10,25]. Among the positive effects, some of these studies have included the sexual empowerment of women resulting from the correlation between pornography and sexual subjectivisation [26,27]. However, most studies have highlighted positive associations between pornography and sexually objectifying attitudes and behaviours with no significant variations by gender [28].

Bodies and practices depicted in mainstream pornography, which are often produced by men and targeted at men, provide sexual imagery where men play a dominant role over women, who in turn are presented as sex objects with perfect and standardised bodies. This type of content conveys stereotyped messages that have serious effects on adolescents' beliefs about gender roles, especially on sexual gender roles, with the risk of leading to violent practices, such as coercive and aggressive behaviours [29,30]. In this regard, several studies have focused their attention on possible aggressive effects of pornography use, finding statistical correlations between the two phenomena both in cross-sectional and longitudinal studies [31]. However, the current literature is controversial. In fact, the existence of a causal link between pornography consumption and male sexual violence has also been falsified [32].

The process of objectifying women's bodies does not derive exclusively from mainstream and heterosexual pornography but runs throughout society. However, according to the literature, the early use of pornography is significantly linked to women's objectification, controlling exposure to other forms of sexual content [33]. In this regard, many studies have pointed out that the beauty standards provided by mainstream pornography, which are unreal and unreachable by the average population, also produce distorted perceptions of body images among young people, including hypersexualisation and body dissatisfaction [34,35]. For this reason, adolescents' self-esteem in relation to pornography consumption has also been investigated, yielding inconsistent results. Some studies have found a negative correlation between pornography and self-esteem [36], others have found positive associations with men's self-esteem [37], while other research has not found a significant relationship [16]. These inconsistent results are likely due to the use of different research methodologies and techniques, and especially to the use of non-representative samples.

Regarding Italian adolescents, it was found that 44% of males aged between 14 and 17 use online pornography, compared to 5% of girls. A stronger perception of women as sex objects, as a result of further stereotyping of gender roles, was found in 70% of these adolescents. However, this phenomenon concerned only 30% of those who did not use pornography [38]. In addition, the use of pornography has been found to increase the idea that one can exert pressure to obtain sexual intercourse or coerce the partner into sexual relations, leading to a sexist use of sexting, turning it into a tool of control and humiliation [39].

1.4. The Present Study

This study is based on a large national survey conducted on a representative sample of Italian students attending public upper secondary schools. This survey was aimed at identifying the individual and social factors that promote or hinder the well-being, equal opportunities and social inclusion of adolescents. To this end, data on attitudes and behaviours related to changes in social interaction, the state of individual and relational well-being, offline and online violence and deviance, but also risky behaviours and socio-cultural conditioning were collected and analysed. The purpose of this study is to identify predictors of the frequency of pornography use and its effects on adolescents' attitudes, beliefs and well-being. The analyses conducted here are based on specific research hypotheses that will allow us to confirm, deny and enrich the results of the scientific literature. For this purpose, we will use both individual and environmental variables, providing a holistic explanation of the phenomenon. Among the most innovative variables that are part of the analysis there are the adherence to gender roles, the adherence to gender sexual roles, tolerance towards violence and discrimination, body satisfaction, self-esteem, prosociality, distress, and intensity of negative primary emotions.

Starting from the main results of the scientific literature examined above, this study is divided into two phases of analysis: 1. Predictors of the frequency of the use of pornography. 2. The effects of the use of pornography. These two stages of analysis are based on the following two research hypotheses:

H1. *The factors that predict a higher frequency of pornography use are increasing age, being male, Italian citizenship and hyperconnection. In addition, other predictors are attending technical and vocational schools, having a low family cultural background and the absence of religious beliefs. Furthermore, greater tolerance towards alcohol and other substances, low prosociality and poor-quality relationships with parents and friends predict higher pornography consumption.*

H2. *A high frequency of pornography use increases the adherence to gender roles and to gender sexual roles as well as the tolerance towards violence and discrimination. Furthermore, we hypothesise that a high frequency of pornography use negatively affects body satisfaction and self-esteem, increasing the intensity of negative primary emotions, anxiety and depression.*

2. Materials and Methods

2.1. Sampling Method and Research Tool

This research is based on a national survey carried out in Italy between October 2021 and April 2022 on a sample of students attending public upper secondary schools. A two-stage stratified cluster sampling was used to obtain a national representative sample. In the first stage, the national territory was divided into 5 macro-geographical areas (North West, North East, Center, South and Islands). For each of these areas, three cities with at least 100,000 inhabitants were randomly selected, for a total of 15 cities. In the second stage, using the lists of schools of the Italian Ministry of University and Research (MUR), for each city, three upper secondary schools were randomly selected—one for each type of the Italian school system: vocational institutes, technical institutes and lyceum—for a total of 45 schools. Finally, within each school, five classes were randomly selected—one for each academic year—for a total of 225 classes and 4228 respondents. No exclusion criteria were applied in the selection of the respondents, as all the students of the selected classes were interviewed.

The survey was carried out using the CAPI method, which represents one of the strengths of the present study. More specifically, an electronic questionnaire was administered alongside the presence of at least one researcher from the research team to ensure better control and quality in terms of the collected data (complete autonomy of interviewees in choosing the answers, better understanding of the questions, and minimisation of mutual influence) [40]. Furthermore, in this way, it was possible to limit teacher interference, minimising the risk of bias deriving from their presence. The semi-structured questionnaire consisted of 77 questions covering the following main dimensions of analysis: socio-economic family background, anagraphic information respondents, family climate, lifestyles, free time, peer interaction, use of social media, online behaviours and events, stereotypes, risk behaviours, opinions, values, relational and systemic trust, individual well-being, emotions, prosociality, and self-esteem.

2.2. Participants

As was mentioned before, the survey involved 225 classes and 4288 respondents. Of these, 41.2% were females, and 58.8% were males. In total, 38.9% of students attended a lyceum, 31.9% attended a technical institute and 29.2% attended a vocational school. In total, 21.9% attended class I, 20.6% attended class II, 19.2% attended class III, 19.6% attended class IV and 18.7% attended class V. With reference to the macro-areas, 20.1% attended a school located in the North East, 20.4% in the North West, 20.0% in the Centre, 20.2% in the South and 19.3% in the Islands. The respondents with foreign citizenship correspond to 7.3% of the sample.

2.3. Data Analysis

The analysis of the research results was carried out through the use of SPSS software (version 28 server IBM, Chicago, IL, USA) and SAS software (version 9.4 server © 2023 SAS Institute Inc., Cary, NC, USA). Schematically, the approach used here follows two steps of analysis: first, we applied the decision tree method for classification [41] to test a series of possible predictors using the frequency of pornography use as the target variable; next, we applied multinomial logistic analysis techniques to test the causal relationships between pornography use and attitudes, beliefs and well-being (Figure 1).
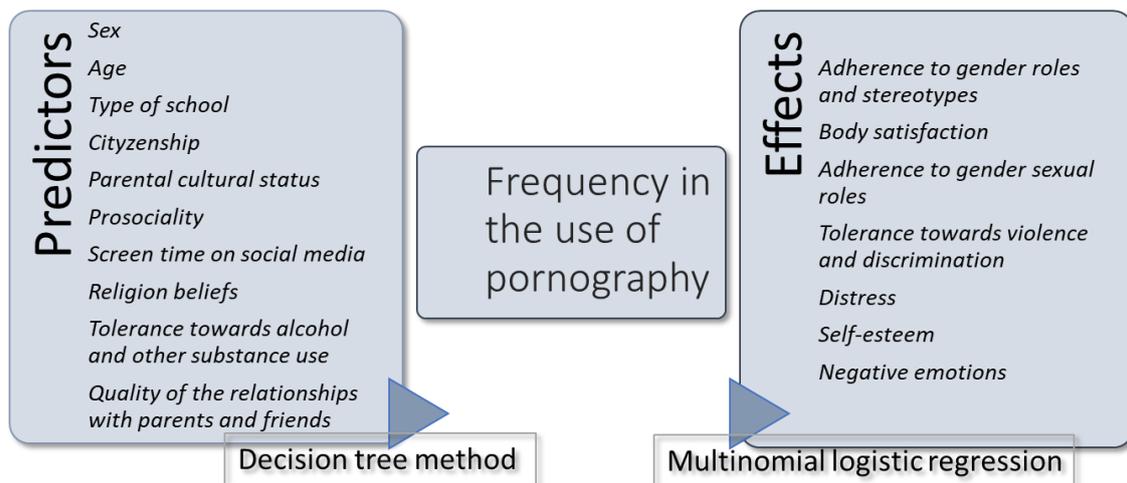
Figure 1. Theoretical model based on two stages of analysis.

In the first step: To identify the factors that predict the frequency of pornography use, we decided to use a supervised and non-parametric learning method, which is also suitable for testing nonlinear relationships. Therefore, we have chosen to apply the CHAID algorithm, which relies on chi-square statistics to check the independence between two or more classes. The dependent variable can be continuous or categorical, while the independent variables must be categorical, with 2 or more categories. For this reason, all of the selected variables have been recoded into categorical variables. The CHAID algorithm considers all predictors in order to provide the best distribution in terms of homogeneity (with respect to the dependent variable) within the groups (nodes) and the heterogeneity between them. This calculation is carried out through a split criterion, which in our case, is the chi-square test. In this way, segmentation provides a hierarchical sequence of partitions of the initial node through a top-down process. At each step of the process, the heterogeneity within the groups is reduced compared to the previous step. The segmentation process will continue iteratively until the obtained partitions are statistically significant. Thus, the final tree identifies significant predictors, and the final structure also provides information on the homogeneous subgroups.

In the second step: To verify the causal relationship between pornography consumption and the selected variables and indicators, the multinomial logistic regression method was applied. This method tests a null hypothesis (H_0) that assumes the statistical independence between the variable x (target variable on pornography use) and y (effects), where H_0: $\beta = 0$, i.e., x has no influence on the success probability P ($y = 1$). To test H_0, we use test Z, which involves the division between the maximum likelihood estimate of β for its standard error. This ratio is called Wald statistics and has a chi-square distribution. For nominal response variables, an extension of the logistic regression model provides a logistic model for each pair of response categories. In our application, a reference category was chosen and compared with every other category. In these models, it is assumed that the observations are independent and are distributed according to a multinomial distribution.

2.4. Measures

A set of indicators and variables has been used to carry out the data analysis. First of all, to measure the frequency of pornography use, the respondents were asked to indicate how often they consume pornographic materials on a 4-point frequency scale from "never" to "always". Validated scales have been used to measure prosociality, self-esteem and anxiety and depression, while all of the remaining indicators and variables are original. In each case of the synthesis of elementary information, an internal coherence index (Cronbach Alpha) was calculated to verify the accountability of the original variables. The description of each of the indicators and variables, as well as their distribution, is provided below.

Prosociality: To measure prosociality, which refers to actions that are intended to benefit others without expecting external rewards, we used the scale provided by Caprara and colleagues [42]. This scale consists of 16 statements with answers graded into five levels. The recoding process produced an indicator with a range of variation from 1 to 5, where 1 indicates a low tendency to prosocial behaviours and 5 a high tendency to prosocial behaviours. The mean of our sample was equal to 3.49.

Self-esteem: Concerning the measure of self-esteem, intended as a positive or negative orientation towards oneself, we used the Rosenberg self-esteem scale, which is widely used in social science research [43]. This indicator is non-linear, as the "desirable" values, which indicate healthy self-esteem, are located in the middle of the scale. Otherwise, the values at the extremes of the scale indicate different problems. In our sample, 34.1% of the respondents have low self-esteem, 49.2% have healthy self-esteem, and the remaining 16.7% have high self-esteem.

Distress: For the assessment of anxiety and depression, we used the Kessler psychological distress scale (K10) [44]. This indicator consists of 10 statements with answers graded into five levels, which measure the frequency of perceived anxious–depressive symptoms such as nervousness, sadness, restlessness, hopelessness, and a sense of worthlessness. Through the sum of the scores, ranging from 10 to 50, four levels of psychological distress were defined: absent (31.9%), low (21.5%), medium (17.1%) and high (29.5%).

Adherence to gender stereotypes: The indicator was built from a battery of eight statements to detect attitudes towards social gender stereotypes through a 4-point Likert scale. In particular, the statements submitted to the respondents concerned the ideas that men should decide the rules at home, be the main economic supporter of the family, that men are better than women in science and, on the other hand, that women should take care of household chores and their natural role is that of mother and wife. Each response was assigned a score from 1, corresponding to the maximum disagreement with the proposed statements, to 4, which indicates the maximum agreement. Four levels of adherence to gender stereotypes were identified: absent (22.2%), low (48.6%), medium (28.2%) and high (8.1%).

Adherence to gender roles: The indicators were built from the results of a variable designed to measure beliefs about the existence of male and female behavioural patterns that derive from the internalization of gender stereotypes. In this case, participants were given a list of actions and roles and asked who could perform them better: men, women or if sex was irrelevant. For the construction of the indicator of female gender roles, the following roles and actions were selected: cooking, dancing, teaching, taking care of children, cleaning, shopping, talking on the phone and reading. For the construction of the male gender roles indicator, the following roles and actions were selected: playing football, driving, being the boss at work, being a president, playing video games, fighting in sports, being a policeman, earning a lot of money and being a scientist. The indicator of adherence to female gender roles was built by assigning a point to each response that identified the action or role as purely female with 4 levels of adherence to female gender roles: absent (41%), low (38.5%), medium (13.8%) and high (6.7%). Similarly, the indicator of adherence to male gender roles was built by assigning a point to each response that identified the action or role as purely male with 4 levels of adherence to male gender roles: absent (37%), low (26.3%), medium (21.3%) and high (15.5%).

Quality of the relationship with parents: Regarding the quality of the relationship between the respondents and their parents, two indicators concerning the relationships with fathers and mothers were built. These indicators are based on two variables that, using the semantic differential technique [45], provided four pairs of adjectives of opposite meaning to describe the relationship with one's parents: Cold/Affectionate, Conflictual/Peaceful, Authoritarian/Permissive, and Morbid/Balanced. During the recoding process, each response was assigned a score from −3, closest to the negative adjective, to 3, closest to the positive adjective, with zero representing neutrality. Subsequently, the average of the obtained scores was calculated in order to measure the quality of the relationships on three levels: poor (mother 17.7%; father 21.1%), medium (mother 50%; father 49.2%) and high (mother 32.3%; father 29.7%).

Quality of the relationship with friends: The indicator was built starting from a variable that, through the semantic differential technique [45], proposed three pairs of adjectives of opposite meaning in order to describe one's friends: Cold/Affectionate, Boring/Funny, and False/Sincere. During the recoding process, each response was assigned a score from –3, closest to the negative adjective, to 3, closest to the positive adjective, with zero representing neutrality. Then, the average of the scores was calculated in order to measure the quality of the relationships on three levels: poor (3.5%), medium (32.7%) and high (63.8%).

Screen time on social media and hyperconnection: The indicator was built on the basis of a variable designed to investigate the daily time spent on social media, measured in hours. The answers were summarised in four levels of screen time: absent, assigned to those who do not use social media (1%); low, represented by those who spend between thirty and sixty minutes a day on social media (14.1%); medium, which corresponds to a use ranging from one to three hours a day (45.4%); high, represented by those who spend more than three hours a day on social media (39.4%). Respondents with a high level of screen time were considered hyperconnected.

Tolerance towards violence and discrimination: The indicator was built by recoding respondents' opinions about bullying, cyberbullying, unwanted sexting, dating violence, sexism, racism and homophobia. By assigning one point for each behaviour deemed tolerable, the sum of the scores defined three levels of tolerance: low (14.4%), medium (29.1%) and high (56.5%).

Tolerance toward the consumption of alcohol and other substances: The indicator was built by recoding respondents' opinions about the use of alcohol, marijuana, cocaine, heroin, and LSD. By assigning one point for each consumption deemed tolerable, the sum of the scores defined three levels of tolerance: low (20.9%), medium (43.9%) and high (35.2%).

Happiness and satisfaction: Both dimensions were measured on two Cantril scales from 0 to 10, where 0 indicates the minimum level of happiness and satisfaction, and 10 indicates the maximum level. In our sample, the average happiness score was 7.38, while 7.47 was that of satisfaction.

Intensity of negative primary emotions: The intensity of primary emotions was measured on a scale ranging from 1, minimum perceived intensity, to 7, maximum perceived intensity, concerning the perception of the following negative emotions: anger (average 4.61), sadness (average 4.55) and fear (average 3.79).

Adherence to gender sexual roles: To investigate the presence of a stereotyped view of sexual practices, respondents were asked whether the dominant role during sex should be played by men, women or if there was no difference. In our sample, 18.5% of the respondents attribute the dominant role to men and 3.1% to women, while for the remaining 78.4%, there is no difference in sexual roles.

Body satisfaction: To investigate the relationship between the respondents and their bodies, they were asked to express whether or not they were satisfied with their bodies at the time of the interview. In our sample, 55.9% of respondents were satisfied with their bodies, while 44.1% were not.

3. Results

Table 1 shows the frequencies of pornography use among respondents according to the structural variables of the questionnaire. Respondents who use pornography "always" and "often" are, respectively, 7% and 23.6%. However, among males, these percentages amount to 11.1% and 35.1%, while among females, they decrease to 1.2% and 7.2%. Furthermore, six out of ten girls have never used pornography compared to one in ten boys. These frequencies do not vary significantly according to the class attended, but there is an overall increase of 10% in the transition between respondents attending classes II and III, which in Italy corresponds to the age of 15 and 16 years. Concerning citizenship, the rates vary slightly, with lower values among foreign adolescents. Looking at the type of school, the students who attend technical institutes show higher frequencies than those who attend a lyceum or a vocational school. With regard to religious beliefs, the frequencies of pornography consumption are higher among non-believers, with only two out of ten respondents never using pornography compared to four out of ten respondents among believers. Lastly, looking at the cultural background, higher frequencies of pornography use have been recorded among students with a medium parental cultural status.

Table 1. Frequencies of pornography consumption by structural variables.

		Always	**Often**	**Occasionally**	**Never**
Sex	Male	11.1%	35.1%	41.8%	11.9%
	Female	1.2%	7.2%	32.1%	59.5%
	Total	7.0%	23.6%	37.8%	31.6%
Class	I	8.4%	18.3%	35.4%	37.9%
	II	7.4%	22.1%	36.0%	34.6%
	III	7.2%	25.4%	38.6%	28.8%
	IV	5.5%	28.9%	38.9%	26.8%
	V	6.6%	24.1%	40.7%	28.6%
Citizenship	Italian	7.0%	24.1%	37.9%	31.0%
	Foreign	8.0%	16.9%	36.4%	38.7%
Type of school	High school	5.8%	23.9%	37.6%	32.7%
	Technical institute	8.9%	28.4%	40.4%	22.3%
	Vocational school	6.6%	17.9%	35.3%	40.2%
Religion beliefs	Believer	5.1%	18.8%	35.9%	40.2%
	Non-believer	8.5%	28.1%	41.0%	22.4%
Parental cultural status	Low	6.3%	21.7%	33.0%	39.0%
	Medium	7.4%	24.7%	39.0%	28.9%
	High	5.9%	21.5%	36.1%	36.5%

3.1. Decision Tree Model

The decision tree in Figure 2 shows that the most influential variable in determining different frequencies of pornography use among the respondents is their sex. Indeed, as we have already seen above, boys have significantly higher rates of consumption than girls. To facilitate the description of the results, in this section, we will show the sum of the percentages of the "always" and "often" frequencies in brackets.
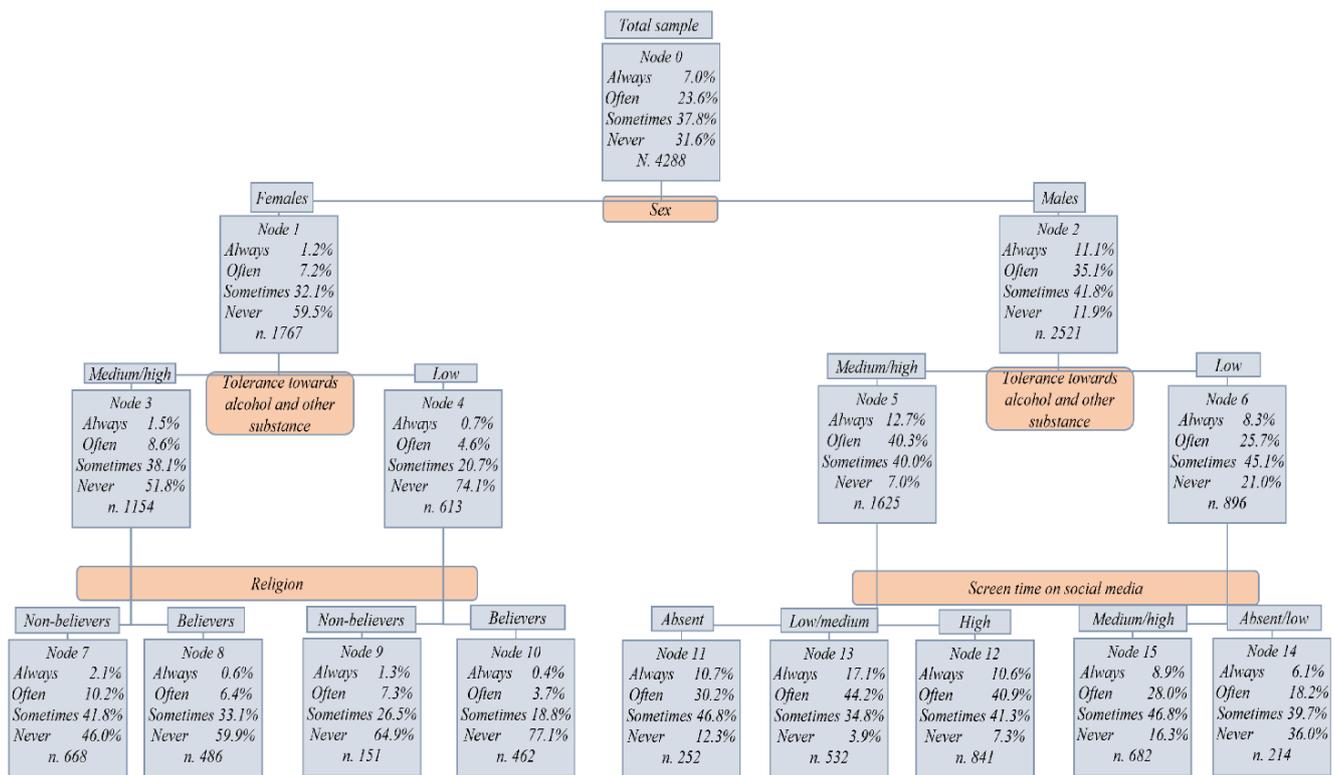
Figure 2. Decision tree's results.

The right side of the tree shows a first disaggregation of the boys' node into two sub-groups that differ in the frequency of pornography use on the basis of tolerance toward the use of alcohol and other substances. Among those with high and medium levels of tolerance, the frequency of pornography use increases (53%), while it decreases among those with a low level of tolerance (34%).

In the next stage of the tree, screen time on social media makes a difference in terms of pornography use. Among males with high and medium levels of tolerance toward the use of alcohol and other substances, the frequency increases as the screen time increases, reaching the highest frequency of pornography use among hyperconnected boys (61.3%). Instead, the node of respondents with a low level of tolerance towards the use of alcohol and other substances use is divided between those with an absent or a low level of screen time, where the lowest frequency of pornography use among boys is recorded (24.3%).

The left side of the tree shows the two-stage split of the girls' node. Additionally, in this case, tolerance toward alcohol and other substances divides the node between those who have a medium or a high level of tolerance, where the frequency of pornography consumption increases (10.1%), and those with a low level of tolerance, where the frequency decreases (5.3%).

Ultimately, religious belief determines the final partition among girls. Starting from those with a medium or a high level of tolerance, non-believers have the highest frequency of pornography use (12.3%), while the frequency decreases among believers. On the other side, among girls with a low level of tolerance toward alcohol and other substances, believers show the lowest frequency of pornography use among girls (4.1%).

3.2. Multinomial Logistic Regression

As described in the methodological paragraph, multinomial logistic regression was applied to test the causal relationships between the use of pornography, which was the independent variable, and other dependent variables related to the adherence to gender

roles, gender stereotypes and sexual gender roles but also to self-esteem, distress, body satisfaction, tolerance towards violence and discrimination.

Since, as we have seen, the frequency of pornography use was quite different between boys and girls, we decided to apply the method separately for the two sexes. For the same reason, the variable on the frequency of pornography use has been recoded in two different ways, respecting the key differences between girls and boys. Therefore, for girls, the variable has been reduced to a dichotomous variable, where FreqPFN was assigned to the answers 'never' FreqPFY to the answers 'occasionally', 'often' and 'always'; for boys, a dichotomous variable has been built, with FreqPMN assigned to the answers 'never' and 'occasionally' and FreqPMY assigned to the answers 'often' and 'always'.

The results reported in Table 2 show only the significant relationships between the independent variable and the dependent variables. For each model, the OR value and its confidence interval are indicated. The confidence interval for each significant model never includes the value 1, strengthening the assumptions established by the OR value, as it is reliable if it falls completely below or above 1. According to the results, pornography use lowers self-esteem for both boys and girls. Another significant effect concerns body satisfaction, which decreases for both boys and girls. Even in the case of distress and the perception of negative emotions, pornography consumption affects boys and girls in a similar way. For both sexes, it corresponds to a higher level of distress and intensity of negative emotions, especially among girls.

Table 2. Results of the multinomial logistic regressions.

Sex	Independent Variable *	Dependent Variable **	OR	Confidence Interval
Female				
	FreqPFY	Female gender roles (high)	0.403	0.202–0.807
	FreqPFY	Female gender roles (low)	0.622	0.503–0.770
	FreqPFY	Male gender roles (high)	0.326	0.182–0.584
	FreqPFY	Male gender roles (medium)	0.545	0.405–0.733
	FreqPFY	Self-esteem (high)	0.444	0.313–0.632
	FreqPFY	Self-esteem (good)	0.603	0.493–0.738
	FreqPFY	Distress (high)	3.717	2.717–5.085
	FreqPFY	Distress (medium)	2.075	1.462–2.944
	FreqPFY	Gender stereotypes (high)	0.215	0.103–0.449
	FreqPFY	Gender stereotypes (medium)	0.307	0.214–0.442
	FreqPFY	Gender stereotypes (low)	0.679	0.552–0.836
	FreqPFY	Body satisfaction (not)	1.390	1.144–1.688
	FreqPFY	Perception of negative emotions (high)	1.905	1.412–2.572
	FreqPFY	Perception of negative emotions (medium)	1.522	1.119–2.070
Male				
	FreqPMY	Female gender roles (high)	1.681	1.256–2.248
	FreqPMY	Female gender roles (medium)	1.557	1.229–1.972
	FreqPMY	Male gender roles (high)	2.067	1.644–2.599
	FreqPMY	Male gender roles (medium)	1.407	1.127–1.757
	FreqPMY	Sexual gender roles (male dominance)	1.927	1.599–2.322
	FreqPMY	Self-esteem (high)	0.535	0.422–0.677
	FreqPMY	Self-esteem (good)	0.759	0.627–0.919
	FreqPMY	Distress (high)	1.741	1.400–2.164
	FreqPMY	Distress (medium)	1.665	1.311–2.116
	FreqPMY	Distress (low)	1.507	1.233–1.843

Table 2. *Cont.*

Sex	Independent Variable *	Dependent Variable **	OR	Confidence Interval
	FreqPMY	Tolerance towards violence and discrimination (low)	0.585	0.474–0.723
	FreqPMY	Body satisfaction (not)	1.612	1.366–1.902
	FreqPMY	Perception of negative emotions (high)	1.695	1.358–2.117
	FreqPMY	Perception of negative emotions (medium)	1.414	1.187–1.684

* Reference value FreqPFN and FreqPMN. ** Reference value: Female and male gender roles (absent], sexual gender roles (absent), gender stereotypes (absent), self-esteem (low), distress (absent), body satisfaction (Yes), Tolerance towards violence and discrimination (High).

Looking at the other variables, the results show that the effect of pornography consumption is different for males and females. The adherence to gender roles, both female and male roles, decreases among girls and increases among boys. The effect on adherence to gender stereotypes is significant only among girls, as pornography consumption decreases their adherence to gender stereotypes. With regard to sexual gender roles, the model is significant only for boys, showing an increase in the adherence to the idea that specific stereotyped gender roles must be respected in sexual relationships and the dominant role should be played by men. Lastly, the effect of pornography use is not significant in relation to tolerance towards violence and discrimination among girls, while it is significant among boys, for which the degree of tolerance increases.
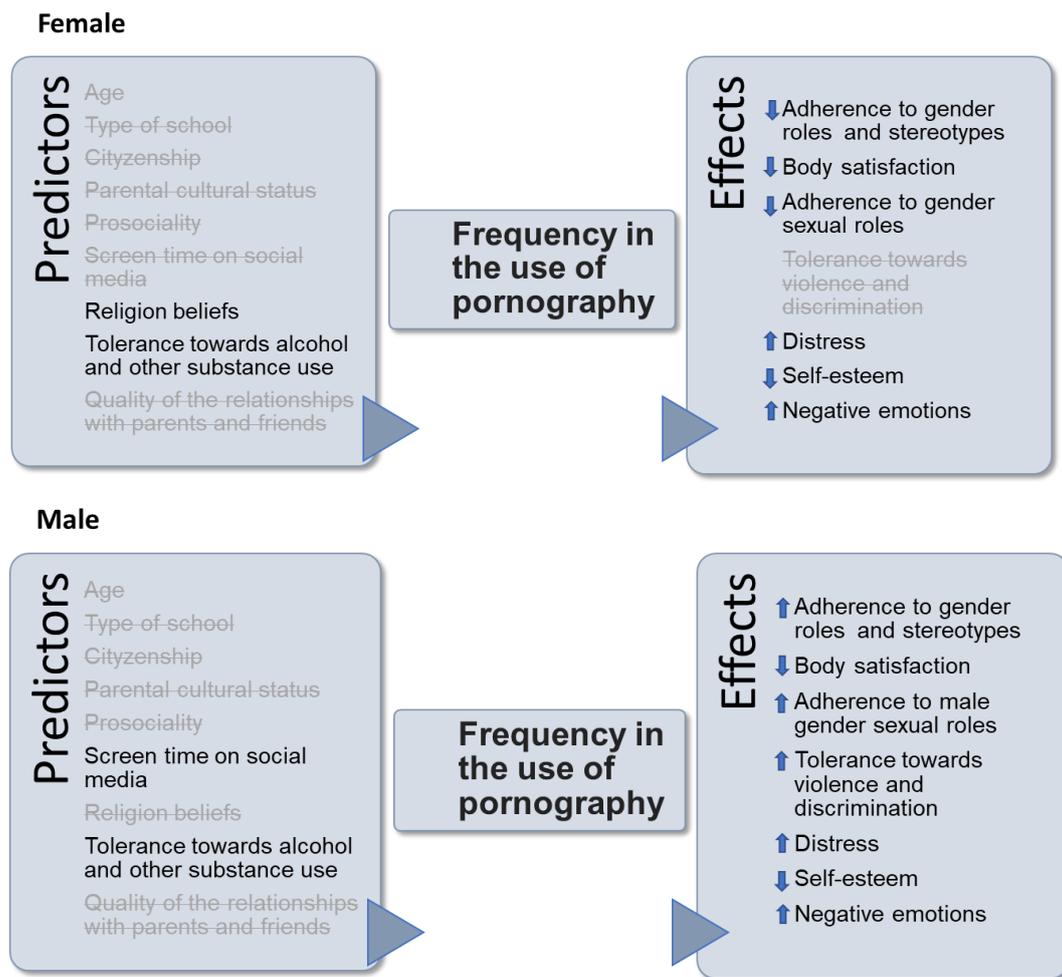
4. Discussion

Figure 3 summarises the significant predictors and effects obtained via the two-step analysis carried out in this study. As can be seen, our hypothesis on the main predictors of pornography use (H1) has been only partially confirmed by the decision tree results.

Indeed, the most influential predictor is the respondents' sex, as only 1 out of 10 males did not use pornography compared with 6 in 10 females. Such a large gender difference is in line with the findings of previous studies, and it is the main reason why researchers have usually focused on male adolescents [13,14]. This result confirms that, despite the growing social acceptability of pornography use as a form of entertainment among the youngest [46,47], the sexual double standard is widespread among Italian adolescents [15] as the taboo on female sexual pleasure linked to the sexist culture still persists [48,49].

As we hypothesised, beyond the sex differences recorded in terms of pornography use, the predictive factor for boys and girls is tolerance toward the use of alcohol and other psychotropic substances. Additionally, this finding is in line with other studies that have shown higher frequencies of pornography use among alcohol and other psychotropic substances consumers since they reduce social inhibition [17–19]. Religious beliefs are a significant predictor only for girls. This result is in contrast with the findings of other studies, which show an overall effect of religious beliefs in pornography consumption stronger on boys [23,24]. However, the fact that religion lowers pornography consumption only among girls can be linked to the Judeo-Christian androcentrism that denies women the experience of sexual pleasure, restricting their sexual role to reproductive functions [50]. At the last stage of the decision tree, the predictor of higher frequency of pornography use among boys is the time spent on social media, confirming the association between pornography consumption and hyperconnection highlighted by other studies [14]. This positive relationship could prove to be the most dangerous as screen time has reached unprecedented levels among adolescents in recent years due to the spread of the pandemic [51].

Contrary to what we assumed in H1, no significant relationships were found between the frequency of pornography use and the following variables: the age of the respondents, their citizenship, the type of school attended, the parental cultural status, the prosociality level and the quality of the relationships with parents and friends.

Female

Predictors

Age
Type of school
Cityzenship
Parental cultural status
Prosociality
Screen time on social media
Religion beliefs
Tolerance towards alcohol and other substance use
Quality of the relationships with parents and friends

Frequency in the use of pornography

Effects

⬇ Adherence to gender roles and stereotypes
⬇ Body satisfaction
⬇ Adherence to gender sexual roles
Tolerance towards violence and discrimination
⬆ Distress
⬇ Self-esteem
⬆ Negative emotions

Male

Predictors

Age
Type of school
Cityzenship
Parental cultural status
Prosociality
Screen time on social media
Religion beliefs
Tolerance towards alcohol and other substance use
Quality of the relationships with parents and friends

Frequency in the use of pornography

Effects

⬆ Adherence to gender roles and stereotypes
⬇ Body satisfaction
⬆ Adherence to male gender sexual roles
⬆ Tolerance towards violence and discrimination
⬆ Distress
⬇ Self-esteem
⬆ Negative emotions

Figure 3. Resulting models for females and males.

At the second stage of our analysis, the results of the multinomial logistic regressions (Figure 3) on the effects of pornography use on respondents' attitudes, beliefs and well-being only partially confirm our hypothesis (H2). As we hypothesised, pornography negatively affects self-esteem and body satisfaction for both boys and girls. Indeed, as other studies have highlighted, body images conveyed by mainstream porn showing an ideal of standardised perfection and beauty that do not represent the variety of bodies in the real world have negative effects on self-perception [34]. Furthermore, pornography use also effects the emotional dimension of boys and girls, increasing the intensity of perceived negative primary emotions, anger, fear and sadness, as well as distress, confirming the correlations founded by other studies between pornography and emotion regulation, anxiety and depression [20,21]. Furthermore, pornography use increases tolerance towards violent behaviours and discrimination only among boys, confirming the negative effect of hypermasculinity and violence usually depicted in mainstream pornography [31].

In contrast to our hypothesis in H2, the effect of pornography use on the adherence to male and female gender roles and gender sex roles depends on the respondents' sex. Among boys, the objectification of women provided by mainstream porn strengthens the adherence to rigid gender roles, which assign power to men and roles of care and assistance to women, according to the idea of male domination in the sexual practices conveyed by mainstream porn [29,30]. Instead, pornography use decreases the adherence to gender roles and gender stereotypes among girls. This positive effect could be related to the emancipatory role of pornography consumption among women, which has been analysed in previous studies within the research that moves beyond the 'negative effects

paradigm' in the study of pornography [52,53]. According to their results, pornography consumption is empowering for women, as it allows them to explore their sexual desire and to understand their sexuality, becoming an experience of sexual subjectification [26,27].

5. Conclusions

Due to the spread of internet access and the great availability of digital devices, the prevalence rates of pornography have reached unprecedented levels in recent years, with the increasingly early involvement of young people.

Despite the similar effects that the use of pornography produces among males and females in terms of self-esteem deterioration, increasing distress, high intensity of negative primary emotions and body dissatisfaction, our results show clear different consequences for boys and girls concerning attitudes and beliefs towards gender equality and violence. The presence of binary socialisation [48] strongly conditioned by gender stereotypes can be easily identified in the results of this study, especially in the different levels of adherence to gender stereotypes among adolescents. Concerning the use of pornography, this binary socialisation lies behind the different frequencies of consumption but also the opposite effects for girls and boys. Indeed, while it can represent an experience of sexual emancipation for women, among men it reinforces gender stereotypes in the relational context, emphasizing the adherence to gender roles with a particular influence on the sexual sphere, also increasing the tolerance toward discriminatory, violent and deviant behaviours.

As we have seen, early and intensive exposure to online pornography affects relationships, social identities and individual well-being. For this reason, this phenomenon should be the focus of the synergic effort of teachers and parent, since the parental control filters cannot be considered to be an effective prevention measure as they can be easily overcome already in preadolescence. Without proper sex education provided by parents, schools and professionals, adolescents inevitably will internalise the sexual, beauty and behavioural models proposed by the Internet and the world of pornography. The findings of this paper also suggest the need for a new narrative of porn, which should promote a critical—and not only passive—approach able to overcome the sex taboo and to go beyond the mainstream, heterosexual and masculinised pornography, which provides a homologated and unrealistic image of bodies and sexual performances. It would also be useful to stimulate critical reflection on the contents and messages conveyed by mainstream pornography involving the most popular porn websites in order to make the pornographic experience an opportunity for sexual exploration and the development of adolescents.

Finally, continuous and in-depth monitoring of the effects of early exposure to online pornography, which impacts, as demonstrated, sexual imagery, affectivity and emotions, should be carried out at national and international levels. Given the importance of the topic, it may be appropriate to carry out longitudinal studies with rigorous, standardised and shared methods to collect reliable statistics for global comparisons. This kind of research would have the additional advantage of providing the evaluation of the interventions implemented, detecting those necessary to contrast the negative effects of the early and intensive exposure to online pornography.

Informed Consent Statement: Informed consent was obtained from all subjects involved in the survey.

Data Availability Statement: Data of this study are not available because of the co-property with the Italian Presidency of the Council of Ministers.

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