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Systematic review of healthcare interventions for reducing gender-based violence impact on the mental health of women with disabilities

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Abstract

Purpose: Women with disabilities are more exposed to violence. The health sector has a key role in all three levels of prevention of violence against women. The objective of this paper was to review the interventions for preventing gender-based violence and reducing its impact on the mental health of women with any form of disability.

Method: Relevant studies were identified through conducting searches in PubMed, Scopus, CINAHL, PsyInfo, Social Services Abstracts, and PILOTS. Two reviewers analyzed and selected studies. A qualitative synthesis was made.

Results: 3149 references were obtained, among which eight articles describing nine interventions from the USA and the UK. Most were intended for women with mental/intellectual disability and assessed intimate partner or sexual violence. Only one study showed high methodological quality. They were found to be particularly effective as regards improvement of the skills acquired by participants, but the results as regards improved mental health are not consistent.

Conclusion: Our review shows very little evidence of effective interventions. Further studies are required with higher internal validity and female sample groups with diverse disabilities.

Clinical Relevance: Gender-based violence is a highly prevalent problem for women with disabilities, and in addition to being a public health challenge is a violation of human rights. Health care systems and policymakers should take a key role in all three levels of prevention of violence against women with disabilities. Interventions with longer follow-up times are required. It is also important for interventions to be designed in consultation with people with disabilities.

KEYWORDS
disability, intervention, intimate partner violence, review, sexual violence

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INTRODUCTION

According to the World Health Organization (WHO), approximately 15% of the world's population have some form of disability, and this percentage is growing as a result of population aging and increasing rates of chronic illnesses (World Health Organization, 2021). Moreover, the prevalence and incidence of disability is higher among women than among men, particularly among older members of the population (Lee et al., 2021). In this respect, disability and gender are intersectional social constructs that, exacerbated by stereotypes, create structural discriminations, particularly against women and girls. This does not mean the sum total of all discriminations, but rather the appearance of new discrimination situations that determine the life of an individual (Oriti, 2020) and place them in a situation of inequality.

According to the United Nations Population Fund (UNFPA), between 40% and 68% of women with disabilities will experience sexual violence before they are 18 years old (UNFPA, 2018), and previous studies have indicated that women with disabilities are between 4.5 and 9.2 times more likely to experience some form of violence than women without disabilities (García Cuellar et al., 2023; Khalifeh et al., 2016; Van Deinse et al., 2019). The reasons for these higher rates of violence are diverse and include stigma, discrimination, lack of support, poor understanding of disability, and greater vulnerability linked to care needs and dependency (UNFPA, 2018). Compared to men with disabilities, it has also been found that women with disabilities are more exposed to violence, with a generally higher prevalence of violence (Hughes et al., 2011; Khalifeh et al., 2016; Oram et al., 2013). Violence is also frequently exercised not only by the intimate partners of these women but also by any male figure in their immediate affective or daily care environment: fathers, brothers, sons, professional male caregivers, and even other women (Ozemela et al., 2019). But in addition, women with disabilities experience unique forms of disability-related violence (Plummer & Findley, 2012; Ruiz-Perez et al., 2018), such as passive violence, neglect, social isolation, degradation, denial of medical care, sterilization, and forced psychiatric treatment.

Violence is a significant cause of morbidity due to its impact on mental, physical, sexual, and reproductive health (Garcia-Moreno & Watts, 2011). In this regard, the scientific literature reveals that in addition to experiencing violence that is more serious and frequent, women with disabilities are more likely to perceive their health as poor (Barrett et al., 2009), an increased risk of unintended pregnancy (Alhusen et al., 2020), have mental health issues such as anxiety or depression (Dembo et al., 2018; Gil-Llario et al., 2018) or sadness and desperation, and higher rates of suicidal ideation (Mitra et al., 2012) compared with men with disabilities and women without disabilities. Furthermore, violence increases the likelihood of calling on health and social services (Meseguer-Santamaría et al., 2021) and the health sector has a key role in all three levels of prevention of violence against women (Garcia-Moreno et al., 2015; Michau et al., 2015). Primary prevention seeks to prevent the problem before it happens, while secondary prevention aims to recognize the situation early, decrease its prevalence and prevent the progression or recurrence of violence, and tertiary prevention aims to prevent death, improve quality of life and the long-term effects linked to the problem (Garcia-Moreno et al., 2015; Kirk et al., 2017).

To date, the effectiveness of interventions aimed at preventing violence in women in the general population (Allan-Blitz et al., 2023; Bourey et al., 2015; Ellsberg et al., 2015) and in specific groups of women, such as pregnant women (Jahanfar et al., 2014; Sprague et al., 2017; Van Parys et al., 2014) and youth (Crooks et al., 2019; World Health Organization, 2015) has been tested. Studies indicate that these interventions empower women, increase social capital, reduce community and cultural acceptability of intimate partner violence, improve the quality of relationships, promote equitable gender norms, and improve economic well-being. Economic empowerment, in particular, may be an especially powerful intervention in resource limited settings where poverty may be a more prominent driver of intimate partner violence (Eggers Del Campo & Steinert, 2022). In addition, it has been pointed out that an effective prevention policy and programming to prevent violence against women is founded on five core principles: work across the ecological model; use an intersectional gender-power analysis; theory and evidence informed approaches; sustained multisector interventions; and programming that encourage personal and collective thought and enables activism (Michau et al., 2015).

In short, the overlap between gender, violence, and disability creates a unique and specific problem that requires a review of the usefulness of the traditional elements of prevention of violence against women that have proved to be effective in different approaches, such as the combination of social and financial strategies (Bourey et al., 2015), the emerging use of information and communication technology (El Morr & Layal, 2020), and interventions intended for couples (Park & Kim, 2022). To date, few systematic reviews have been published that assess the effectiveness of interventions or programs intended specifically to prevent gender-based violence against people with disabilities (Lund, 2011; Mikton et al., 2014; Stobbe et al., 2021; Sutherland et al., 2023), albeit with differing objectives and study samples. Lund assessed specific interventions or services for people with disabilities experiencing interpersonal violence; in his review, Mikton included all types of violence, ages, and sexes, and all forms of disability. Stobbe focused on the prevention of sexual abuse of individuals with mild intellectual disability. Sutherland included evaluated interventions addressing the primary prevention of any form/s of violence against women, children, and young people as target population, by any perpetrator addressing any type/s of disability or impairment, this review also included interventions targeting disability service providers/support workers and interventions delivered in school settings.

No systematic reviews of the literature have been identified that analyze preventive healthcare strategies and its impact on mental health for any type of gender-based violence exclusively for women and taking any form of disability into account. The objective of this study is therefore to review the interventions for the prevention of

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gender-based violence and reducing its impact on the mental health of women with any form of disability.

DESIGN, MATERIALS, AND METHODS

This paper is part of a broader research project that aims to identify and analyze healthcare interventions to improve healthcare in socially vulnerable population groups. The review and its procedures were planned, conducted, and reported according to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines (Page et al., 2021). The review was registered in Prospero with ID CRD 42022297317.

Information sources and search strategy

A search strategy was developed by checking the subject headings and text terms used for the areas of biomedicine, psychology, and social services (CHC) (Appendix S1). An initial draft was trialed on PubMed and the final version included search terms for violence, disabled, and impairment. This strategy was then adapted and implemented in Scopus, CINAHL, PsyInfo, Social Services Abstracts, and PILOTS database. The search was not restricted by language or publication date and all searches were conducted in November 2021. The program Rayyan Systems Inc® (Ouzzani et al., 2016) was used to facilitate the review.

We included studies that assessed the effectiveness of interventions to prevent, gender-based violence and reducing impact of gender-based violence on the mental health of women with any form of disability. The criteria applied are described below.

Inclusion criteria

- Interventions intended for adult women with any form of disability/disabilities (physical, mental, intellectual, sensory) either self-reported or measured with any diagnostic instrument, aimed at preventing gender-based violence (physical, psychological/emotional, sexual, economic/financial, institutional) and its impact on mental health.
- Studies with experimental or quasi-experimental design and cohort studies with/without a control group.
- Studies that provide results of the assessment of the effectiveness of interventions or programs for the prevention, and reduction of the mental health consequences caused by different types of gender-based violence.

Exclusion criteria

- Studies that do not provide data differentiated by sex.
- Pilot studies, the full results of which have been subsequently published.
- Intervention protocols.

Study selection

All of the titles and abstracts were exported to Rayyan and screened by two reviewers independently (LSC and GPM). Full-text articles of those with unclear or missing information were retrieved and screened according to the inclusion criteria. Full-text articles were screened for eligibility by two reviewers (LSC and GPM) and the reasons for excluding articles were recorded in Rayyan. In the event of disagreement, a third reviewer (IRP) was considered an arbitrator.

We designed and used structured forms to extract pertinent information from each article, including information about study design, type of intervention, scope, setting, type of violence, duration of intervention, target population, response variables, and main results.

Quality appraisal

The methodological quality of the studies was assessed using the Quality Assessment Tool for Quantitative Studies (Effective Public Health Practice Project, 1998), which evaluates both internal and external validity, classifying studies into three categories (strong, moderate, or weak) based on six aspects: selection bias, study design, confounders, blinding, data collection, and withdrawals and dropouts. The tool was independently applied by two reviewers (JHM and MEC) and in the event of discrepancies, a third reviewer (IRP) was considered an arbitrator.

Synthesis of results

First, a quantitative synthesis of the main characteristics of the articles was made, followed by a qualitative synthesis of the main findings.

Assessment of effectiveness

In line with the recommendations of the Cochrane Handbook for systematic reviews of interventions (Higgins & Green, 2011), interventions were organized into two groups depending on the outcome variable. The first included interventions intended to improve understanding of violence and acquire the skills to prevent it, and the second included interventions intended to reduce the effects of violence on mental health.

Description of interventions

In addition, the description of the interventions included was assessed. For this purpose, the Template for Intervention Description and Replication (TIDieR) (Hoffmann et al., 2014) was used for guidance and as a checklist.

This instrument includes 12 items that contribute to improving the exhaustiveness of information on interventions, with the

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ultimate aim of describing interventions in sufficient detail for them to be replicated: abbreviated name, why, what [materials], what [procedures], who provided the intervention, how, where, when and how much, tailoring, modifications, how well [planned], how well [actual].

RESULTS

The search results are summarized in the PRISMA flow chart (Figure 1). The search retrieved 3149 references from six databases; after removing duplicate records, 1838 articles were screened, of which 1775 were excluded through reading the abstract, the most frequent reason for exclusion being that the study populations were not women with some form of disability. A total of 62 articles were selected. They were retrieved and the full-text read, and 54 of them were excluded. Finally, 8 articles were included (Allard et al., 2016; Barber et al., 2000; Khemka, 2000; Khemka et al., 2005; Lumley et al., 1998; Peckham et al., 2007; Robinson-Whelen et al., 2010, 2014), which assessed a total of nine interventions (Khemka, 2000 assessed two different interventions).

Characteristics of studies included

Table 1 summarizes the characteristics of the studies and interventions included in the review, and Table 2 shows the individual characteristics of each intervention.

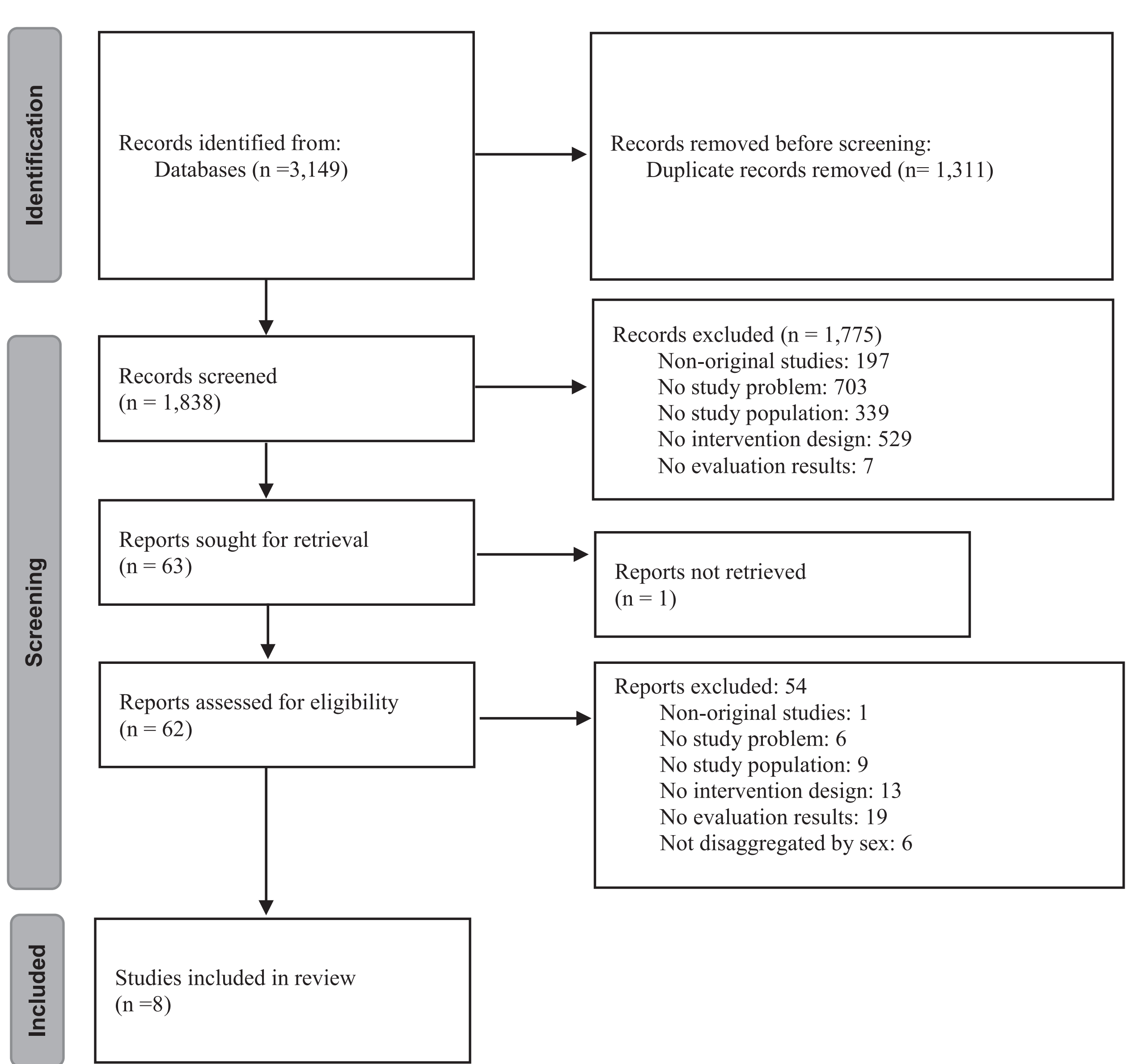

FIGURE 1 PRISMA flow diagram.

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TABLE 1 Summary of study and interventions characteristics.

Characteristics of studies ($n=8$)	N	%
Year of publication		
1998–2004	3	37.5%
2005–2011	3	37.5%
2012–2018	2	25%
Study location		
USA	6	75%
UK	2	25%
Design		
Quasi-experimental (cohort without a control group)	4	50%
Randomized controlled trial	4	50%
Methodological quality		
Strong	1	12.5%
Moderate	2	25%
Weak	5	62.5%
Type of disability		
Mental/intellectual	6	75%
Different disabilities	2	25%
Type of gender-based violence		
IPV	3	37.5%
Sexual violence	3	37.5%
Sexual, physical, verbal, and/or psychological violence	2	25%
Characteristics of interventions ($n=9$)		
Approach[a]		
Prevention of violence	7	77.8%
Prevention of the effects of violence on mental health	3	33.3%
Strategy		
Psychoeducational	1	11.1%
Psychoeducational + cognitive/behavioral	8	88.9%
Outcome/group[a]		
Knowledge or skills relating to violence (group 1)	7	77.8%
Mental health results (group 2)	3	33.3%
Number of participants	73 (6–126)	
Duration (hours)	10.5 (1–20)	
Follow up		
1–3 weeks	3	33.3%
1–2 months	1	11.1%
3–4 months	5	55.6%
Adaptation to women with disabilities		
Yes	5	56.6%
No	4	44.4%

[a]The total does not necessarily add up to 9 since the classification system is based on non-excluding categories.

The first article identified was published in 1998 (Lumley et al., 1998) and the most recent in 2016 (Allard et al., 2016). Six studies were conducted in the United States (Allard et al., 2016; Khemka, 2000; Khemka et al., 2005; Lumley et al., 1998; Robinson-Whelen et al., 2010, 2014). No studies were found for interventions in the Global South.

Four studies had a quasi-experimental design without control group (Allard et al., 2016; Barber et al., 2000; Lumley et al., 1998; Peckham et al., 2007), and four were randomized controlled trials (Khemka, 2000; Khemka et al., 2005; Robinson-Whelen et al., 2010, 2014).

Six studies were conducted with women with mental/intellectual disability (Allard et al., 2016; Barber et al., 2000; Khemka, 2000; Khemka et al., 2005; Lumley et al., 1998; Peckham et al., 2007) and only two included women with diverse disabilities, that is, intellectual or mental health-related disabilities and physical disabilities alike (Robinson-Whelen et al., 2010, 2014). Two studies (Robinson-Whelen et al., 2010, 2014) did not use diagnostic instruments to measure disability and the assessment of disability was self-reported by the women themselves. The remaining studies employed diagnostic instruments to assess disability, such as the Stanford Binet Intelligence test or the Wechsler-III Intelligence Test for Adults. Regarding the severity of the disabilities, and considering the classification reported in the articles themselves, four interventions are aimed at women with mild or moderate mental retardation, three other interventions are aimed at women with disabilities that limit some of their life activities, and only one intervention is aimed at women with significant intellectual disabilities.

Three studies focused on intimate partner violence (Allard et al., 2016; Robinson-Whelen et al., 2010, 2014), three on sexual violence (Barber et al., 2000; Lumley et al., 1998; Peckham et al., 2007), and two on different types of violence (physical, sexual, psychological, etc.) (Khemka, 2000; Khemka et al., 2005).

Characteristics of interventions analyzed

As regards the characteristics of the interventions, six of the nine interventions focused on prevention of violence (Khemka, 2000; Khemka et al., 2005; Lumley et al., 1998; Robinson-Whelen et al., 2010, 2014) and two on preventing the effects of violence on health (Allard et al., 2016; Barber et al., 2000). One study focused on both considerations (Peckham et al., 2007).

The number of participants ranged from 6 (Barber et al., 2000; Lumley et al., 1998) to 126 (Robinson-Whelen et al., 2010). As regards the prevention strategy, eight interventions were based on activities that combine both psychoeducational and cognitive/behavioral strategies (Allard et al., 2016; Barber et al., 2000; Khemka, 2000; Khemka et al., 2005; Lumley et al., 1998; Peckham et al., 2007; Robinson-Whelen et al., 2014), and one on a psychoeducational strategy (Robinson-Whelen et al., 2010).

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TABLE 2 Characteristics of interventions.

Authors/country/ quality	Aim	Strategy	Design/N/ follow-up	Study population
Allard et al. (2016) USA Weak	To investigate to what extent reductions in Trauma-related guilt contribute to improvements in PTSD and functioning Group 2	Psycho-educational and cognitive-behavioral psychology	QE /20/3 months	Women with IPV-related chronic and functionally impairing post-traumatic distress
Barber et al. (2000) UK Weak	To foster a group culture which would facilitate improvement in the women's self-identity, sense of empowerment and personal assertiveness Group 2	Psycho-educational and cognitive-behavioral psychology	QE/6/3 months	Women with learning disability (mild moderate) and either a history of childhood sexual abuse or serious sexual assault and had received individual therapy
Khemka (2000) USA Moderate	To examine the significance of cognitive and motivational factors in interpersonal decision-making training and to compare the effects of two training conditions and a control condition Group 1	*1. Decision-making training condition*: Cognitive-behavioral psychology *2. Self- directed decision-making training condition*: Cognitive-behavioral psychology+ motivational *3. Control group*: no training	RCT/36/3 weeks	Women with mild and moderate mental retardation (IQ 50 to 70), age range 21 to 40 years, from a large nonprofit agency for adults with developmental disabilities and mental retardation
Khemka et al. (2005) USA Weak	To empower women with mental retardation to become more effective decision-makers, with the tools to protect themselves against violence and abuse. Group 1	1.Psycho-educational and cognitive-behavioral psychology 2. Control Group	RCT/36/1–3 weeks	Women with mild or moderate mental retardation (IQ 35 to 75), chronological age (22 to 55 years), and residential placement (living with natural/foster family or on their own)
Lumley et al. (1998) USA Weak	To train women with mental retardation in sexual abuse prevention and to extend the methods used to evaluate sexual abuse prevention programs to include role play and naturalistic assessment Group 1	Psycho-educational and cognitive-behavioral psychology	QE/6/1 month	Women in the mild to moderate range of mental retardation, possession of verbal abilities sufficient to participate in role-playing and respond to verbal scenarios, expression of interest in learning sexual abuse prevention skills
Peckham et al. (2007) UK Weak	To build trust and rapport, provided with education about sexual abuse designed for their level of ability, and helped to reprocess the trauma of their sexual abuse Groups 1 and 2	Psycho-educational and cognitive-behavioral psychology	QE / 7 / 3-4 months	Women with significant intellectual disability, documented history of at least one incident of sexual abuse either in childhood or adulthood where a known disclosure interview has already been completed, and current mental health problems

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Elements to intervention	Tailoring	Duration/delivery/ providers	Effectiveness*
Psychoeducation, in-session practices, and homework assignments. Focus on: (a) self-empowerment, (b) stress and relaxation, (c) PTSD and re-learning, (d) learned helplessness and coping strategies, (e) catching and challenging negative self-talk, (f) Trauma-related guilt appraisal, (g) managing anger, (h) assertiveness training, (i) identifying and challenging "shoulds," (j) identifying potentially abusive men, (k) self-advocacy	No	18 ho/Weekly individual sessions and homework assignments/Research team and trained therapists	Pre-post • **PTSD: 68.95 vs. 17** • Trauma-Related Guilt:1.99 vs 0.93 • Quality of life: 15.75 vs. 5.41
Interactive and structured educative sessions, with supportive and non-confrontational group discussion. Topics included: (a) sexual knowledge and health, (b) providing information regarding the concepts of assertiveness, (c) self-protection and coping skills, (d) modeling and role-play techniques to practice these skills, (e) relaxation skills	No	20 h/Weekly group sessions/Facilitators	Pre-post • Self-esteem: 17.7 vs. 15 • Anxiety: 12.8 vs. 11.8 • Depression: 6 vs. 7.3 • Assertiveness: 15 vs.18.8
1. *Decision-making training condition*: a traditional cognitive-based decision-making training approach involving instruction in the use of a cognitive decision-making strategy 2. *Self-directed decision-making training condition*: an integrated cognitive and motivational-based decision-making approach that involved instruction in the use of a cognitive decision-making strategy, with an emphasis on self-directedness that was related to a greater awareness of personal goals and perceptions of control with regard to the social environment	No	7.5 h/Small groups of 2–3 participants, although some opted to have individual training sessions/Author with the assistance of two graduate students	Posttest intervention 1 versus intervention 2 versus control • **Decision-making** 20.80 versus 30.67 versus 12.70 • **Locus of control** 18.08 versus 9.92 versus 22.05
12 curriculum lessons and 6 support group sessions covering: (a) Knowledge of Abuse and Empowerment; (b) Decision-Making Strategy Training; (c) Structured Support Groups	Yes	10 h/Once or twice a week, in small group (3 women) sessions at each participating site/ Trained teachers and social worker	Posttest intervention versus control • **Knowledge of abuse concepts:** 5.95 versus 3.60 • **Empowerment:** • 19.72 versus 16.20 • Stress management • 4.39 versus 4.44 • **Self-decision-making**: • 3.28 versus 1.70
Behaviors Training focused specifically on the prevention of abuse by caregivers. The participants were taught to (a) verbally refuse the request, (b) leave the situation, and (c) report the incident to a trusted adult such as the case manager or a staff member. Curriculum employed behavioral skills training, which consisted of instructions, modeling, rehearsal, praise, and corrective feedback	No	7.5 h/In pairs sessions/A team of trainers	Pre-post • Verbal report: 1.06 versus N/D • Role-play: 1.2 versus N/D • Naturalistic (in situ) probe: 1.2 versus N/D • Abuse prevention knowledge: 67% versus 84%
The session plans were designed to focus on rapport building and increase sexual knowledge before helping the participants to reprocess the trauma of their sexual abuse. Stage 1: Establishing the ground rules and therapeutic alliance. Stage 2: Educating the participants about anatomy and basic sexual language, consent, and felt safe enough to tell their story. Stage 3: Helping client participants to reprocess their trauma through hearing other participants' traumatic experiences and revisiting their own unpleasant traumatic memories	No	5 months/ Weekly group sessions / Not reported	Pre-post • **Sexual knowledge:** **1. What is sexual abuse?** 3.00 versus 4.86 **2. What are the consequences?** 2.71 versus 4.57 **3. How can you help yourself?** 2.71 versus 4.29 **4. How can you help yourself?** 3.29 versus 4.57 **5. Whose fault was it (their abuse)?** 2.71 versus 5.00 • **Response to trauma**: 43.17 versus 13.33 • Self-esteem: 14 versus 15.5 • Anger disposition: 105 versus 93 • **Depression**: 29.83 versus 4.83 • Challenging Behavior: 13 versus 4.33

(Continues)

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TABLE 2 (Continued)

Authors/country/quality	Aim	Strategy	Design/N/follow-up	Study population
Robinson-Whelen et al. (2010) USA Strong	To evaluate the effects of a computerized disability-specific abuse assessment intervention "Safer and Stronger Program (SSP)" on abuse awareness, safety self-efficacy, and safety promoting behaviors of women with diverse disabilities Group 1	1. Psycho-educational 2. Control group	RCT / 259/ 3 months	Women self-identified as having a disability consistent with the Americans with Disabilities Act (1990); that is, a physical or mental impairment that substantially limits one or more major life activities
Robinson-Whelen et al. (2014) USA Moderate	To increase safety awareness, abuse and safety knowledge, safety skills, safety self-efficacy, social support, and safety promoting behavior Group 1	Psycho-educational and cognitive-behavioral psychology	RCT / 213 / 4 months	Women at least 18 years of age and had a physical, visual, mental health, cognitive, or developmental disability or other health condition for at least 1-year duration

Abbreviations: Groups 1, Knowledge or skills relating to violence; Groups 2, Mental health results; IPV, intimate partner violence; N/D, no numerical data provided;
*Statistically significant results are shown in bold.

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Elements to intervention	Tailoring	Duration/delivery/ providers	Effectiveness*
Computer-based assessment tool that offers an accessible and anonymous method for women with disabilities to self-screen for IPV by disclosing their exposure to abuse, describing the characteristics of their primary perpetrator, and reporting their use of safety promoting behaviors. Integrates audio-video vignettes of four IPV survivors who describe their abuse and survival experiences, offer affirming messages, identify warning signs, and discuss safety promoting strategies.	Yes	1–1.5 hours / Computer-based, individually/ Research team	Posttest intervention versus control Abuse Awareness Scale: • Group sexual abuse: 19.14 versus 14.73 • Group physical abuse: 15.61 versus 16.03 • Group multiple abuse: 17.38 versus 18.12 • Group low abuse: 13.11 versus 10.24 • Group no abuse: 11.92 versus 10.68 Safety Self-efficacy Scale: • Group sexual abuse: 34.73 versus 33.37 • Group physical abuse: 35.04 versus 34.06 • Group multiple abuse: 31.39 versus 30.84 • Group low abuse: 35.74 versus 39.35 • Group no abuse: 38.86 versus 38.36 Safety Promoting Behavior Scale: • Group sexual abuse: 26.00 versus 24.81 • Group physical abuse: 23.93 versus 23.72 • Group multiple abuse: 26.17 versus 24.38 • Group low abuse: 22.31 versus 23.07 • Group no abuse: 22.12 versus 22.82 Early Prevention Subscale • Group sexual abuse: 10.29 versus 9.40 • Group physical abuse: 9.36 versus 8.95 • Group multiple abuse: 11.00 versus 9.56 • Group low abuse: 7.68 versus 6.92 • Group no abuse: 6.93 versus 7.45
Classes containing didactic and interactive components, including weekly action planning with group feedback and problem solving. Affirming messages and relaxation training are included at the closing of each class, and the class sessions are infused with information and activities designed to increase those factors theorized to improve safety behaviors and ultimately prevent and reduce abuse	No	20 hours/ Weekly group classes/ Staff of centers for independent living	Posttest intervention versus control • **Abuse awareness**: 15.54 versus 14.96 • **Abuse and safety knowledge**: 16.04 versus 14.64 • **Safety skills**: 23.60 versus 20.78 • **Safety Planning Self-Efficacy**: 52.73 versus 49.80 • **Safety Self-Efficacy**: 39.80 versus 37.25 • **Social Network**: 18.93 versus 17.31 • **Social Support:** 32.54 versus 30.23 • **Safety Promoting Behavior:** 24.30 versus 22.45

PTSD, post-traumatic stress disorder; QE, Quasi-Experimental; RCT, randomized clinical trial.

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The duration of the interventions ranged from 1 to 20h (average = 10.5h) and were conducted mainly by qualified healthcare professionals (medicine, psychology). Intervention follow-up times varied, ranging from 1week (Khemka et al., 2005) to 4months (Robinson-Whelen et al., 2014). The vast majority of interventions was delivered to groups (small groups) and only two interventions were delivered to single individuals (Allard et al., 2016; Robinson-Whelen et al., 2010).

Five interventions (Barber et al., 2000; Khemka et al., 2005; Robinson-Whelen et al., 2010, 2014) reported having made changes to the scales of measurement used or to the interventions implemented so as to tailor them to women with disabilities. For example, modifying the measurement instruments used (Barber et al., 2000; Khemka et al., 2005), or including staff to either read the questions aloud or transcribed responses (Robinson-Whelen et al., 2014) or consulting women with disabilities and deaf women about features designed to increase accessibility (e.g., captioning, headphones) together with the work of an expert in language accessibility for people with cognitive disabilities to made sure that all text was clear and straightforward (Robinson-Whelen et al., 2010).

Five (62.5%) of the articles analyzed obtained a low score for methodological quality (Allard et al., 2016; Barber et al., 2000; Khemka et al., 2005; Lumley et al., 1998; Peckham et al., 2007), and only one obtained a high score (Robinson-Whelen et al., 2010). The methodological quality of the other two articles (Khemka, 2000; Robinson-Whelen et al., 2014) was moderate The main areas that obtained a low methodological quality score were blinding and control of confounding variables (Table 3).

Regarding the description of the interventions, none of the interventions identified used all of the items on the TIDieR checklist. The average number of items used by all of the interventions was 9 out of a possible 12.

All of the interventions included a name or description of the intervention (item 1), adequately described the theoretical justification for the intervention (item 2), the procedures, activities, and/or processes used (item 4), who delivered the intervention (item 5), the mode of delivery (group or individual, for example) (item 6) and the number of times that it was delivered (item 8) (Figure 2).

Seven (78%) (Khemka, 2000; Khemka et al., 2005; Lumley et al., 1998; Peckham et al., 2007; Robinson-Whelen et al., 2010, 2014) specified the type(s) of location(s) where the intervention was delivered (item 7). Six interventions (67%) (Barber et al., 2000; Khemka, 2000; Lumley et al., 1998; Peckham et al., 2007; Robinson-Whelen et al., 2010, 2014) stated the materials used in the intervention (item 3) and the changes made to it (item 10) (Allard et al., 2016; Barber et al., 2000; Khemka, 2000; Khemka et al., 2005; Lumley et al., 1998).

Only three interventions (33%) (Barber et al., 2000; Lumley et al., 1998; Robinson-Whelen et al., 2010) described any tailoring, whether the intervention was planned to be personalized, titrated or adapted, then described what, why, when, and how (item 9). As regards the items that assess the description of intervention adherence, four (44%) (Barber et al., 2000; Khemka, 2000; Peckham et al., 2007; Robinson-Whelen et al., 2014) reported whether intervention adherence or fidelity was assessed (item 11), and only one intervention (11%) (Barber et al., 2000) the extent to which the intervention was delivered as planned (item 12).

Assessment of the results of interventions

A meta-analysis of the quantitative results could not be made due to the heterogeneity of the interventions, results and their measurement. The results of the interventions were organized into two groups according to the results variables identified: (1) effectiveness in improving knowledge and skills for the prevention of violence; and (2) the effects on violence on mental health.

Group 1: Effectiveness in improving awareness and skills for the prevention of violence

A total of seven interventions (Khemka, 2000; Khemka et al., 2005; Lumley et al., 1998; Peckham et al., 2007; Robinson-Whelen et al., 2010, 2014) assessed changes in knowledge, awareness, and skills for the prevention of violence. Six of these interventions

TABLE 3 Assessment of methodological quality of the studies.

Authors	Global methodological quality	Selection bias	Study design	Confounders	Blinding	Data collection	Withdrawals and dropouts
Allard et al. (2016)	Weak	Moderate	Moderate	Weak	Weak	Strong	Moderate
Barber (2000)	Weak	Moderate	Moderate	Weak	Weak	Moderate	Weak
Khemka (2000)	Moderate	Moderate	Strong	Strong	Weak	Moderate	Strong
Khemka et al. (2005)	Weak	Moderate	Strong	Strong	Weak	Strong	Weak
Lumley et al. (1998)	Weak	Moderate	Moderate	Weak	Weak	Weak	Weak
Peckham et al. (2007)	Weak	Moderate	Moderate	Weak	Moderate	Strong	Weak
Robinson-Whelen et al. (2010)	Strong	Moderate	Strong	Strong	Weak	Strong	Moderate
Robinson-Whelen et al. (2014)	Moderate	Moderate	Strong	Strong	Moderate	Strong	Moderate

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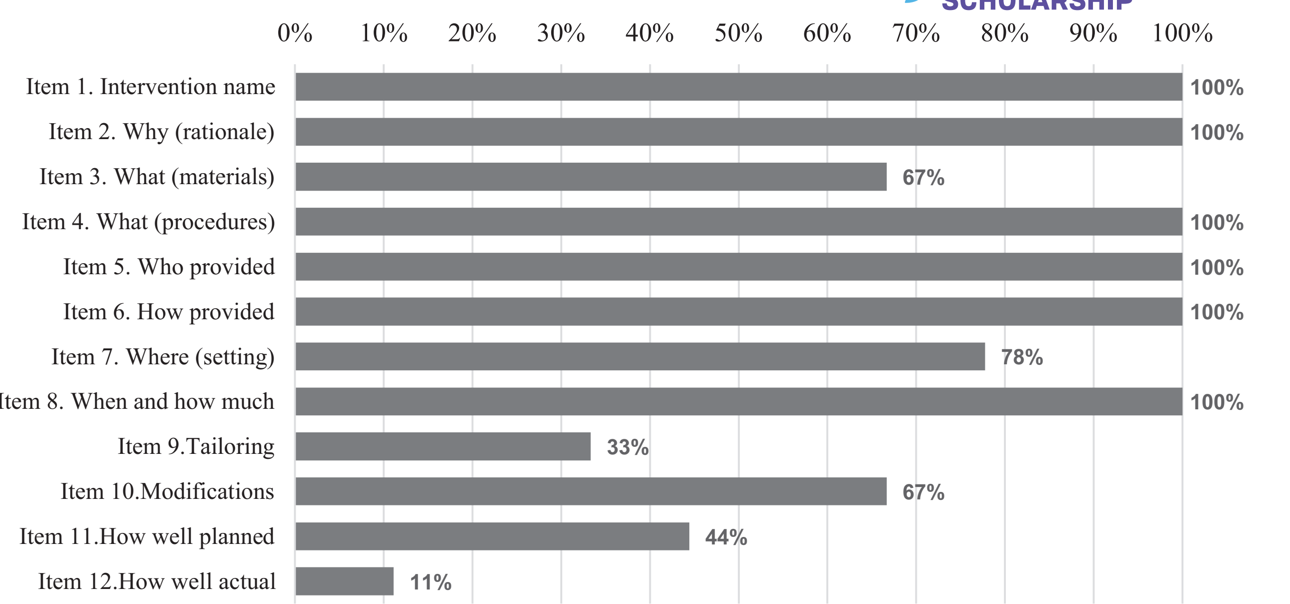

FIGURE 2 Completeness of the TIDieR checklist.

were carried out on women with disabilities who had not suffered gender-based violence (Khemka, 2000; Khemka et al., 2005; Lumley et al., 1998; Robinson-Whelen et al., 2010, 2014) and one on women who had previously suffered gender-based violence (Peckham et al., 2007). The most frequent results variables are those linked to awareness of violence and those linked to self-efficacy in its prevention (locus of control, decision-making, or empowerment) (Table 2). All of the interventions were effective in increasing awareness for identifying and preventing violence. However, the same does not hold true for skills for preventing violence, given that some interventions proved effective (Khemka, 2000; Khemka et al., 2005; Robinson-Whelen et al., 2014) whilst others did not (Robinson-Whelen et al., 2010).

The intervention by Khemka et al. (2005) revealed a significant improvement in three of the four results variables considered. Participants in the intervention group obtained higher average scores on the scales for awareness of abuse, empowerment, and decision-making by the end of the intervention, compared with participants in the control group. No significant improvements were observed in stress management skills.

The study by Khemka (2000) assessing two interventions showed both to be effective in improving decision-making in response to abuse situations and locus of control compared with the control group, although the intervention based on a cognitive-motivational approach was more effective than the intervention based on a solely cognitive approach.

Peckham's intervention showed that participants increased their understanding of sexual violence.

The intervention by Lumley et al. (1998) demonstrated effectiveness in increasing knowledge for preventing sexual violence and in learning the skills for responding to potential situations of violence, but only when assessed through role-play exercises.

For its part, the intervention by Robinson-Whelen et al. (2010) showed a significant improvement in only one of the three results variables considered. Participants in the intervention had significantly improved their awareness of abuse by the end of the intervention, compared with the control group. However, they did not significantly increase their self-efficacy for improving their safety or their behavior for promoting safety.

Lastly, the intervention by Robinson-Whelen et al. showed effectiveness in the seven results variables. Compared with the control group, participants in the intervention showed significant improvement in their understanding and awareness of abuse, in understanding how to improve their own safety, their safety skills, their self-efficacy for improving their safety, behavior for promoting safety, and knowledge of social networks and support groups.

Group 2: Effectiveness in reducing the effects of violence on mental health

Three interventions assessed changes in the effects of violence on mental health (Allard et al., 2016; Barber et al., 2000; Peckham et al., 2007) and all three were conducted with women who had previously suffered gender-based violence, with the most frequent result variables being self-esteem and depression (Table 2).

The intervention by Allard et al. (2016) showed significant improvement in one of the three results variables considered. Participants in the control group obtained significant improvements in the status and reduction of severity of post-traumatic stress disorder. No significant improvements were obtained in the feelings of guilt associated with the traumatic event, or in quality of life.

The intervention by Barber et al. (2000) showed immediate effectiveness in improving self-esteem and levels of assertiveness.

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However, these improvements were not maintained in the follow-up of participants after 3 months. The intervention was not effective in reducing anxiety or stress, and even increased anxiety was observed among participants.

Lastly, the intervention by Peckham et al. (2007) showed that in the five clinical results variables assessed, it helped to lessen but not eradicate levels of trauma and depression, resulting in mental health improvements among participants which were particularly clear at the follow-up 3 months after the end of the intervention. No significant improvements were obtained in self-esteem, challenging behavior, or anger disposition.

DISCUSSION

This systematic review examines the characteristics of interventions intended to prevent gender-based violence and reduce the impact of gender-based violence on the mental health of women with any form of disability. Only eight studies were identified that assessed nine interventions, the last delivered in 2016, and the majority conducted in the United States of America. Intimate partner violence and sexual violence are the two main types of violence targeted by the interventions, which are intended primarily for middle-aged women with mental/intellectual disability and mild or moderate degrees of disability.

In addition, and in line with the results of other authors (Lund, 2011; Mikton et al., 2014; Stobbe et al., 2021) who have assessed the effectiveness of interventions for preventing violence against people with disabilities, we found that most of the interventions published were of low methodological quality, with very small sample sizes, no control group and short follow-up periods. The reason why interventions with more rigorous methodology are not being planned could be explained by the lack of research interest in this area, quality experimental studies with sufficient sample sizes of women with different types of disability are therefore required. As regards content, the TIDieR tool showed that the interventions analyzed lack adequate planning and tailoring to their target populations and settings, and moreover provide little information on adherence. This limited information on the characteristics and content of the interventions makes it difficult to analyze the evidence and implementation in other settings (Campbell et al., 2018).

The prevention of violence against women in the general population has a lengthy history, and there are currently several studies that evaluate its effectiveness for different types of outcomes (Arango et al., 2014; Ellsberg et al., 2015; Kirk et al., 2017; Klein et al., 2021; McNaughton Reyes et al., 2021). Arango's review of reviews on the effectiveness of interventions to prevent or reduce violence against women and girls (Arango et al., 2014), highlights some differences with the interventions analyzed here. For example, a longer duration (24 interventions lasted between 1 and 6 months, and 14 interventions lasted more than six months), a greater complexity of the interventions (community mobilization, livelihood, etc.), and a higher methodological quality. In addition to these methodological aspects, there are differences in the violence suffered by women with disabilities. They have very specific life experiences, they are more vulnerable to violence of any kind and from any person, and the violence they suffer is different, therefore it is important to include other types and modes on violence in future studies. Added to this are the limitations inherent to the disability they present, which are very different among them (Plummer & Findley, 2012; Ruiz-Perez et al., 2018). All this raises the need for interventions aimed at women with disabilities to be more specific in their content and development to the characteristics of the women to whom they are addressed (Stern et al., 2020; Sutherland et al., 2021; UNFPA et al., 2021).

In our study, we can see that the prevention of violence and its impact on the health of women with disabilities has received little attention from the scientific community, reflected not only in the small number of research projects identified, but also because the most recent of them was conducted in 2016; and this in spite of the concurrence of two public health problems, namely disability and violence against women, and the high impact on health that they have. Moreover, 75% of the studies were carried out in the United States, which further limits extrapolating the findings given the lack of diversity in terms of cultural settings or ethnicity, this underlines the need to perform and assess interventions in other settings, particularly those where there is a high prevalence of violence against women and where disability may be more widespread, such as in developing countries (United Nations, 2022).

Most of the interventions identified in our review focus on increasing awareness and skills for preventing violence and are shown to be particularly effective as regards imparting awareness to participants. The scientific literature indicates that receiving clear and timely information and education on sexuality and sexual and reproductive health from a comprehensive dimension is a preventive factor of sexual violence (Engelen et al., 2020; Rashikj-Canevska et al., 2023). This is a key strategy, because diverse studies show that women with disabilities are less likely to receive information on self-awareness and sexual orientation (Ozemela et al., 2019), nor has an evaluation been made of whether the changes seen in awareness or skills relating to gender-based violence against women with disabilities result in reduced prevalence of violence. But along with this strategy are others, equally important and necessary, intended to prevent or palliate the effects of violence on women with disabilities. In our review, we found that there are few interventions of this type, that they focus primarily on mental health, and that the results obtained are not consistent, which may reflect the poor methodological quality of the studies. They tend to be studies with short follow-up times (ranging from 1 week to 3 months), so interventions with longer follow-up times are required, particularly if the aim is to evaluate the effectiveness of health-related outcomes. Nor should we overlook the need to assess interventions intended to improve the detection of violence or access to social and health services because the evidence shows that screening to detect gender-based

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violence in combination with referral to support services can be relevant in the general population (Sprague et al., 2017).

It is also important for interventions to be designed in consultation with people with disabilities. In our review, only three interventions performed some form of "tailoring" or adaptation (Barber et al., 2000; Lumley et al., 1998; Robinson-Whelen et al., 2010), but beyond adaptations, it is important for interventions to be designed in consultation with people with disabilities so that their needs can be understood by means of an intersectional analysis. In addition, active engagement in programs and involving people with disabilities in visible roles, such as those reported by Stern et al., 2020, helped challenge exclusion and stigma relating to disabilities (Stern et al., 2020).

Regarding the limitations of this work, as with any review there may be a risk of publication bias leading to studies with positive outcomes being reported more frequently in the literature than studies with negative outcomes. Moreover, the heterogeneous nature of the methodological design in the interventions identified, and their small sample sizes, prevented us from making more specific recommendations on the components of these interventions that were effective, this limitation is due more to the available literature than to this review.

CONCLUSION

Gender-based violence is a highly prevalent problem for women with disabilities, and in addition to being a public health challenge is a violation of human rights. However, our review reveals that to date there have been very few interventions specifically for such women on preventing violence or helping victims to recover from it. Most of the interventions focused on increasing awareness and skills for preventing violence more than reducing the effect of violence on mental health. The results obtained are not consistent and among those that do exist, there is little evidence of their effectiveness. Therefore, more studies with greater internal validity are required, using samples of women with diverse disabilities and conducted in settings other than high-income countries.

CLINICAL RESOURCES

- The Office on Women's Health: https://www.womenshealth.gov/relationships-and-safety/other-types/violence-against-women-disabilities
- The National Online resources center on violence against women https://vawnet.org/
- Sexual Violence Research Initiative https://www.svri.org/
- American Psychological Association https://www.apa.org/topics/disabilities/women-violence

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CONFLICT OF INTEREST STATEMENT

The authors declare that they have no conflicts of interest. No financial disclosures were reported by the authors of this paper.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

Appendix S1.

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