

# Characteristics of Sexual Violence Against Adolescent Girls: A 10 Years' Retrospective Study of 731 Sexually Abused Adolescents

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**Introduction:** Sexual violence against young girls is a pervasive multifaceted phenomenon which embraces several different forced sexual acts, including attempted and/or completed rape, sexual coercion and harassment, and sexual contact with force or threat of force. The aim of this study is to evaluate the characteristics of sexual violence in adolescent girls, by a retrospective analysis of 731 consecutive cases of sexually abused girls.

**Materials and Methods:** We analyzed demographic characteristics, risk factors for rape, and the eventual subsequent presence and type of ano-genital lesions.

**Results:** We found that sexual violence with penetration was perpetrated in 591 (80%) cases. Vulnerability factors related with a major risk of rape were age >17 years old and consumption of alcohol and/or other drugs. About 196 (55%) victims had at least one genital lesion.

**Conclusion:** A prompt identification of red flags of sexual violence may help physicians in suspecting and managing cases of sexual assault in adolescent girls, even in the absence of typical lesions.

**Keywords:** sexual violence, gender violence, rape, adolescent, genital lesions

## Introduction

Sexual violence (SV) against young girls is a pervasive multifaceted phenomenon which embraces several different forced sexual acts, including attempted and/or completed rape, sexual coercion and harassment, and sexual contact with force or threat of force. As recognized by several organizations, SV represents a major health problem, as well as a widespread violation of human rights.<sup>1,2</sup>

SV could occur in child maltreatment (defined by the World Health Organization as any abuse and neglect that occurs to children under 18 years of age), which involve also physical and/or emotional ill-treatment, neglect, negligence and/or other exploitation.<sup>3</sup> Moreover, SV may often occur in intimate relationship,<sup>4</sup> as part of domestic violence, which is one of the most common forms of violence against women and includes physical, sexual, and emotional abuse as well as controlling behaviors by an intimate partner.<sup>5</sup>

Specifically, the estimated proportion of adolescent who had survived SV is not negligible. The World Health Organization (WHO) indicated that for almost one-third of adolescent girls the first sexual experience is reported as being forced;<sup>1</sup> other authors reported that about 12% to 25% of girls under the age of 18 have experienced in their life some form of SV.<sup>6</sup> An Italian national survey showed that about 10% of the interviewed women reported having suffered

from some form of SV before the age of 16.<sup>7</sup> According to literature, adolescents are more likely to be involved in sexual misconducts and crimes than any other age group.<sup>8–10</sup> The National Crime Victim Survey pointed out that adolescent girls are four times more likely than the general population to report SV.<sup>11</sup>

Gender violence has several negative repercussions on women's physical and mental health.<sup>9</sup> Specifically, SV in adolescence could have particularly harmful and detrimental consequences, as it was reported that unwanted sexual experiences, especially if reiterated and prolonged, may affect the dynamic brain development and influence structural changes in the brain, leading to a dysregulation of the neurobiological responses to external negative stimuli and to an impairment of the development of individual capabilities and resources essential for the psychological well-being in adult life.<sup>12–16</sup>

Several vulnerability factors are reported to be associated with an increased risk of SV. In particular young age, a past history of rape or other forms of SV, living in foster care, the presence of physical and/or mental disability, abuse of alcohol or other drugs, and experiencing an abusive intimate relationship expose to higher risk of sexual victimization.<sup>17</sup>

Taken together, all these data support the hypothesis that adolescence is a period of increased vulnerability to SV, both at home and outside the family. The psychological repercussions represent significant and ongoing harm. A recent systematic review focusing on different types of psychosocial interventions for adolescent and adult victims of SV highlighted a gap in the evidence for effectiveness of such interventions. Some weak evidence is reported only as regard to cognitive behavioral therapy (CBT) based interventions, especially trauma processing.<sup>18</sup>

Despite the higher risk of sexual victimization, adolescence has often been overlooked in global health and social policy.<sup>14</sup> Much research has been published on SV against adult women or children,<sup>19–25</sup> but limited studies specifically focused on SV in adolescence.<sup>20,26,27</sup> Several similarities may exist between SV which occurred in adolescence or in other periods of life,<sup>27</sup> although it is reasonable to suppose that some vulnerability factors, characteristics of the SV and features of SV-related genital lesions occurred in adolescence may substantially differ from those related to a SV occurring at an older age or during childhood.<sup>25</sup> In addition, to our knowledge no studies have systematically investigated the presence of specific characteristics of SV as well as the presence and types of ano-genital lesions in large series of adolescent girls.

Assuming this background, we conducted a retrospective study on a large population sample of adolescent girls referring for SV to a referral rape-center, aimed at providing a broader understanding on the phenomenon of SV in adolescence focusing on several specific aspects: 1) the characteristics of the SV; 2) the typology of perpetrators; 3) the presence and type of vulnerability factors; 4) features of the ano-genital lesions caused by the violence.

## Materials and Methods

The current study is part of a larger research on SV against adolescent girls. The investigation was conducted at the Service for Sexual and Domestic Violence (SVSeD), Department of Women's and Children's Health, Fondazione IRCCS Ca' Granda Ospedale Maggiore Policlinico, Milan, Italy. Local Institutional Review Board approval for the study was obtained (Comitato Etico Milano Area 2). All women accessing to SVSeD, at the time of the clinical/forensic evaluation for SV, are routinely requested to sign written informed consent to clinical/gynecological procedures, documentation of injuries (including pictures of lesions), collection of forensic specimens as well as to authorize researchers to review their medical records and use data for research, ensuring data confidentiality.

For the current retrospective research, the study sample was obtained analyzing all medical records of female victims of SV aged 10 to 19 who referred to SVSeD in a period of 10 years (2006–2016). Data obtained from consulting medical records were reported in a digital data set.

As the research question was to provide a broad perspective on the characteristics of SV in adolescence, in particular as regard to the characteristics of the SV (for example penetrative or not-penetrative acts), the typology of perpetrators, the presence and type of vulnerability factors, and the features of the ano-genital lesions, for each medical record of girls aged 10 to 19 who accessed the Center for SV we recorded the following variables:

- victims' age and nationality,

- presence of vulnerability factors as described in literature<sup>17</sup> (such as previous SV, alcohol and/or other drug abuse, exposure to domestic violence and child maltreatment, psychiatric and cognitive disorders, history of pregnancies or abortions, prostitution, homeless, adoption/Community housing, physical diseases involving disability, criminal records<sup>17</sup>),
- characteristics of perpetrators of violence (such as the number of perpetrators and their relationship with the victim),
- characteristics of the SV (such as places where SV occurred, time passed between the SV and the admission to SVSeD, types of forced sexual acts, modality of penetration, condom use),
- types and distribution of genital and extra-genital lesions caused by the SV.

Data were entered from SVSeD records into Microsoft Excel (version 15.33; Microsoft, Redmond, WA) and statistical analyses were performed using the SAS/STAT statistical package (version 9.4; SAS Institute INC., Cary, North Carolina, USA). Descriptive statistics were achieved for demographic and social data; continuous variables are presented as means with standard deviations ( $M \pm SD$ ), while categorical data as percentages and frequencies. Associations between risk factors and outcomes of interest were evaluated using the logistic regression; the strength of association was measured by odds ratio (OR) and 95% confidence interval (95% CI).  $P < 0.05$  was considered statistically significant. Raw data have been further evaluated by multiple statistical regressions; two different multivariate analyses were performed, using as independent variables, as follows: sexual assault with penetration and the presence of genital trauma. In the model were included only those variables which had a statistical association at the univariate analyses ( $p < 0.05$ ).

## Results

### Demographic and Social Characteristics of Victims and Perpetrators

A total of 976 adolescents between the age of 10–19 referred to SVSeD in the study period; 731 (74.9%) of them were included in the current study, whereas 245 (25.1%) were excluded because they were male ( $n=59$ , 6%), or because the history of the violence was not pertinent with our research or due to missing data ( $n=186$ , 20%).

Demographic and social characteristics of the population under study are presented in Table 1. The mean age of the sample was  $15.5 \pm 2.4$  years, and 576 (79%) of the girls were aged 14–19 years old.

More than half of the population examined (404, 55.3%) was represented by Italian girls, whereas the second most represented region of origin was Latin America (167, 22.8%). Most victims (460, 63%) showed at least the presence of one of the several vulnerability factors investigated; the most common were a history of previous SV (26.7%), a history of alcohol or other drugs abuse (20.4%), and a past exposure to domestic violence or childhood maltreatment (19.2%).

The perpetrator of SV was a known person in 395 cases (54%), whereas in 292 cases (40%) he was unknown to the victim. 44 (6%) girls did not report their relationship with the perpetrator. In detail, the perpetrator was a friend or a schoolmate in 199 cases (30%), a family member in 133 cases (18%), and a current or former intimate partner in 53 cases (7.3%). In 266 cases (36%) the perpetrator of the SV was described by the survivors of SV as “a boy of the same age or in any case young”, in 346 cases was described as an adult (47.3%), in 13 cases as an elderly man (1.7%), and in 106 cases this information was not reported by the victim (14.5%). 120 (16.4%) girls were sexually assaulted by more than one person at the same time. In only 3 cases the perpetrator of the SV was a woman.

359 (49.1%) victims referred to SVSeD in the first 3 days after the SV occurred, 74 (10.1%) between 3 and 7 days, 85 (11.6%) between 7 and 30 days, and 188 (25.7%) after 30 days. A statistically significant correlation between time passed from SV to admission in SVSeD and victims/perpetrators relationship was found ( $P < 0.00001$ ): if the perpetrator was an unknown person, the victim more frequently referred to SVSeD within 3 days from the assault, whereas if he was a family member, victims delayed their access to SVSeD after a month or even more.

### Characteristics of SV

SV was associated with domestic violence in 108 cases (15%), and was referred as a non-single episode of abuse by 206 victims (30%). In about one third of the cases ( $n=236$ , 32.3%) the sexual assault occurred in a public place (streets or parks), in 146 cases (20%) at the victim’s place, in 168 cases (23%) at the perpetrator’s home.

**Table 1** Socio-Demographic Characteristics of the Population Under Study

<b>Age (M+SD): 15.5+2.4 Years</b>	<b>n (%)</b>
Range 10–13	155 (21.2%)
Range 14–16	294 (40.2%)
Range 17–19	282 (38.6%)
<b>Region of origin</b>	<b>n (%)</b>
Italy	404 (55.3%)
Latin America	167 (22.8%)
Eastern Europe and Russia	84 (11.5%)
Africa	39 (5.3%)
Another	35 (4.8%)
Missing data	2 (0.3%)
<b>Vulnerability factors for SV<sup>a</sup></b>	<b>n (%)</b>
Previous sexual aggression	195 (26.7%)
Alcohol and other drug abuse	149 (20.4%)
History of pregnancies or abortions	142 (19.4%)
Exposure to domestic violence and/or child maltreatment	140 (19.2%)
Psychiatric or cognitive disorders	76 (10.4%)
Adoption/community housing	69 (9.4%)
Other factors <sup>b</sup>	47 (6.4%)
	98 (13.4%)

**Notes:** <sup>a</sup>Vulnerability factors are unknown for 150 victims; percentages are calculated on the total sample (731 victims). More than one factor could be present at the same time. <sup>b</sup>Prostitution, homeless, physical disease involving disability, criminal record.

In 591 (80%) cases the SV involved a genital and/or oral penetration with different modality (penis, fingers or other objects). We classified SV as “sexual assault with penetration” and “sexual assault without penetration”. The relationship between the type of SV (with or without penetration) and several characteristics of the victims is reported in Table 2. Risk factors for SV involving penetration were: age > 14 years, victims from Latin America, East Europe or Russia, alcohol or other drugs abuse, prostitution, criminal records (Table 2). A logistic regression analysis (dependent variable: penetration; independent variables: age, nationality, substance abuse, vulnerability factors) confirmed that age >17 years (AOR=2.4, 95% CI 1.4–4.1,  $P=0.006$ ) and alcohol/other drug abuse (AOR=3.1 95% CI 1.6–6.2,  $P=0.01$ ) are risk factors for SV involving penetration.

Of the 591 cases of SV with penetration, in 416 cases (70%) the abuse consisted in a penile penetration, in 41 cases (7%) in a finger penetration, in only 2 cases other objects were used and in the 22% of cases victims did not report this specific information. In 330 cases (45%) there was a vaginal penetration. Exclusive anal/oral penetration was reported respectively by 17 and 15 victims (2%), whereas a multiple penetration (vaginal/anal/oral) was reported by 78 victims (10.8%). In only 17 cases (3%) victims remembered use of condom by the perpetrator during the SV. 28 girls (5% of victims with penile vaginal penetration) became pregnant because of the sexual assault.

## Characteristics of the Ano-Genital Lesions and of the Extra-Genital Lesions

The presence and features of the ano-genital lesions due to the SV were analyzed only in victims who referred to SVSeD within the first 7 days after the violence, who reported any type of genital penetration and who gave consent to genital examination (n=354).

196 victims (55%) presented at least one genital lesion. The different types of lesions (redness, abrasions, superficial or deep lacerations, bruising, bleeding) and the site of lesions (labia minora, labia majora, clitoris, external urethral meatus, posterior fourchette, perineal body, anus, hymen, vagina) were analyzed. Redness was the most frequent type of lesion (56.5%), followed by hymenal lacerations (18.9%). The most frequent seats of genital lesion were posterior fourchette (37.6%), hymen (18.9%) and labia majora (16.9%).

**Table 2** Characteristics of Sexual Violence as Regard to Socio-Demographic Characteristics of Victims and Perpetrators

	Sexual Assault with Penetration n (%)	Sexual Assault without Penetration n (%)	OR	95% CI	P
<b>Total</b>	591	140			
<b>Relationship with the perpetrator</b>					
Unknown	238 (40.3%)	54 (38.6%)	1		
Known	323 (54.7%)	82 (58.6%)	0.8	0.6 to 1.3	P=0.56
Missing data (34)					
<b>Victim's age</b>					
10–13 years	105 (17.8%)	50 (35.7%)	1		
14–16 years	237 (40.1%)	57 (40.7%)	2.0	1.3 to 3.1	P=0.003
17–19 years	249 (42.1%)	33 (23.6%)	3.6	2.2 to 5.9	P<0.0001
Missing data (0)					
<b>Region of origin</b>					
Italy n (%):	311 (52.6%)	93 (66.4%)	1		
Latin America n (%):	143 (24.2%)	24 (17.1%)	1.8	1.0 to 2.9	P=0.02
Eastern Europe and Russia n (%):	73 (12.4%)	11 (7.9%)	2	1 to 3.9	P=0.05
Africa n (%):	32 (5.4%)	7 (5.0%)	2.0	0.7 to 5.3	P=0.2
Other n (%):	30 (5.0%)	5 (3.5%)	1.4	0.6 to 3.6	P=0.4
Missing data (2)					
<b>Vulnerability factors<sup>a</sup></b>					
Absence of any factor n (%)	202 (34.2)	69 (49.3)	1		
Previous sexual aggression n (%):	153 (25.9)	42 (30%)	1.2	0.9 to 1.9	P=0.32
Alcohol and other drug abuse n (%):	138 (23.4%)	11 (7.9)	4.3	2.2 to 8.4	P<0.0001
Exposure to domestic violence and child maltreatment n (%):	111 (18.8%)	29 (20.7)	1.3	0.8 to 2.3	P=0.3
Psychiatric or cognitive disorder n (%):	61 (10.3%)	15 (10.7)	1.4	0.7 to 2.6	P=0.3
Adoption/community housing n (%)	58 (9.8%)	11 (7.9)	1.8	0.9 to 3.6	P=0.1
Previous pregnancies or abortions n (%):	46 (7.8)	1 (0.7)	15.7	2.1 to 116	P=0.007
Other factors <sup>b</sup> n (%):	125 (21.2%)	17 (12.1)	2.5	1.4 to 4.4	P=0.002

**Notes:** <sup>a</sup>The total is higher than 731 due the contemporary presence, in some victim, of more than one factor. <sup>b</sup>Prostitution, homeless, physical disease involving disability, criminal record, etc.

As reported in Table 3, ano-genital lesions were classified into two categories, to better identify predictive factors for the presence of ano-genital injuries according to the characteristic of the SV. The chosen categories were: a) low-grade /aspecific lesions (redness); and b) high-grade lesions (abrasions, superficial or deep lacerations, bruising, bleeding). A logistic regression analysis confirmed that the absence of previous sexual intercourse, the occurrence of penile penetration and/or anal penetration were predictive factors for the presence of high-grade lesions, as intuitively supposed. There were no associations between any of the characteristics of the SV considered and the presence of low-grade /aspecific lesions. No other predictive factors for high-grade lesions were detected.

As regard to extra genital lesions, we considered the victims who referred to SVSeD within 7 days from the assault and who underwent a forensic examination. We could assess that, on a total of 362 cases, lesions were found in 202 victims (55.8%). Ecchymosis or bruising were the most represented, accounting for about 60% of the lesions, followed by excoriations (33.2%). Tears and burns were significantly less denoted (4.4% and 0.4%).

In general, ie considering both genital and extra genital lesions, we evaluated the sample of victims referring within 7 days and who underwent both genital and forensic evaluation. Of the 335 adolescents studied, 259 (77%) had at least a physical lesion in any body site.

**Table 3** Relationship Between Typology of Ano-Genital Lesions and Characteristics of the Sexual Violence<sup>a</sup>

	Victims <sup>b</sup> n (%)	No Ano-Genital Lesions n (%)	Low-Grade Lesions n (%)	High-Grade Lesions <sup>c</sup> n (%)	AOR - 95% CI High Grade vs No Lesions	P
<b>Age</b>						
10–13 years	38 (10.7)	19 (12.0)	11 (17.5)	8 (6.0)	1	
14–16 years	139 (39.3)	59 (37.3)	22 (34.9)	58 (43.6)	2.3–0.9 to 5.8	0.07
17–19 years	177 (50.0)	80 (50.6)	30 (47.6)	67 (50.4)	2–0.8 to 4.8	0.10
<b>Region of origin</b>						
Italy	191 (54.0)	83 (52.5)	37 (58.7)	71 (53.4)	1	
Latin America	76 (21.5)	39 (24.7)	11 (17.5)	26 (19.5)	0.8–0.4 to 1.4	0.40
Eastern Europe and Russia	48 (13.6)	16 (10.1)	10 (15.9)	22 (16.5)	1.6–0.8 to 3.3	0.20
Another	33 (9.3)	14 (8.9)	5 (7.9)	14 (10.5)	1.2–0.5 to 2.6	0.70
<b>Relationship with the perpetrator</b>						
Known	155 (43.8)	73 (46.2)	24 (38.1)	58 (43.6)	1	
Unknown	171 (48.3)	67 (42.4)	33 (52.4)	72 (54.1)	1.3–0.8 to 2.1	0.20
<b>Number of perpetrators</b>						
Single perpetrator	255 (72.0)	111 (70.3)	44 (69.8)	100 (75.2)	1	
Group violence	67 (18.9)	30 (19.0)	12 (19.0)	25 (18.8)	0.9–0.5 to 1.7	0.80
<b>Previous sexual intercours</b>						
Yes	200 (56.5)	97 (61.4)	32 (50.8)	71 (53.4)	1	
First sexual experience	120 (33.9)	43 (27.2)	20 (31.7)	57 (42.9)	1.8–1.1 to 3	0.02
<b>Alcohol and other drug abuse</b>						
No abuse	146 (41.2)	62 (39.2)	27 (42.9)	57 (42.9)	1	
Presence of abuse	113 (31.9)	47 (27.8)	22 (34.9)	47 (35.3)	1.2–0.7 to 2	0.60
<b>Penetration modality</b>						
Digital penetration	22 (6.2)	15 (9.5)	2 (3.2)	5 (3.8)	1	
Penile penetration	239 (67.5)	97 (61.4)	38 (60.3)	104 (78.2)	3.2–1.1 to 9.3	0.03
<b>Site of penetration</b>						
Vaginal penetration	204 (57.6)	90 (57.0)	33 (52.4)	81 (60.9)	1	
Anal or ano- vaginal penetration	45 (12.7)	14 (8.9)	5 (7.9)	26 (19.5)	2.0–1.0 to 4.2	0.05
<b>Total</b>	<b>354</b>	<b>158</b>	<b>63</b>	<b>133</b>		

**Notes:** <sup>a</sup>Analysis were conducted only considering victims who presented to SVSeD within seven days from the sexual violence, who denounced a violence comporting any type of ano-genital penetration and who gave consent to genital examinations (n=354). <sup>b</sup>Total of victims is not always 354, due to the presence of missing data. <sup>c</sup>High-grade lesions: abrasion, superficial tear, deep tear, bruise, bleeding, acute hymnal lesions, acute vaginal wall lesions.

## Discussion

The present retrospective study examines a large series of sexually abused female adolescents who referred to a public Italian anti-rape center. Findings confirmed that previous SV, alcohol or other drug abuse, and past exposure to domestic violence or childhood maltreatment were prevalent vulnerability factors for sexual victimization in adolescence, and that in more than half of cases the perpetrator of the sexual abuse was a known person. Moreover, the current research offers a broad overview on frequency, sites and types of genital lesions caused by the sexual abuse, helping clinicians to accurately define injuries related to the episodes of violence. These findings can be particularly useful for forensic purpose. To our knowledge, this is the largest study evaluating these specific characteristics related to SV against adolescent girls.

SVSeD is a public against violence center located in a referral university hospital, which offers health, social, psychological and legal support to women and children victims of sexual abuse and intimate partner violence. SVSeD, 24/7/365 opened, encompasses the presence of different continuously trained professional figures: gynecologists, forensic medical doctors, nurses, psychologists, social workers and lawyers, cooperating in a well-established, standardized, and comprehensive multidisciplinary approach. SVSeD standardized protocol of care involves the collection of social, medical, and psychological information, such as the presence of vulnerability factors of the victim, the description of the characteristics of the SV and of the perpetrator, the gynecological/physical examination guided by colposcopy recording the occurrence of genital/extra genital lesions, the assessment of psychological repercussions and the registration of swabs, blood and urine results for biological, toxicological and microbiological testing. A written consent for all these medical procedures is always requested.

Moreover, SVSeD offers psychological support to the victims of violence and even to their relatives if necessary. Healthcare professionals usually directly refer to the judicial authority, in the cases specified by the national against violence laws.

SVSeD is, both for other local hospitals and for judicial authority, the main referral center for SV of the city of Milan and hinterland, with a resident population of about three million of people. For this reason, we can assume that the SVSeD adolescent population is representative of the general population of sexual assaulted adolescents, allowing us to reasonably come to some conclusions, nevertheless the high level of submerged data.

In this research, we adopted the definition of adolescence developed by the WHO, ie girls between 10 and 19 years of age. Therefore, according to this definition, the great majority of adolescents are included in the age-based definition of “child”, used by the Convention on the Rights of the Child, as a young under the age of 18 years.<sup>28</sup>

In our study, most adolescents (79% of the sample) were aged 14–19. This could partly explain why SV involving penetration (either oral, vaginal or anal) was very common in our sample, involving 80% of the total of the adolescent girls. However, a considerable percentage of girls under the age of 14 years referred SV involving some form of penetration (17.8%), which is particularly alarming. Our results are similar to those reported by authors who studied adolescents and adult women victims of sexual abuse, showing that, in the majority of cases, sexual violence in adolescence involve acts of penetration.<sup>19–21</sup> However, this finding could be due to the high frequency of unreported SV, in particular in an emergency context, if the abuse consists in non-penetrative acts. For this reason it should be interpreted cautiously, as it could be not fully representative of the totality of adolescent sexually abused girls.

The high prevalence of penetrative acts gives causes for concern, especially considering that some authors have suggested that children and/or adolescents victims of SV with penetration present a higher frequency of subsequent sexual risk behaviors compared to victims of non-penetrative sexual abuse, including more sexual partners, more contraction of sexually transmitted diseases, more unplanned pregnancies.<sup>13,29</sup>

According to the logistic regression performed, age >17 years and alcohol/other drug abuse are major risks factors for undergoing SV with penetrative acts. These findings are comparable to those of East and Hokoda,<sup>30</sup> who have shown that early indicators of risky lifestyle such as sex, drug and alcohol abuse are associated with an increased probability of subsequent sexual victimization. Adolescents have demonstrated increased disclosure in reporting voluntary drug use associated with sexual assault if compared to the adult population.<sup>31</sup> Seifert<sup>32</sup> reported that alcohol or other drug use before a sexual assault has been referred by more than 40% of adolescent victims and adolescent perpetrators of SV.

However, the association between sexual victimization and substance abuse is complex and often mutual, and it could be difficult to determine whether SV is the consequence or the reason of substance abuse.<sup>33</sup> Besides all these considerations, the importance of a proper education on substances abuse in adolescence appears pivotal in terms of prevention.

Our research underlined that previous SV and past exposure to domestic violence or childhood abuse are major vulnerability factors for sexual (re)victimization, as similarly reported by other authors.<sup>34,35</sup> Walker et al, conducted a meta-analysis on the prevalence of sexual revictimization, concluding that the prevalence of revictimization reached almost 50% of the cases.<sup>36</sup> Other authors have underlined that female victims of childhood abuse are three to five times more likely to experience further SV than those who have not experienced sexual abuse in childhood.<sup>37</sup>

In our study, a considerable number of adolescent victims of SV reported past or concomitant exposure to domestic violence and/or child maltreatment (19.2%) and previous sexual aggression (26.7%). These findings appear particularly worrying, especially considering that repeated abusive experiences in adolescence may have cumulative devastating effects on cognitive development and global health, such as increased risk of reproductive dysfunctions, chronic pain, depression, anxiety, eating disorders, decreased school functioning, social adjustment problems, and even suicide attempts.<sup>14,25,37</sup> Childhood sexual victimization is also reported to increase the individual's risk for later delinquent/criminal behavior. Moreover, SV at young age is associated with an increased risk of arrest for sex crimes and/or for prostitution.<sup>38</sup>

Frequently, SV through psychological or physical pressure occurs in dating relationship among adolescents. In these cases, girls may not be fully aware of the SV they are experiencing, with a high risk of normalization or trivialization of violence because of a cultural process involving misleading representations of love in movies, famous books, TV shows or music video, which may lead to a distorted perception of the violence itself.<sup>39</sup> In our study a considerable percentage of SV (36%) was perpetrated against adolescent girls by an adolescent boy or young adult, pointing out how teen dating violence could represent a major alarming health risk. Moreover, increased risk-taking behaviors such as contacts and relations with strangers through the Internet or social media cause additional risks to the adolescent population, including cyber dating victimization.<sup>40</sup>

All these factors together make the adolescence a period of extreme vulnerability to sexual abuse - both at home and outside the family - for several reasons. First, adolescent girls may frequently face unwanted and persistent sexual approaches as they gradually physically mature and begin to assume a defined sexual identity. Second, adolescents are usually very high-risk takers, requiring freedom from family rules and persistently searching for exploration and experimentation. However, many adolescents may have not yet developed the appropriate cognitive skills allowing them to correctly identify and elude potentially dangerous situations, at risk for sexual abuse.<sup>41</sup> Several authors have investigated the role of targeted interventions based on school and community and addressing relationship skills, with the aim of preventing adolescent intimate partner violence, including physical, sexual, psychological violence, and/or sexual harassment.<sup>42-45</sup> A systematic review published by De Koker et al<sup>46</sup> concluded that these kinds of interventions, focused on key adults in the adolescents' environment, such as parents, teachers and community members, are effective in reducing perpetration of violence and victimization among adolescents.

Our research found that when penetrative SV was evaluated within the first week, 55% of the sexually abused girls presented at least one genital lesion. A huge variability in frequency of genital lesions after SV is described in literature, with a rate ranging from 22.8%<sup>47</sup> to 87%.<sup>48</sup> This variability may depend on several factors. For instance, timing and modality of gynecological examination (for example the use of colposcopy) and the expertise of the examiner are crucial in identifying genital lesions. In addition, the presence of genital lesions strongly depends on specific characteristics of victims, perpetrators, and modality of sexual assault. Moreover, there are inconsistencies among studies as regard clinical and anatomical classification of genital lesions caused by sexual abuse; some authors, for example, do not include genital redness in their analysis.<sup>49</sup> Given these observations, and as already assessed by literature,<sup>49,50</sup> it would be important to raise awareness among social workers, police officers, magistrates, and prosecutors of the limited role of genital lesions in confirming a sexual abuse, as the absence of any type of genital lesions does not contrast with the suspect of sexual victimization. However, a detailed and exhaustive description of genital lesions, if present – including pictures or videos – could be of great value for the success of the judicial process, and should be encouraged among healthcare professionals



involved in the emergency care of sexually abused girls. This could be particularly important if one considers that, as described in our previous study, serological/DNA analyses were requested by the judicial authority in only 9/473 (1.9%) of cases of sexual violence among adolescents.<sup>51</sup> The cause of such infrequent use of genetic analysis in criminal proceedings regarding sexual violence in Italy is difficult to explain. Probably, as a result of practice and cultural factors, Italian public prosecutors are accustomed to relying mostly on traditional pieces of evidence such as oral witnesses, presence of physical lesions, and wiretappings.<sup>51</sup> Similarly, we observed that magistrates or judges requested serological and/or DNA analyses in 86 out of 1211 (7,1%) cases of sexual violence against adult women.<sup>52</sup>

The most important limitation of the current study is that the data were collected retrospectively from existing medical records. This methodology carries the typical limitations of recorded patient information, including high rate of unreported information and possible errors.

In conclusion, the evidence provided by the present study confirms that previous SV, alcohol or other drug abuse and past exposure to domestic violence or childhood maltreatment were important vulnerability factors for sexual victimization in adolescence, and that in more than half of cases the perpetrator of the sexual abuse was a known person. Moreover, findings underline the need for more effective public policies aimed at preventing SV in young girls, with a specific focus on the needs of the adolescent population.<sup>27</sup>

When an acute sexual assault occurs, victims should receive a medical evaluation as soon as possible, involving a forensic collection of all the anatomical and biological elements. Healthcare figures should have advanced and continuous training in the evaluation of the sexual assaulted victims and should fully collaborate with all the other professional figures involved in these cases, such as psychologists, social workers and lawyers. A prompt identification of sexual victimization may help reduce the risk of future major health problems and/or subsequent sexual victimization in adulthood.

## Disclosure

The authors report no conflicts of interest for this work.

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