

Research Article

Epidemiology of Violence Among People with Disabilities in Senegal

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Abstract

Introduction: People with disabilities are disproportionately exposed to violence, often resulting in significant physical and psychological harm. This study examines the prevalence and determinants of violence among persons with disabilities aged 15–69 years in Senegal in 2023, focusing on physical, verbal, and sexual violence. **Methods:** A nationwide cross-sectional descriptive study with an analytical component was conducted from February 9 to March 10, 2023, after approval by the National Ethics Committee for Health Research of Senegal. A total of 1,442 individuals with disabilities were surveyed using standardized tools. Logistic regression analyses were performed to identify factors associated with different forms of violence. **Results:** The most prevalent forms of violence were verbal abuse (42.9%), stigmatization (31.6%), and physical assault (20.3%), while sexual violence was reported by 4.3% of participants. Age was a protective factor, with each additional year reducing the risk of experiencing violence. Women were significantly more likely to report sexual violence. Compared with individuals with regular income, those without income were less exposed to verbal and physical violence, while irregular income reduced the risk of physical violence. Early onset of disability (at birth or during childhood/adolescence) increased vulnerability to verbal and physical abuse, while onset during childhood/adolescence also heightened the risk of sexual violence. Membership in disability organizations and food insecurity were associated with higher risks of verbal and physical violence, whereas drug use was strongly linked to physical violence. **Conclusion:** This study highlights the high prevalence of violence against people with disabilities in Senegal and identifies key sociodemographic and behavioral risk factors. Addressing these determinants is essential to achieving Sustainable Development Goal (SDG) 3 by strengthening health system responses and promoting inclusive protection policies.

Keywords

Disability, Violence, Risk Factors, Epidemiology, Senegal

1. Introduction

An estimated 1.3 billion people (1 in 6 people worldwide) have a significant disability [1]. People with disabilities have

the same and equal right to the highest standard of health as any human being [2, 3]. This right is inherent, universal and

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inalienable, and is enshrined in international law, the United Nations Convention on the Rights of Persons with Disabilities, Article 25 of the right to health [4].

However, the situation of disability increases the risk of violence. According to the National Institute of Statistics and Economic Studies (NSEE), disabled people are 59% more likely to be subjected to violence than able-bodied people [5]; 7.3% of people with disabilities say they are victims of violence [6, 7], compared to 5.1% of people without disabilities [8]. In addition, African countries have a significantly higher risk of sexual violence against people with disabilities than in any other country, and the risks in Western Europe were significantly lower than in the United States [9].

Commitments to SDG 3, health for all, will not be taken into account if health systems do not take into account the issue of violence against people with disabilities [1].

However, there is a lack of data on the violence experienced by people with disabilities in Senegal.

In light of the above, the State of Senegal conducted a nationwide study in 2023 on disability, the use of health services and the violence experienced. This is in order to better understand the challenges that people with disabilities face and to make recommendations to promote a more equitable health system.

This article focuses on the violence experienced by people aged 15 to 69 living with a disability in Senegal in 2023 and presents the factors associated with physical, verbal and sexual violence.

2. Methodology

2.1. Framework of Study

Senegal is located at the westernmost point of the African continent in the Atlantic Ocean. With an area of 196,722km², it is bordered to the north by Mauritania, to the east by Mali, to the south by Guinea and Guinea Bissau, to the west by Gambia, and by the Atlantic Ocean on a 500 km coastline. The 14 regions of Senegal [10] have been grouped into 4 zones according to the unequal territorial distribution of disabilities in Senegal.

2.2. Design of Study

This was a descriptive cross-sectional study with an analytical purpose. It took place from February 9 to March 10, 2023 throughout the Senegalese national territory.

Persons with disabilities aged 15 to 69 years from the 14 regions of Senegal were included in this study, objectively identified by direct observation and from the assessment proposed by the Washington Group (WG). All categories of disabilities were included: auditory, communication, visual, motor, mental, and intellectual [11]. Albinos and lepers were

added to this survey.

They were recruited from families, organizations of people with disabilities, specialized structures for the care of people with disabilities, the resettlement sites of Thiès and Kédougou, but also in the streets with people with disabilities who have lived on the street. The latter were identified according to the duration of their presence on the street, which had to be greater than or equal to 4 days out of 7 per week.

This study is based on the 2002 World Report on Violence and Health, in which the World Health Organization (WHO) defines violence as “the intentional use of physical force or power, threatened or actual, against oneself, another person, or against a group or community, which either results in or has a high likelihood of resulting in injury, death, psychological harm, maldevelopment, or deprivation” [12, 13]. This definition links intentionality to the act itself, regardless of its outcome. It explicitly excludes unintentional incidents, such as most road traffic accidents and burns [12]. Violence is classified into three main categories based on the characteristics of the perpetrators: (i) Self-directed violence, which includes suicidal behavior as a subcategory; (ii) Interpersonal violence, which occurs between individuals; (iii) Collective violence, which is perpetrated by larger groups or communities.

This classification ensures the inclusion of all types and forms of violence, regardless of context, environment, or life stage of the affected individuals. Additionally, it highlights the physical and mental health consequences of violence on its victims [12]. Each category of violence can manifest in various forms, referring to the nature of the acts committed. The most commonly recognized forms include physical violence [5], sexual violence [7], psychological and verbal abuse, deprivation, and neglect (Figure 1).

2.3. Sampling

The sampling methodology employed was twofold: stratified sampling for persons with disabilities (PWDs) living in households, and time-location sampling for PWDs who had lived on the streets. Stratified sampling was conducted at three levels:

First level: Grouping of regions into geographical zones based on HIV prevalence and proportional to the demographic distribution of PWDs.

Second level: Random selection of Census Districts (CDs) within each zone, proportional to the zone's weight.

Third level: Random selection of individuals from the selected CDs, using a non-replacement sampling approach.

Time-location sampling was used to identify PWDs who regularly frequent high-traffic public areas at specific times, such as markets, mosques, restaurant fronts, commercial zones, intersections, etc.

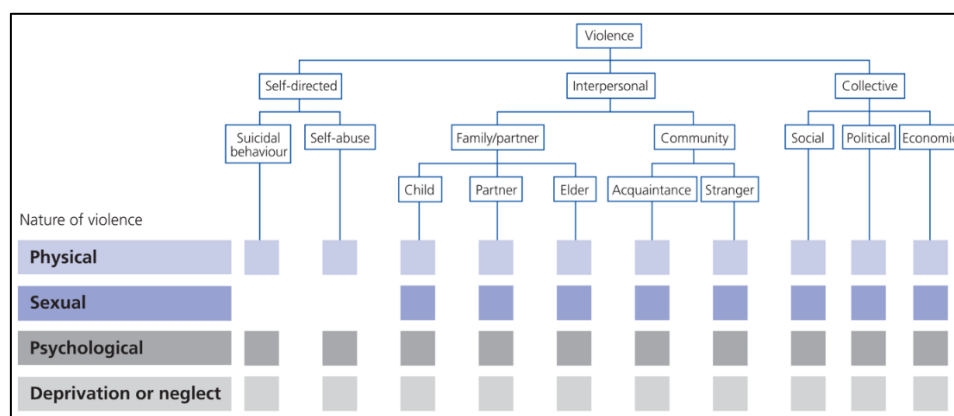


Figure 1. Typology of Violence According to WHO (World Report on Violence, 2002).

The sample size was calculated using a standard sample size determination formula, with a 5% margin of error and a 95% confidence level. The estimated proportion of PWDs was set at 30%, based on findings from the 2015 survey. These calculations yielded an optimal sample size of 323 individuals. Adjustments were made to account for the design effect and anticipated non-response or loss (estimated at 10%), bringing the total to 355 PWDs per zone.

With four geographic zones included in the survey, the total national sample size was set at 1,420 PWDs. Additionally, 10% of PWDs living on the street were added per zone, based on accessibility assessments.

PWDs and the households where they resided were identified in advance by the management team during field missions at the level of each selected Census District (CD). Within each CD, PWDs were randomly selected using a systematic sampling approach without replacement, following a defined interval to achieve the required subsample size for each site.

2.4. Recruitment and Training of Investigators and Supervisors

Investigators and supervisors were recruited based on their educational background, prior experience in survey work, availability, and familiarity with the target population. Given the specific needs of certain groups within the target population, specialists capable of communicating with them—such as sign language interpreters—were also engaged. The recruitment process was inclusive, prioritizing the involvement of persons with disabilities and women. Following recruitment, investigators participated in a one-week training program covering the survey's objectives and strategies, the content and administration of the questionnaires, and the use of tablets for data collection. The training also emphasized the translation of questionnaires into national languages by the interviewers themselves, the principles of confidentiality and ethical conduct, and techniques for effective interpersonal communication. To ensure consistency between the biological and behavioral components of the survey, all team members

were trained simultaneously and under identical conditions.

Joint training sessions allowed for comparison between teams and helped standardize their practices. Despite the investigators' prior experience, practical exercises such as role-plays and case studies were incorporated into the training to reinforce learning and simulate real-world scenarios.

2.5. Data Collection

Data collection was conducted electronically using Open Data Kit (ODK) technology [14] on Android-based devices such as smartphones and/or tablets.

Following the training, a pre-test of the data collection tools was conducted in the suburbs of Dakar, simulating actual survey conditions. The objective of this practical exercise was to evaluate the interviewers' mastery of the data collection procedures and tools. The day after the pre-test, a debriefing session was held with all participants to share lessons learned. Based on this feedback, the data collection tools were revised and finalized.

The data collection process followed a predefined itinerary and schedule, taking into account the geographical distribution of the target population across the national territory. All teams were deployed across the 14 regions of Senegal for a 20-day period, after which they reconvened in Dakar. Each team was provided with a travel itinerary, a list of contacts, and local facilitators for each sample site. Prior to a team's arrival at any site, the controller contacted the designated facilitator to confirm that all necessary arrangements were in place. Upon arrival, the controller first conducted a general awareness session. Next, individuals were selected for the survey according to the established protocol. Interviewers then administered the questionnaire, following informed consent from each participant. Daily debriefings were held between supervisors, the data manager, and interviewers to address any challenges and ensure data quality. A WhatsApp group, managed by the data manager, was created to share real-time updates on the progress of the survey. All completed forms were submitted to the data manager for verification.

2.6. Analysis

Statistical analysis was conducted using RStudio software, version 4.4.0 [15]. The descriptive analysis included qualitative variables, expressed as absolute and relative frequencies with their corresponding 95% confidence intervals. Quantitative variables were summarized using measures of central tendency (mean, median) and dispersion (standard deviation, minimum, and maximum values).

For the multivariate analysis, the dependent variables of interest—"Verbal violence," "Physical violence," and "Sexual violence"—were analyzed separately. Binomial logistic regression models were used for explanatory purposes. To determine the most parsimonious model, two approaches were applied: the automatic forward selection method and the stepwise selection method. Model goodness-of-fit was assessed using the Hosmer-Lemeshow test.

2.7. Ethical Considerations

Ethical approval for this study was granted by the National Ethics Committee for Health Research (CNERS) to the Ministry of Health and Social Action (Authorization No. 000009/MSAS/CNRES/SP dated January 18, 2023). Initial consent for each eligible household was obtained from the head of household. Additionally, all eligible participants were individually invited to participate and asked to provide their free and informed consent. They were informed of the study's objectives, the voluntary nature of participation, and the strict confidentiality of their responses. Non-participation did not affect their access to services offered by the program. Participants had the right to end the interview or withdraw from the study at any point, without needing to provide any justification. Once a participant was identified, the interviewer initiated the informed consent process, beginning with an awareness session during which the interviewer read aloud a standardized information sheet. This document detailed the purpose of the study, its procedures, potential benefits and risks, the right to accept or decline participation, and emphasized the anonymity and confidentiality of responses. After the awareness session, the interviewer signed the information sheet and completed the first consent form, which was also signed by the participant to formalize their agreement to complete the behavioral questionnaire. A copy of the signed information sheet and consent form was provided to the participant. Specific accommodations and support measures

were made available to ensure that individuals with various disabilities could participate fully and safely in the study. Each participant—or a designated witness, when necessary—signed the consent form and received a signed copy, which included the contact details of both the principal investigator and the national ethics committee coordinator. Participation in the study was entirely voluntary and strictly confidential. All data were collected anonymously, using a unique identification number assigned to each participant. The data were securely stored—encrypted and password-protected—on the data collection devices. These protections were clearly explained to participants during the informed consent process.

3. Results

3.1. Description of Individuals with Disabilities

Most of the people living with disabilities were men (52.64%), single (39.74%), Senegalese (98.96%), with primary education (60.64%), irregular income (37.45%) and had income-generating activities (50.55%). The Dakar region had the highest prevalence of people living with a disability (24.62%). The mean age was 39.64 years with a standard deviation of 15.6 years. The median age was 40 years with extremes ranging from 15 to 69 years. Most of the disabled people lived in a fixed family (81.76%). The homeless people represented 5.75%. Most of the homeless people had been living on the street for more than a year (80.72%). A large proportion of the disabled people had daily meal skipping (58.84%) and they lacked health care when they fell ill (83.82%).

Alcohol consumption was found in 5.06% of disabled people. Among alcohol consumers, 35.62% had episodes of drunkenness. Drug use was found in 1.59% with more frequent cannabis consumption.

Motor disability being the most frequently found deficit (73.72%). Visual disability was found at 12.86%. Multiple handicaps were frequent at 25.58%. The onset of the disability was in childhood/adolescence (48.89%), and at birth (25.73%).

Table 1 shows the distribution of people with disabilities according to socio-demographic and economic characteristics, type of disability, lifestyle habits and their alcohol and drug consumption.

Table 1. Distribution of people living with a disability in Senegal in 2023.

Variables	n (%)	95% CI
Region (1442)		
Dakar	355 (24.62%)	[22.43 – 26.94]
Diourbel	24 (1.66%)	[1.09 – 2.51]

Variables	n (%)	95% CI
Fatick	49 (3.39%)	[2.55 – 4.50]
Kaffrine	110 (7.62%)	[6.34 – 9.15]
Kaolack	79 (5.47%)	[4.39 – 6.81]
Kédougou	118 (8.18%)	[6.85 – 9.75]
Kolda	213 (14.7%)	[13.00 – 16.73]
Louga	49 (3.39%)	[2.55 – 4.50]
Matam	61 (4.23%)	[3.28 – 5.44]
Saint Louis	49 (3.39%)	[2.55 – 4.50]
Sédhiou	65 (4.50%)	[3.52 – 5.74]
Tambacounda	159 (11.03%)	[9.48 – 12.78]
Thiès	38 (2.63%)	[1.90 – 3.64]
Ziguinchor	73 (5.06%)	[4.01 – 6.36]
Sex (1442)		
Female	683 (47.36%)	[44.76 – 49.98]
Male	759 (52.64%)	[50.02 – 55.24]
Marital status (1442)		
Single	573 (39.74%)	[37.21 – 42.32]
Divorced/Separated	70 (4.85%)	[3.83 – 6.13]
Polygamous Married	218 (15.12%)	[13.33 – 17.10]
Monogamous Married	473 (32.80%)	[30.39 – 35.30]
Widowed	108 (7.49%)	[6.21 – 9.00]
Nationality (1442)		
Senegalese	1 427 (98.96%)	[98.25 – 99.39]
Guinea Bissau	1 (0.06%)	[0.00 – 0.45]
Guinea Conakry	12 (0.83%)	[0.45 – 1.49]
Others nationalities	2 (0.13%)	[0.02 – 0.56]
Type of education (1442)		
Western/French	580 (40.22%)	[37.69 – 42.81]
Arabic	106 (7.35%)	[6.08 – 8.85]
Koranic	285 (19.76%)	[17.76 – 21.93]
Uneducated	471 (32.66%)	[30.26 – 35.16]
Level of education (686)		
Primary level	416 (60.64%)	[56.86 – 64.30]
Secondary 1er cycle	138 (20.12%)	[17.22 – 23.36]
Secondary 2nd cycle	72 (10.50%)	[8.35 – 13.09]
University	56 (8.16%)	[6.28 – 10.53]
Others levels	4 (0.58%)	[0.19 – 1.59]
Income (1442)		
No income	536 (37.17%)	[34.68 – 39.73]

Variables	n (%)	95% CI
Irregular income	540 (37.45%)	[34.95 – 40.01]
Regular income	366 (25.38%)	[23.17 – 27.73]
Age at onset of disability (1442)		
At birth	371 (25.73%)	[23.50 – 28.08]
Childhood/adolescence	705 (48.89%)	[46.28 – 51.50]
Adulthood	366 (25.38%)	[23.17 – 27.73]
Type of disability (1073)		
Motor	791 (73.72%)	[70.96 – 76.31]
Visual	138 (12.86%)	[10.95 – 15.05]
Communication	18 (1.67%)	[1.03 – 2.69]
Auditory	42 (3.91%)	[2.87 – 5.30]
Mental/ Intellectual	66 (6.15%)	[4.82 – 7.80]
Albino	4 (0.37%)	[0.12 – 1.02]
Leprosy	14 (1.30%)	[0.74 – 2.24]
Multiple disabilities	369 (25.58%)	[23.19 – 27.87]
Membership in an organization for people with disabilities (1442)		
No	596 (41.33%)	[38.78 – 43.93]
Yes	846 (58.67%)	[56.07 – 61.22]
Type of Organization (800)		
Disabled people's organization (OPH)	733 (91.63%)	[89.43 – 93.41]
Community Health Association	21 (2.625%)	[1.67 – 4.05]
Religious Association	12 (1.50%)	[0.81 – 2.68]
Village Association	13 (1.62%)	[0.91 – 2.84]
Other types of organization	21 (2.62%)	[1.67 – 4.05]
Place of residence (1442)		
In several families/from family to family	56 (3.88%)	[2.97 – 5.05]
In a fixed family	1 179 (81.76%)	[79.65 – 83.70]
Several in the same dwelling	104 (7.212%)	[5.96 – 8.70]
Homeless - lives on the street	83 (5.75%)	[4.64 – 7.12]
Alone in a dwelling	20 (1.38%)	[0.87 – 2.17]
Time spent on the street without a fixed address (83)		
From 1 month to less than 6 months	4 (4.81%)	[1.56 – 12.55]
From 6 months to less than a year	7 (8.43%)	[3.75 – 17.14]
Less than a month	5 (6.02%)	[2.24 – 14.12]
One year and more	67 (80.72%)	[70.29 – 88.25]
Do you skip meals during the day? (1409)		
No	580 (41.16%)	[38.59 – 43.79]
Yes	829 (58.84%)	[56.21 – 61.41]
Have you had any lack of care? (1409)		

Variables	n (%)	95% CI
No	228 (16.18%)	[14.32 – 18.23]
Yes	1 181 (83.82%)	[81.77 – 85.68]
Have you had any trips within Senegal? (1442)		
No	1 021 (70.80%)	[68.37 – 73.13]
Yes	421 (29.20%)	[26.87 – 31.63]
Have you had any trips outside Senegal? (1442)		
No	1 391 (96.46%)	[95.34 – 97.33]
Yes	51 (3.537%)	[2.67 – 4.66]
Alcohol consumption (1442)		
No	1 369 (94.94%)	[93.64 – 95.99]
Yes	73 (5.06%)	[4.01 – 6.36]
Alcohol consumption in the past week (1442)		
Every day	7 (9.58%)	[4.27 – 19.33]
At least 1 time a week	13 (17.81%)	[10.19 – 28.89]
Less than 1 time a week	14 (19.18%)	[11.25 – 30.42]
Not at all	39 (53.42%)	[41.44 – 65.05]
Do you have episodes of drunkenness due to alcohol? (73)		
No	47 (64.38%)	[52.24 – 75.00]
Yes	26 (35.62%)	[25.00 – 47.76]
Drug use (1442)		
No	1 419 (98.40%)	[97.58 – 98.96]
Yes	23 (1.595%)	[1.04 – 2.42]
Type of drug used (28)		
Cannabis	18 (64.29%)	[44.11 – 80.69]
Cocaine	0 (0%)	[0.00 – 15.02]
Heroin	0 (0%)	[0.00 – 15.02]
Amphetamine Tablet	1 (3.57%)	[0.19 – 20.24]
Other types of drugs	9 (32.14%)	[16.58 – 52.43]

3.2. Violence Experienced of Persons with Disabilities

Among the 1,442 individuals aged 15 to 69 living with disabilities who were surveyed, 42.86% reported having experienced verbal violence, making it the most frequently reported form of violence. Physical violence affected 20.3% of respondents, while sexual violence, though less common (4.3%), represents a severe violation of personal integrity.

Social forms of violence were also widely reported: 31.6% experienced stigmatization, 29.7% reported discrimination, and 19.2% reported harassment. Approximately 10% of participants mentioned having been victims of rejection, abandonment, or social exclusion. Lastly, 1.8% reported having been victims of attempted murder. These findings highlight the high prevalence and diverse nature of violence experienced by persons with disabilities, underscoring their social vulnerability and the urgent need for targeted interventions to ensure their protection and inclusion (see [Table 2](#)).

Table 2. Prevalence of Different Forms of Violence Experienced by Persons with Disabilities Aged 15–69 in Senegal, 2023.

Variables (N=1442)	n (%)	95% CI
Verbal violence		
No	824 (57.14%)	[54.54 – 59.71]
Yes	618 (42.86%)	[40.29 – 45.46]
Physical violence		
No	1 149 (79.68%)	[77.49 – 81.71]
Yes	293 (20.32%)	[18.29 – 22.51]
Sexual violence		
No	1 380 (95.70%)	[94.49 – 96.66]
Yes	62 (4.30%)	[3.34 – 5.51]
Rejection, abandonment		
No	1 297 (89.94%)	[88.25 – 91.42]
Yes	145 (10.06%)	[8.58 – 11.75]
Stigmatization		
No	986 (68.38%)	[65.90 – 70.76]
Yes	456 (31.62%)	[29.24 – 34.10]
Discrimination		
No	1 014 (70.32%)	[67.87 – 72.65]
Yes	428 (29.68%)	[27.35 – 32.13]
Exclusion		
No	1 287 (89.25%)	[87.51 – 90.78]
Yes	155 (10.75%)	[9.22 – 12.49]
Attempted murder (homicide)		
No	1 416 (98.20%)	[97.33 – 98.79]
Yes	26 (1.80%)	[1.21 – 2.67]
Harassment		
No	1 165 (80.79%)	[78.64 – 82.77]
Yes	277 (19.21%)	[17.23 – 21.36]

3.3. Risk Factors of Violence Against Persons with Disabilities

1) Verbal violence

Multivariate analysis revealed several factors associated with the occurrence of verbal violence among people living with disabilities (see Table 3). Age emerged as a protective factor: each additional year significantly reduced the risk of being a victim (OR = 0.98; 95% CI = [0.98–0.99]; $p < 0.001$), suggesting that younger individuals are particularly exposed. Income level also played an important role. Individuals

without income were at lower risk of experiencing verbal violence (OR = 0.56; $p = 0.001$) compared to those with a regular income. This result may reflect either a social bias or differences in visibility and exposure based on economic status. The age at onset of disability proved to be a determining factor. An early onset—at birth or during childhood/adolescence—significantly increased the risk of verbal violence compared to disability acquired in adulthood (OR = 1.67 and 1.87, respectively; $p < 0.05$). Living conditions marked by precarity increased vulnerability. Skipping daily meals tripled the risk of experiencing verbal violence (OR = 3.20; $p < 0.001$), highlighting the impact of social inequalities

on exposure to violence. Finally, alcohol consumption showed a trend toward increased risk (OR = 1.69; $p = 0.065$), although the relationship did not reach statistical significance. Nevertheless, this observation suggests a potential link that warrants further investigation in future research.

2) Physical violence

Statistical analyses identified several significant determinants of physical violence experienced by people living with disabilities (see Table 3). As with verbal violence, age was a protective factor: each additional year reduced the risk of exposure (OR = 0.98; $p < 0.001$), indicating that younger individuals are more vulnerable. Economic status appeared to be a key determinant. Individuals with no income (OR = 0.58; $p = 0.003$) and those with irregular income (OR = 0.69; $p = 0.037$) had a significantly lower risk of experiencing physical violence compared to those with a regular income. This paradoxical relationship raises questions about the social dynamics of exposure, visibility, and stigma linked to economic resources. The age at onset of disability was another important factor. When disability occurred at birth or during childhood/adolescence, the risk of physical violence was significantly higher compared to disability acquired in adulthood, reflecting prolonged and cumulative exposure to discrimination and aggression. Indicators of extreme precarity further increased this risk. Skipping meals markedly raised the likelihood of experiencing physical violence (OR = 3.15; $p < 0.001$), underscoring the direct impact of difficult living conditions. Finally, drug use was the most strongly associated risk factor: it increased the likelihood of experiencing physi-

cal violence more than six-fold (OR = 6.67; $p < 0.001$). This finding highlights the particular vulnerability of people with disabilities who use psychoactive substances, as they face both social stigma and direct violence.

3) Sexual violence

The analysis of factors associated with sexual violence revealed several key determinants (see Table 3). Female gender was the most prominent risk factor: women with disabilities were more than three times as likely to report having experienced sexual violence compared to men (OR = 3.28; $p = 0.004$), confirming the heightened vulnerability of women to this type of assault. Age played a protective role (OR = 0.97; $p = 0.018$), suggesting that younger individuals are more exposed to sexual violence. The age at onset of disability proved particularly significant. When disability occurred during childhood, the risk of sexual violence was more than ten times higher (OR = 10.6; $p = 0.022$) compared to disability acquired in adulthood, highlighting the extreme vulnerability of children with disabilities and the persistence of risk throughout their lives. Other factors showed noteworthy associations but require cautious interpretation. For instance, having traveled outside Senegal was associated with an increased risk of sexual violence (OR = 3.26; $p = 0.049$), although this result may reflect specific sociocultural contexts or selection biases. Similarly, drug use was linked to a notable increase in risk (OR = 5.26; $p = 0.053$), though it did not reach statistical significance. Finally, lack of access to care was not significantly associated, likely due to a very wide confidence interval.

Table 3. Multivariate Logistic Regression of Risk Factors for Verbal, Physical, and Sexual Violence Among Persons with Disabilities.

Covariables	OR	95% CI	p-value
Verbal violence			
Age (in years)	0.98	[0.98 - 0.99]	<0.001*
Income			
Regular income	1.00	—	
Irregular income	0.94	[0.68 - 1.29]	0.7
No income	0.56	[0.40 - 0.79]	0.001*
Age at onset of disability			
Adulthood	1.00	—	
Childhood/adolescence	1.87	[1.34 - 2.62]	<0.001*
At Birth	1.67	[1.13 - 2.46]	0.010*
Notion of skipping meals during the day			
No	1.00	—	
Yes	3.20	[2.46 - 4.17]	<0.001*

Covariables	OR	95% CI	p-value
Alcohol consumption			
No	1.00	—	
Yes	1.69	[0.97 - 2.98]	0.065
Physical violence			
Age (in years)	0.98	[0.96 - 0.99]	<0.001*
Income			
Regular income	1.00	—	
Irregular income	0.69	[0.49 - 0.98]	0.037*
No income	0.58	[0.41 - 0.83]	0.003*
Age at onset of disability			
Adulthood	1.00	—	
Childhood/adolescence	1.54	[1.03 - 2.34]	0.040*
Birth	1.63	[1.03 - 2.62]	0.040*
Notion of skipping meals during the day			
No	1.00	—	
Yes	3.15	[2.29 - 4.38]	<0.001*
Drug use			
No	1.00	—	
Yes	6.67	[2.43 - 19.5]	<0.001*
Sexual violence			
Sex			
Male	1.00	—	
Female	3.28	[1.51 - 7.83]	0.004*
Age (in years)	0.97	[0.94 - 0.99]	0.018*
Age at onset of disability			
Adulthood	1.00	—	
Childhood/adolescence	10.6	[2.16 - 191]	0.022*
At Birth	4.05	[0.63 - 79.3]	0.2
Notion of absence of care			
No	1.00	—	
Yes	158	[0.00 - 322]	>0.9
Trip out of Senegal			
No	1.00	—	
Yes	3.26	[0.88 - 9.82]	0.049*

Covariables	OR	95% CI	p-value
Drug use			
No	1.00	—	
Yes	5.26	[0.72 - 24.7]	0.053

4. Discussion

This study highlights the high prevalence of violence experienced by persons with disabilities in Senegal and identifies several sociodemographic, economic, and behavioral determinants. The findings show that age, sex, income, age at onset of disability, membership in a disability organization, food insecurity, and drug use significantly influence exposure to different forms of violence.

Age emerged as a protective factor: each additional year reduced the risk of experiencing verbal, physical, and sexual violence. This suggests that younger individuals, particularly young adults, represent a more vulnerable population. Early onset of disability also constituted a major risk factor, especially when it occurred at birth or during childhood/adolescence. These results are consistent with findings from *Fang*, which emphasize that children—especially those with disabilities—face an increased risk of violence, with a twofold higher likelihood worldwide [16, 17].

Gender also played a decisive role. Women with disabilities were more than three times as likely to experience sexual violence compared to men. This finding aligns with international evidence: Amborski et al.'s meta-analysis [9] demonstrated that persons with disabilities are significantly more exposed to sexual violence than their non-disabled peers, while Handicap International reports that women and girls with disabilities—particularly those with mental disabilities—may be up to ten times more vulnerable. These findings echo calls from WHO for specific attention to violence against women with disabilities, as well as against older women. Results from Burkina Faso similarly reveal a higher prevalence of sexual violence among women with disabilities compared to men [18].

The economic dimension revealed complex dynamics [19]. Paradoxically, having no income or irregular income appeared to be protective against verbal and physical violence compared to having a regular income. This result may reflect the lower social visibility of individuals without resources but warrants further investigation. Conversely, food insecurity was a major risk factor: skipping meals tripled the likelihood of both verbal and physical violence. This direct link between food insecurity and exposure to violence illustrates the interdependence of the *Sustainable Development Goals (SDGs)*: achieving SDG 3 (health and well-being for all) is unlikely

without concurrent progress on SDG 1 (poverty eradication) and SDG 2 (zero hunger) [20].

Drug use emerged as the strongest risk factor for physical violence [21], increasing the risk more than six-fold. This result is consistent with existing literature, which highlights the role of psychoactive substances in fostering violent behavior and reinforcing the social stigma faced by users [22, 23].

Finally, the geographical analysis revealed marked regional disparities, with higher prevalence of violence reported in the northern regions of the country. This heterogeneity may be linked to specific sociocultural contexts [24] but requires further exploration through qualitative approaches to better capture the local dynamics of discrimination and violence.

Overall, this study provides essential insights into the understanding of violence against persons with disabilities in Senegal. It underscores the need to integrate violence prevention into public health policies while emphasizing the urgency of multisectoral responses that take into account the social, economic, and behavioral determinants of vulnerability.

Strengths and Limitations

This study, one of the few large-scale analyses conducted in Senegal on violence against persons with disabilities, draws on a large and diverse sample ($n = 1,442$), thereby strengthening the validity and relevance of its findings. Nonetheless, reliance on self-reported data may have introduced recall and social desirability bias, with a risk of underreporting—particularly in cases of sexual violence. Moreover, the findings primarily reflect the situation of individuals not living in remote areas or outside disability organizations. Despite these limitations, the study makes an important contribution to regional and international knowledge on disability and violence.

5. Conclusion

The findings reveal a broad spectrum of violence—verbal, physical, sexual, and social—experienced by people with disabilities, and expose clear risk patterns linked to age, gender, poverty, disability onset, and substance use. Younger individuals, women, those with early-onset disabilities, and those facing severe economic hardship (such as food insecurity) are consistently more vulnerable across all forms of violence. In contrast, the associations between income level

and violence suggest complex social dynamics of visibility, marginalization, and exposure, which warrant deeper qualitative exploration. The results underscore the urgent need for targeted, multisectoral interventions aimed at protecting persons with disabilities from violence, ensuring their social inclusion, and addressing structural inequalities that exacerbate their vulnerability.

Abbreviations

WHO	World Health Organization
CD	Census District
PWD	People with Disabilities
SDG	Sustainable Development Goals

Conflicts of Interest

The authors declare no conflicts of interest.

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