

## Sexual Violence Against Women With Disabilities: Experiences With Force and Lifetime Risk



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**Introduction:** Emerging research suggests that people with disabilities experience an increased risk of sexual violence. However, few studies have examined the relationship between disability types and various forms of sexual violence, involving either physical or nonphysical force.

**Methods:** This cross-sectional study used nationally representative data from years 2011–2017 of the National Survey of Family Growth among women aged 18–44 years. Analyses were conducted in March 2020–June 2021. Using binary and multinomial logistic regression models, lifetime risk of sexual violence and experience of physical or nonphysical force at first intercourse were modeled as a function of disability type (sensory, physical, cognitive, or  $\geq 2$  disabilities). Models also controlled for relevant demographic confounders.

**Results:** Women with any type of disability reported experiencing sexual violence in their lifetime approximately double the proportion of that experienced by nondisabled women (~30% vs 16.9%), with women with multiple disabilities experiencing the greatest prevalence (42.1%) and risk (AOR=2.94,  $p < 0.001$ ) than nondisabled women. Women with cognitive disabilities or multiple disabilities were significantly more likely to experience either physical (cognitive: AOR=1.55,  $p < 0.001$ ; multiple: AOR=1.50,  $p < 0.05$ ) or nonphysical force (cognitive: AOR=2.28,  $p < 0.01$ ; multiple: AOR=2.74,  $p < 0.001$ ) during their first intercourse than nondisabled women.

**Conclusions:** Results of this study suggest that future research should focus on the association between various types of disability and sexual violence. The development of inclusive evidence-based violence intervention and prevention programs for girls and women with disabilities is recommended.

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### INTRODUCTION

Sexual violence (SV) is a significant public health problem that impacts millions of people in the U.S. annually.<sup>1</sup> SV is a broad term encompassing unwanted, nonconsensual sexual acts, including acts of force, coercion, touching, intimidation, or violence.<sup>2,3</sup> There have been many attempts to understand how age, sex, sexual orientation, race/ethnicity, or education level impact the risk of SV.<sup>4</sup> However, disability status has historically been understudied in research on SV,<sup>5</sup> despite that people with disabilities face several additional risk factors for SV. People with disabilities are at a higher risk for SV owing to increased reliance on caregivers, communication/language barriers, being perceived

as less credible victims, being socialized to have unquestioning compliance, and perceived vulnerability.<sup>6,7</sup> In addition, they are often stereotyped as nonsexual, hypersexual, or eternal children.<sup>8,9</sup> People with disabilities also tend to have reduced knowledge of sexual education topics,

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specifically safe sex and sexual rights, and are often not included in school-based sex education courses with their nondisabled peers.<sup>10</sup>

Emerging research suggests that people with disabilities are at an increased risk of SV, although prevalence estimates vary between 7% and 40%.<sup>11–13</sup> One study estimated that 39.9% of women with disabilities experienced SV in their lifetime,<sup>14</sup> whereas another study found that women with disabilities are 4 times more likely to experience sexual assault than nondisabled women.<sup>5</sup> Another study found that 11.1% of women with disabilities experienced nonpartner SV in their lifetime, and risk did not differ by disability type.<sup>15</sup> However, previous studies face several issues. First, many of these studies treat disability as a monolithic category, simply comparing people with disabilities/nondisabled or at most distinguishing between 1 or 2 types of disabilities,<sup>5,11,13,16,17</sup> although SV risk could differ significantly by disability type. Indeed, some research suggests that the risk of SV may be especially high for individuals with intellectual disabilities<sup>11,18</sup>; 1 study of adults with an intellectual disability diagnosis found that 48.1% of sampled women experienced SV in their lifetime.<sup>14</sup>

Second, research focusing on people with disabilities often treats SV as a single category,<sup>19–21</sup> without distinguishing between physical and nonphysical force. However, this distinction is important for clinicians and public health practitioners who seek to implement prevention/response efforts for SV against women with disability. Interventions aimed at addressing SV owing to physical force may potentially be less effective at addressing SV owing to nonphysical force. Nonphysical force is more prevalent than physical force and can exacerbate victim blaming because nonphysical force is considered more socially permissible.<sup>22</sup>

This study analyzes the relationship between disability status and experience of SV while addressing both these issues. First, it distinguishes between individuals with sensory, physical, cognitive, and  $\geq 2$  disabilities and those with no disabilities. Second, in addition to lifetime experience of SV, this study also distinguishes between physical, nonphysical, and no force experienced during first vaginal intercourse (VI).

## METHODS

### Study Sample

This study was cross-sectional, using publicly available data from the National Survey of Family Growth (NSFG). The NSFG is a representative in-person survey (sensitive questions, including all questions concerning SV, were answered privately using Audio Computer-Assisted Self-Interviewing, which is associated with decreased social desirability bias<sup>23,24</sup>) conducted on a multistage

probability sample of non-institutionalized men and women aged 15–44 years living in the U.S.<sup>25</sup> Only female NSFG respondents aged 18–44 years were analyzed in this study because the NSFG does not ask SV questions to respondents aged <18 years and because the risk factors for SV differ greatly between men and women.<sup>1</sup> Data from years 2011–2013, 2013–2015, and 2015–2017 were pooled for a total sample of 16,176 female respondents.<sup>1</sup> This study was reviewed by the Brandeis University IRB and deemed exempt.

### Measures

This study analyzed 2 measures of SV. The first was a measure of lifetime experience of SV through a binary variable indicating whether the respondent had ever been forced into VI by a male. Respondents were classified as ever been forced into VI ( $n=2,901$ ) if they reported that their first VI with a male was not voluntary or if they answered *yes* to the question: *At any time in your life, have you ever been forced by a male to have VI?* Respondents were classified as never having been forced into VI ( $n=11,375$ ) if they reported that their first VI was voluntary and if they had never been forced to have VI at any other time. Respondents aged <18 years were excluded from answering these questions ( $n=1,744$ ), and other respondents who refused or were otherwise unascertained ( $n=156$ ) were treated as missing.

Second, following Williams et al.,<sup>26</sup> the research team combined a series of variables related to the respondent's first VI to create a variable indicating whether the respondent experienced physical force, nonphysical force, or no force during first VI. Respondents aged 18–44 years who reported ever having sex were asked to describe how wanted their first VI was, if they considered it voluntary, and then a series of 7 nonmutually exclusive questions were asked to determine whether coercion/force was used. The questions were (1) *Were you given alcohol/drugs?* (2) *Did you do what they said because they were bigger/a grown-up?* (3) *Were you pressured by their words/actions, but without threats of harm?* (4) *Were you threatened with physical hurt/injury?* (5) *Were you threatened the relationship would end?* (6) *Were you physically hurt/injured?* (7) *Were you physically held down?* If individuals reported being physically hurt/held down, they were categorized as experiencing physical force ( $n=606$ ). If respondents said *yes* to any of the other 5 questions, they were categorized as experiencing nonphysical force ( $n=2,022$ ). If respondents reported that they wanted their first VI, reported that they considered it voluntary, or said *no* to all the 7 questions, they were categorized as having experienced no force ( $n=10,600$ ). Respondents aged <18 years ( $n=1,744$ ) or who never had sex ( $n=775$ ) were excluded from answering these questions, and unascertained or refused responses ( $n=429$ ) were treated as missing. The only difference between this study's categorization and that of Williams and colleagues<sup>26</sup> was that the previous study defined being pressured by nonthreatening words/actions as neither physical nor nonphysical force, whereas this study defined it as nonphysical force.

To explore heterogeneity in the risk of SV across disability types, a 5-category measure of disability was created on the basis of the standard 6 disability questions.<sup>27</sup> Respondents were divided into 5 mutually exclusive disability groups: sensory (serious difficulty hearing/seeing), physical (serious difficulty walking, climbing stairs, dressing, bathing, or doing errands alone), cognitive (serious difficulty concentrating, remembering, or making

decisions),  $\geq 2$  disabilities (serious difficulty on  $\geq 2$  disability questions), and no disability (reference).<sup>28–30</sup>

This study accounted for potential confounders that research suggests are associated with the risk of SV, including a binary recode of age at first sex ( $\geq 18$  years,  $\leq 17$  years), education level (less than high school, high school, some college, college graduate), race (Hispanic, non-Hispanic White, non-Hispanic Black, Other), federal poverty level ( $<100\%$ ,  $100\%–199\%$ ,  $\geq 200\%$ ), sexual orientation (heterosexual, bisexual, or homosexual), and first sex partner type (married/engaged/living together, dating, friend/not dating, someone else).<sup>31</sup>

## Statistical Analysis

Data analyses were conducted using Stata, version 17. Prevalence of demographic characteristics and experiences with SV were initially generated by disability type in addition to chi-squared analysis. Next, experiences of lifetime SV were analyzed using a binary logistic regression model, and experience of force at first VI was analyzed using a multinomial logistic regression model, accounting for confounders. Because AORs from binary logit models and risk ratios from multinomial logit models can be challenging to interpret, average marginal effects were calculated to provide an intuitive measure of effect size. All analyses used NSFG-provided post-stratification 2011–2017 weights.

## RESULTS

Overall, 20.7% of respondents reported having any disability (with disability:  $n=3,352$ , without disability:  $n=12,812$ ). As shown in Table 1, a total of 3.5% of respondents reported having a sensory disability ( $n=562$ ), 2.1% reported a physical disability ( $n=335$ ), 8.3% reported a cognitive disability ( $n=1,344$ ), and 6.9% reporting having  $\geq 2$  disabilities ( $n=1,111$ ). Most respondents with disability identified as non-Hispanic White, followed by non-Hispanic-Black or Hispanic, and other. Women with disabilities were more likely to be living in poverty, regardless of disability type, than nondisabled women and were more likely to have less than a high-school diploma.

Women with sensory, physical, and cognitive disabilities reported their first VI with a man before age 13 years at approximately double the prevalence as nondisabled women, and women with  $\geq 2$  disabilities reported at almost 4 times the prevalence (Table 1). In addition, women with disabilities were less likely to have their first experience of VI with a spouse, significant other, or friend than nondisabled women. Table 1 shows other relevant descriptive statistics.

Table 2 shows that women with disabilities were much more likely to have ever been forced into sex than nondisabled women. Approximately 17% of nondisabled women reported ever having forced VI. For those with sensory, cognitive, or physical disabilities, the prevalence of being forced was almost twice as high (27%–31%).

For women with  $\geq 2$  disabilities, the prevalence was nearly 3 times as high (42%).

As shown in Table 2, approximately 17% of nondisabled women experienced any type of force (14% non-physical, 3.3% physical) at their first VI. For women with cognitive or  $\geq 2$  disabilities, the prevalence was approximately twice as high ( $\geq 2$  disabilities: 34.2%, cognitive: 29.9%). Prevalence of physical force was approximately 3 times as high for those with physical (9.3%) or cognitive (8.3%) disabilities and 4 times as high for those with  $\geq 2$  disabilities (13.2%). Prevalence of nonphysical force at first VI was similar for women with physical (11.0%) or sensory (15.3%) disabilities to that of nondisabled women (14.3%) but approximately 50% higher for women with cognitive disabilities (21.6%) or  $\geq 2$  disabilities (21.0%).

Table 3 reports the AORs from a binary logit model of ever being forced into sex. The model found that, after accounting for confounders, women with disabilities were significantly more likely to have ever been forced into sex than their nondisabled counterparts ( $p<0.01$ ). Estimating average marginal effects indicated that on average, women with sensory disabilities were approximately 8 percentage points more likely to have been forced into sex in their lifetime and that those with physical and cognitive disabilities were approximately 10 percentage points more likely than similar women with no disabilities. Women who reported  $\geq 2$  disabilities had the greatest disparity among disability types, being on average 20 percentage points more likely to have ever been forced into sex than similar nondisabled women ( $p<0.05$ ).

Table 4 presents the results from a multinomial logit model on the likelihood of experiencing physical or non-physical force (opposed to no force) at first VI. The model indicated that, after accounting for confounders, women with cognitive disabilities ( $p<0.01$ ) and  $\geq 2$  disabilities ( $p<0.05$ ) were significantly more likely to experience nonphysical force as opposed to no force than those with no disability. On average, women with cognitive disabilities and those with  $\geq 2$  disabilities were 5.2 percentage points and 4.5 percentage points, respectively, more likely to experience nonphysical force as opposed to no force than similar nondisabled women. Women with sensory or physical disabilities were not significantly more likely to experience nonphysical force at first VI than nondisabled women.

The model also indicated that women with physical disabilities ( $p<0.01$ ), cognitive disabilities ( $p<0.01$ ), or  $\geq 2$  disabilities ( $p<0.001$ ) were significantly more likely to experience physical force (opposed to no force) at first VI: on average, approximately 4 percentage points more likely for those with physical disabilities, 3 percentage

**Table 1.** Descriptive Characteristics by Disability, NSFG 2011–2017: Female Respondents Aged 18–44 Years

| Variables                                | No disability<br>(n=12,812, 79.3%),<br>n (%) | Sensory disability<br>(n=562, 3.5%),<br>n (%) | Physical disability<br>(n=335 2.1%),<br>n (%) | Cognitive disability<br>(n=1,344, 8.3%),<br>n (%) | ≥2 disabilities<br>(n=1,111, 6.9%),<br>n (%) |
|--|--|---|---|---|--|
| Poverty level                            |  |   |   |   |  |
| <100%                                    | 3,823 (29.8)                                 | 237 (40.0)                                    | 135 (40.3)                                    | 1,096 (48.2)                                      | 601 (54.1)                                   |
| 100%–199%                                | 2,929 (22.9)                                 | 141 (23.8)                                    | 87 (26.0)                                     | 514 (22.6)  | 236 (21.2)                                   |
| ≥200%                                    | 6,060 (47.3)                                 | 214 (36.2)                                    | 113 (33.7)                                    | 665 (29.2)  | 274 (24.7)                                   |
| Race/ethnicity                           |  |   |   |   |  |
| Non-Hispanic White                       | 5,781 (45.1)                                 | 214 (36.2)                                    | 157 (46.9)                                    | 1,061 (46.6)                                      | 530 (47.7)                                   |
| Non-Hispanic Black                       | 2,657 (20.7)                                 | 159 (26.9)                                    | 88 (26.3)                                     | 440 (19.3)  | 219 (19.7)                                   |
| Hispanic                                 | 3,157 (24.6)                                 | 165 (27.9)                                    | 55 (16.5)                                     | 532 (23.4)  | 242 (21.8)                                   |
| Other                                    | 1,217 (9.5)                                  | 54 (9.1)                                      | 35 (10.5)                                     | 242 (10.6)  | 120 (10.8)                                   |
| Education                                |  |   |   |   |  |
| Less than high school                    | 2,575 (20.1)                                 | 153 (25.8)                                    | 87 (26.0)                                     | 766 (33.7)  | 370 (33.3)                                   |
| High school graduate                     | 3,074 (24.0)                                 | 170 (28.7)                                    | 121 (36.1)                                    | 712 (31.3)  | 394 (35.5)                                   |
| Some college                             | 3,774 (29.5)                                 | 177 (29.9)                                    | 94 (28.1)                                     | 598 (26.2)  | 269 (24.2)                                   |
| College graduate                         | 3,389 (26.5)                                 | 92 (15.5)                                     | 33 (9.9)                                      | 199 (8.8)   | 78 (7.0)                                     |
| Age, years (at first sexual intercourse) |  |   |   |   |  |
| μ=17.80 (17.7–17.9)                      |  | μ=17.56 (20.2–28.9)                           | μ=17.16 (16.1–18.2)                           | μ=16.9 (16.5–17.4)                                | μ=16.2 (15.8–16.7)                           |
| ≤12                                      | 219 (1.7)                                    | 18 (3.2)                                      | 13 (3.9)                                      | 51 (3.8)  | 87 (7.8)                                     |
| 13–17                                    | 6,600 (51.5)                                 | 336 (59.8)                                    | 194 (57.9)                                    | 757 (56.3)  | 673 (60.6)                                   |
| ≥18                                      | 4,138 (32.3)                                 | 140 (24.9)                                    | 87 (26.0)                                     | 276 (20.5)  | 199 (17.9)                                   |
| First sex partner type                   |  |   |   |   |  |
| Married/engaged/<br>living together      | 1,267 (11.5)                                 | 39 (7.8)                                      | 37 (12.5)                                     | 87 (8.0)  | 74 (7.7)                                     |
| Dating                                   | 7,115 (64.5)                                 | 323 (64.6)                                    | 165 (55.6)                                    | 630 (57.6)  | 523 (54.2)                                   |
| Friend/not dating                        | 2,088 (18.9)                                 | 98 (19.6)                                     | 61 (20.5)                                     | 241 (22.1)  | 237 (24.6)                                   |
| Someone else                             | 559 (5.1)                                    | 40 (8.0)                                      | 34 (11.5)                                     | 135 (12.4)  | 131 (13.6)                                   |
| Sexual orientation                       |  |   |   |   |  |
| Heterosexual                             | 8,273 (92.9)                                 | 359 (89.8)                                    | 180 (83.0)                                    | 755 (84.1)  | 283 (79.3)                                   |
| Homosexual                               | 136 (1.53)                                   | 8 (2.0)                                       | 8 (3.7)                                       | 27 (3.0)  | 32 (4.4)                                     |
| Bisexual                                 | 500 (5.6)                                    | 33 (8.3)                                      | 29 (13.4)                                     | 116 (12.9)  | 120 (16.3)                                   |

Note: Samples sizes are unweighted. All chi-square tests were significant at  $p < 0.001$ . The design adjusted chi-square. NSFG, National Survey of Family Growth.

points for those with cognitive disabilities, and 4 percentage points for those with  $\geq 2$  disabilities. After accounting for confounders, women with sensory disabilities were not significantly more likely to experience physical force, as opposed to no force, than nondisabled women.

## DISCUSSION

This study found that among women aged 18–44 years with sensory, physical, or cognitive disabilities, close to 30% reported experiencing forced VI at least once in their life, significantly more than the prevalence among nondisabled women, consistent with previous studies.<sup>5,13,14,32,33</sup> For those with multiple disabilities, the prevalence was  $>40\%$ , notably on the upper range of previous estimates.<sup>13,14</sup> In addition, 34.2% of women with multiple disabilities experienced either physical/

nonphysical force during their first VI, twice the prevalence among nondisabled women (17.7%). After controlling for confounders, women with any disability type included in this study were significantly more likely to have experienced forced sex during their lifetime than nondisabled women, with the greatest risk among women with  $\geq 2$  disabilities. There was a significant, positive association between disability status and experiencing both physical and nonphysical force during their first VI, with the highest risk of both force types among women with cognitive or  $\geq 2$  disabilities. After adjusting for confounders, women with physical disabilities were more likely to experience physical force but not significantly more likely to experience nonphysical force.

Perhaps the most important finding of this study is that when it comes to SV, not all kinds of disabilities are equal: women with certain disabilities are at disproportionately high risk for SV. Although having any kind of

**Table 2.** Disability Type and Frequency of Force (Counts and Proportions)

| Variables              | No disability<br>(n=12,812),<br>n (%) | Sensory disability<br>(n=562),<br>n (%) | Physical disability<br>(n=335),<br>n (%) | Cognitive disability<br>(n=1,344),<br>n (%) | ≥2 disabilities<br>(n=1,111),<br>n (%) |
|------------------------|---------------------------------------|---|--|---|--|
| Ever forced into sex   | 1,932 (16.9)                          | 143 (28.4)                              | 82 (27.1)                                | 335 (31.0)                                  | 409 (42.1)                             |
| Force at first sex     |                                       |   |  |   |  |
| None                   | 8,701 (82.3)                          | 376 (78.8)                              | 224 (79.7)                               | 704 (70.1)                                  | 590 (65.9)                             |
| Non-physical           | 1,515 (14.3)                          | 73 (15.3)                               | 31 (11.0)                                | 217 (21.6)                                  | 188 (21.0)                             |
| Physical               | 351 (3.3)                             | 28 (5.9)                                | 26 (9.3)                                 | 83 (8.3)                                    | 118 (13.2)                             |
| Any force at first sex | 1,866 (17.7)                          | 101 (21.2)                              | 57 (20.3)                                | 300 (29.9)                                  | 306 (34.2)                             |

Note: Samples sizes are unweighted. All chi-square tests were significant at  $p < 0.001$ . The design adjusted chi-square.

**Table 3.** Binary Logit Model of Lifetime Risk of Ever Being Forced Into Sex

| Disability type | AOR (95% CI)                |
|-----------------|-----------------------------|
| No disability   | ref                         |
| Sensory         | <b>1.85 (1.31, 2.61)**</b>  |
| Physical        | <b>1.67 (1.12, 2.50)**</b>  |
| Cognitive       | <b>1.89 (1.44, 2.48)***</b> |
| ≥2              | <b>2.94 (2.25, 3.83)***</b> |

Note: Boldface indicates statistical significance (\*\*\* $p < 0.001$ , \*\* $p < 0.01$ , \* $p < 0.05$ ).

Models adjusted for age, education, race/ethnicity, federal poverty level, partner relationship, and sexual orientation.  $n = 9,191$ , Weighted  $n = 34,534,631$ .

disability increased the lifetime risk of experiencing SV, those with cognitive or multiple disabilities were at the greatest risk. This finding differs from that of Malihi et al.<sup>15</sup> study, which did not find disparity in risk by disability type. Women with cognitive or multiple

**Table 4.** Multinomial Logit Model of Experiencing Force (Physical/Nonphysical) During First VI

| Force type   | Disability type | mLogit Model:<br>AOR (95% CI) |
|--------------|-----------------|-------------------------------|
| No force     | ref             | ref                           |
| Non-physical | No disability   | ref                           |
|              | Sensory         | 1.27 (0.79, 2.02)             |
|              | Physical        | 1.04 (0.61, 1.80)             |
|              | Cognitive       | <b>1.55 (1.17, 2.06)**</b>    |
|              | ≥2              | <b>1.50 (1.04, 2.16)*</b>     |
| Physical     | No disability   | ref                           |
|              | Sensory         | 1.40 (0.67, 2.95)             |
|              | Physical        | <b>2.88 (1.35, 3.82)**</b>    |
|              | Cognitive       | <b>2.28 (1.36, 3.82)**</b>    |
|              | ≥2              | <b>2.74 (1.80, 4.18)***</b>   |

Note: Boldface indicates statistical significance (\* $p < 0.01$ , \*\* $p < 0.05$ , \*\*\* $p < 0.001$ ).

Models adjusted for age of first sex, education, race, poverty, and sexual orientation.  $n = 9,118$ , Weighted  $n = 34,279,096$ . VI, vaginal intercourse.

disabilities not only had the highest risk of lifetime SV among all disability types but were significantly more likely to report experiencing either physical/nonphysical force during their first VI. By contrast, women with sensory disabilities were more likely than nondisabled women to report ever having experienced SV but were not any more likely to report experiencing physical/non-physical force during their first experience of VI.

These results indicate that future research should avoid binary conceptions of disability and should at least distinguish between individuals with cognitive or multiple disabilities and those who have sensory or physical disabilities. Stereotypes/stigma and other experiences differ by disability type,<sup>34</sup> especially among those with visible/invisible disabilities.<sup>18</sup> A study of public stigma found increased negative stereotypes and lower acceptance of people with intellectual disabilities than the acceptance of those with physical disabilities.<sup>18</sup> These sociocultural differences likely influence at least part of the disparity observed in this study comparing SV risk. Additional research is needed to empirically understand why these disparities exist between disability types and specifically why the disparity is so great among women with cognitive or multiple disabilities.

This study provides many important suggestions for future policy and research. Most notably, education should be provided to parents/family, teachers, or other professionals who work with women/girls with disabilities on what SV is and that it is never permissible, to reduce perpetration. In addition, these groups should be educated on the risk of SV among women with disabilities and what to do if SV occurs. This work also points to the need for structured screening for SV by clinicians/other professionals who work with girls/women with disabilities and increased focus on prevention.<sup>35</sup> In addition, more training is needed among SV service responders on how to better assist women with disabilities in a way that reduces reporting barriers and accommodates needs. Furthermore, policies or other systematic

measures that prevent abusers from working/otherwise interacting with women with disabilities should be investigated. These findings suggest that providing women with cognitive/multiple disabilities information on identifying and responding to forms of coercion and force may be of importance. More research is needed to understand the perpetrators of SV against women with disabilities, including relationship with the survivor, crime motivation, and preventing SV.

In addition, in these data, most women reported that their first VI occurred before age 18 years, and women with any type of disability were more likely to report their first VI at age  $\leq 12$  years, legally considered rape,<sup>36</sup> than nondisabled women. Although sample size limitations prevented detailed analysis of these findings, this suggests that discussions with girls with disabilities about sexual rights, consent, and reporting may also need to be initiated at an early age. More research is needed to understand the dynamic of age and disability on SV risk.

### Limitations

This study has several limitations. First, owing to data set limitations, this study could only analyze VI by a male perpetrator and did not consider sex experiences outside of that definition. The sample size also restricted further analysis regarding the perpetrator's relationship with the SV survivor. Next, the data set does not allow for determination of the temporal ordering of disability status and sexual encounters. For some respondents, the onset of disability could have occurred after sexual initiation, or the disability could have been caused by a violent sexual encounter. Although it is reasonable to assume that the onset of disability preceded all or most of the respondent's experiences with sexual initiation, especially for cognitive and sensory disabilities, this assumption cannot be tested in the NSFG data set. In addition, the NSFG survey is limited to non-institutionalized adults. Living in an institutional setting is considered a risky setting for SV, so estimates of SV in this study among women with disabilities (who are more likely to be institutionalized than nondisabled peers) are likely conservative.<sup>37,38</sup> Furthermore, the NSFG protocol for accommodating interviewees with disabilities and if any sampled people with disabilities were unable to participate because of lack of accommodation are unknown.<sup>39</sup> Finally, with SV research, there is always a risk for under-reporting experiences owing to stigma and other factors,<sup>24,40,41</sup> and under-reporting is likely more of an issue among SV survivors with disabilities. People with disabilities encounter several unique barriers to reporting, including isolation, mobility/communication barriers, caregiver–perpetrators, not fully understanding

the gravity of what happened, and being less likely to be believed.<sup>42</sup> However, insofar as individuals with disabilities are less likely to report experiences of SV than those without disabilities, then this study's finding of higher risk of SV among women with disabilities should be treated as conservative.

### CONCLUSIONS

This study uniquely contributes to the understanding of SV against women with disabilities and the burden of risk for SV, including the types of force experienced during the first VI. Women with disabilities, especially those with cognitive or multiple disabilities, are at increased risk of experiencing SV in their lifetime and during the first VI. Results of this study suggest that future research distinguishes between various types of disability; support increased education/services for SV prevention among women with disabilities; and recommend the development of inclusive, evidence-based violence intervention/prevention programs for girls/women with disabilities.

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