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ORIGINAL PAPER

The development of a social-sexual education program for adults with neurodevelopmental disabilities: starting the discussion

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Abstract
People with neurodevelopmental disabilities, including intellectual disabilities and autism, want to have relationships but few are given the tools and opportunity to create those relationships in a safe and meaningful way. This strong desire to have relationships, coupled with reduced access to information, puts people with neurodevelopmental disabilities at high risk for being targets of sexual abuse and exploitation, as well as demonstrating social-sexual behavior that is unexpected or offensive to others. Research has long demonstrated that people with intellectual disabilities are sexually assaulted at much higher rates than the general population. In addition, it is common for people with intellectual disabilities and autism to miss out on employment, housing, and social opportunities due to unexpected social-sexual behaviors. To address this need, the research team developed the social-sexual education (SSE) program to teach people with neurodevelopmental disabilities how to create safe and meaningful relationships while also giving them information about sexual abuse and coercion. We recruited licensed professionals to pilot test the SSE program, and then we evaluated the tool using quantitative and qualitative methods. Our findings provide preliminary support for the SSE program. Implications and future directions are discussed.

Keywords Neurodevelopmental disabilities · Intellectual disabilities · Autism · Relationships · Sexuality · Social-sexual education, United States

People with neurodevelopmental disabilities, including intellectual disabilities and autism spectrum disorder (autism) are sexually assaulted and exploited at grossly higher rates than their neurotypical peers (Brown-Lavoie et al. 2014; Sevlever et al. 2013). Although people

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with neurodevelopmental disabilities want to have relationships, few are given the tools and opportunity to create those relationships in a safe and meaningful way. Research has consistently suggested that people with intellectual disabilities are at a greater risk of being targets of sexual abuse than the general public—in both childhood (Jones et al., 2012) and adulthood (Hughes et al., 2012). Shakeshaft (2004) estimated that students with intellectual disabilities experienced sexual abuse three times more frequently than their neurotypical peers. Sullivan and Knutson (2000) found that people with intellectual disabilities had records of sexual abuse four times more than their neurotypical peers. To date, the literature is unclear whether children with autism are sexually abused at disproportionately high rates (Sullivan and Knutson 2000). That clearly changes, however, when people with autism become adults. The research literature is quite clear that adults with autism are sexually abused and exploited at much higher rates than their neurotypical peers (Brown-Lavoie et al. 2014). In fact, people with both autism and intellectual disabilities maintain an extraordinary vulnerability to sexual abuse and exploitation throughout their adulthood. When interviewed, 64% of adult females and 50% of adult males with intellectual disabilities report being targets of sexual exploitation (Zemp 2002). National Public Radio (NPR) completed a yearlong investigation in 2018 and found that adults with intellectual disabilities are sexually assaulted seven times more often than adults without intellectual disabilities; Females with intellectual disabilities are sexually assaulted 12 times more often. They called it the "Sexual Assault Epidemic No One Talks About."

The literature suggests that people with neurodevelopmental disabilities are more likely to experience sexual assault due, in part, to limited access to effective interventions as well as disability-related barriers (i.e., lack of control over decisions, limited communication skills) that could potentially be minimized with targeted instruction (Hughes et al. 2020). Although people with neurodevelopmental disabilities develop sexual desires and interests in relationships much like their neurotypical peers, they are often excluded from mainstream education that address sexual health and social development (Cheak-Zamora et al., 2019). It has long been acknowledged that people with neurodevelopmental disabilities have unique needs that include learning differences, social inexperience, and social naiveté that could lead to vulnerability, and warrant education programs that address these unique needs. Such programs have been developed, yet most have targeted only basic knowledge of sexuality and safety skills (Sala et al. 2019) for young adults (e.g., Sevlever et al., 2014). Nevertheless, these programs are not widely accessible, may have costs that exceed local budgets, and do not appear to be in actual hands of providers who serve people with neurodevelopmental disabilities (Thompson et al. 2014).

Unfortunately, when people are not provided with accurate and accessible information about social-sexual behavioral norms, they are at risk for demonstrating unexpected social-sexual behavior. Many behaviors that are legal sex crimes are commonly reported as behavioral challenges by staff who support people with neurodevelopmental disabilities (McConkey and Ryan 2001). Behaviors including public masturbation, touching people's private body parts without permission, and interacting in a sexually inappropriate manner with children are common behaviors reported by social service staff who work with people who have neurodevelopmental disabilities. Unfortunately, service providers report a lack of adequate support to handle serious sexual behavior problems with confidence (Ward et al. 2001). A lack of professional expertise and a lack of accessible education programs are severe service gaps for social service providers. Due to this lack of support, people

with neurodevelopmental disabilities who exhibit sexual behavior problems are routinely referred to highly restrictive living arrangements and excluded from participation in the community (Sevlever et al., 2014). In fact, sexual behavioral concerns may be the leading reason that people with neurodevelopmental disabilities are less able to maintain employment or live independently, and they are more likely to become involved in the criminal justice system (Allely & Creaby-attwood, 2016; Quinlan 1992; Reitman et al. 1999). These phenomena likely contribute to the high rates of depression and anxiety observed in people with neurodevelopmental disabilities (Hollocks et al. 2019; Maiano et al. 2018). They also leave people vulnerable to isolation, feelings of hopelessness, and an inability to access meaningful relationships.

Targeted Interventions

The current evidence base centered on targeted interventions for preventing violence against people with neurodevelopmental disabilities is limited but growing. Until recently, the limited number of available interventions primarily included small, homogeneous samples, often limited to females with intellectual disabilities (Hickson et al. 2015; Hughes et al. 2010; Lund 2011). Program feasibility, accessibility, cultural sensitivity and quality were rated low across studies (Mikton et al., 2104). Mikton and colleagues (2014), for example, synthesized the literature in order to identify and evaluate the effectiveness of interventions developed to help prevent violence against people with disabilities. The search found only eight relevant studies, none of which were judged to be high quality or effective.

Recent studies have begun to address these limitations by utilizing experimental designs to improve rigor, community-based approaches to ensure inclusion, and internet-based modules to improve program feasibility and accessibility (Hickson et al. 2015; Lund et al. 2015). Studies have also included women and men with neurodevelopmental disabilities more broadly (Hickson et al. 2015). Hickson and colleagues (2015), for example, developed and empirically tested the ESCAPE-DD curriculum, an abuse prevention program targeting self-protective decision making for women and men with intellectual and developmental disabilities. Furthermore, Hughes and colleagues developed and tested the feasibility of *The Safely Class*, an interactive comprehensive curriculum targeting interpersonal violence prevention against people of all genders with intellectual disabilities. The authors utilized a participatory design, working in partnership with the intellectual disability community to improve inclusion and accessibility of the program. They also developed the program to address and align with the needs of the intellectual disability community (i.e., repetition of key topics, use of pictures).

This emerging literature base is promising overall, as it addresses many of the previous limitations within the field and highlights the importance of including the community when designing educational programs for the community. Future work extending on this body of literature is needed to ensure that people of all genders and with a range of neurodevelopmental disabilities have access to high quality, effective education and prevention programs. In addition, an affordable and accessible program that teaches people with neurodevelopmental disabilities about laws of sexual behavior, developing consensual sexual relationships, and one's right to live without sexual exploitation and abuse is needed. Because people with neurodevelopmental disabilities appear to be overrepresented both as targets of

sexual abuse and as culprits of inappropriate social-sexual behavior, any program that aims to address sexuality and relationship development among people with neurodevelopmental disabilities needs to address both of these phenomena. With this in mind, we developed the Social-Sexual Education Project (SSE).

The SSE Project: purpose and objectives

The Social-Sexual Education (SSE) project was designed to teach people with neurodevelopmental disabilities about healthy and safe relationships and how to recognize sexual abuse and coercion. We use the broad term neurodevelopmental disabilities within our study to include people who have been identified with intellectual disabilities, autism spectrum disorder (autism), and people who have related disabilities receiving services through North Bay Regional Center (NBRC) regional center. The purpose of the SSE project was to create an education tool that is developed directly from feedback of people with disabilities, reflects the sexual and gender diversity that is exists in the community, and empowers people to be their own decision makers regarding relationships. The material was developed to be an easily accessible, affordable, and effective tool for professionals to use with their adult clients with neurodevelopmental disabilities. Hence, this study explores the process of what it takes to bring this type of education tool to light. The three primary objectives of the SSE project were to; (1) Make use of research, community collaboration and evidence-based practices to develop a teaching protocol designed to decrease risk factors associated with sexual abuse and increase prosocial sexual behavior, (2) Make use of community collaboration and local partnerships to create a teaching protocol that is accessible and user-friendly for local professionals and beyond, and (3) Establish a research and clinical partnership to begin evaluating the utility of the SSE tool for providers to use with individuals with neurodevelopmental disabilities. The SSE project was carried out across three Phases. The Development Phase (Phase 1), Teaching Phase (Phase 2), and Evaluation Phase (Phase 3).

Overview of the SSE Project: phases 1–3

Phase 1. In Phase 1 (2018), The Development Phase, the research team associated with NBRC developed an education tool called Relationships Decoded, a 25-lesson program designed to teach people with neurodevelopmental disabilities how to create safe and meaningful relationships while also giving them information about sexual abuse and coercion. Relationships Decoded is divided into two programs, an Introductory Program and an Advanced Program. The Introductory Program focuses on foundational concepts, such as differentiating between public and private places, identifying wanted/unwanted touches, and practicing the use of assertive communication. The program also provides foundational information on attraction, dating, expected behaviors on public dates, and sexual abuse. The Advanced Program explores signs of healthy and unhealthy relationships, it gives students an opportunity to explore their own values and boundaries, and discusses dating safety (including online safety). The program also addresses consent, coercion, sexual abuse, contraception, and sexual health.

Every lesson includes two parts: lesson plans for facilitators and visual supports for learners. Lesson plans are only viewed by facilitators, whereas, the visual supports are presented to the participants. The first page of every lesson plan includes goals, teaching tips, learning objectives, and any necessary materials. Lesson plans guide facilitators by providing icons on the left margin that correlate with the visual supports (i.e., photos and videos). The right hand column provides verbal prompts for facilitators. Bolded sentences are recommended to be spoken verbatim by the facilitator. All other language includes suggested prompts and discussion starters through the use of gender inclusive language.

During Phase 1, a panel of 46 consumers, all adults with neurodevelopmental disabilities, reviewed the SSE tool and made recommendations about the inclusion or exclusion of photos and videos. They also participated in focus groups, providing information on whether they felt the tool was helpful. The research team then modified the curriculum based on this feedback.

Phase 2. In Phase 2 (2019), The Teaching Phase, professionals including credentialed special education teachers, school psychologists, board certified behaviorists, and licensed mental health providers, served as facilitators to pilot test the SSE Introductory or Advanced Programs with the clients they serve. These facilitators were recruited by word of mouth and expressed interest in the education content. We recruited 10 facilitators from diverse agencies within four counties in **California (CA)**. Facilitators were paid a stipend to participate in pilot testing for a one-year period and meet monthly as a group to share their experiences throughout the year with the research team. As part of the SSE program, the facilitators also completed seven eLearning training modules outlined on the Autism Focused Intervention Resource and Modules website (AFIRM; https://afirm.fpg.unc.edu/afirm-modules). The modules included, technology-based instruction, video modeling, cognitive-behavioral interventions, social narratives, social-skills training, antecedent-based interventions, and scripting. These evidence-based practices were adopted based on the National Professional Development Center on Autism Spectrum Disorder 2014 Report (Wong et al. 2014).

During Phase 2, the facilitators reviewed and provided feedback on each lesson plan they administered, and again, the research team made revisions and modifications based on their feedback. Some facilitators also administered pre- and post-tests to measure how well their clients with neurodevelopmental disabilities were learning the SSE content.

Phase 3. Phase 3 (2020), The Evaluation Phase, was a collaborative effort between NBRC and the University of California, Davis (UC Davis). In Phase 3 we reviewed and examined the consumer focus group feedback collected in Phase 1, and pre- and post-tests and lesson plan evaluations collected in Phase 2. We also gathered feedback from the program facilitators via interviews to better understand successes and barriers to using the SSE tool with their clients. Institutional Review Board (IRB) approval was granted at UC Davis prior to the start of Phase 3, and verbal consent was obtained from each participant prior to participating in phone interviews. The participants were aware that the interviews were audio recorded. Finally, in addition to evaluating the quantitative and qualitative data sources, during this phase the research team developed and launched a website to make the SSE material (including the web application) free and accessible to interested professionals over a two year period (www.relationshipsdecoded.com).

Methods

Measures and procedures

Consumer Panel Feedback. Consumer feedback from panel sessions with adults with neurodevelopmental disabilities was collected during Phase 1. Feedback was collected using the researcher-developed, *Consumer Panel Feedback Form*, which included a series of eight yes/no questions related to the usefulness of the SSE content. Panelists were asked yes/no questions orally and answered with verbal or nonverbal responses (e.g., hand raising, head nodding, etc.). Ratings on the form were examined to better understand the consumers' perceptions of the tool's usefulness and accessibility.

Client Descriptive Information. Research suggests that the intersection between gender, race, and disability have significant implications for how people are targeted for sexual violence and exploitation (Brown 2017). With this in mind, facilitators completed a questionnaire outlining descriptive information about their clients' age, gender, race, and disability. They also gathered the following information from their clients: (1) Their experience with employment; (2) Their experience with relationships; (3) Whether they experienced an emotional reaction to the program's content. No identifying information about the clients was collected.

Lesson Plan Evaluations. The facilitators completed lesson plan evaluations after each lesson they administered during Phase 2. They reported information on the size of their group and the lesson number they completed. In addition, the facilitators rated each of their lessons using a 5-point scale (Excellent, Very Good, OK, Needs Improvement, and Not So Good). The facilitators also indicated whether they felt the SSE materials were effective in addressing the overall goal(s) of the lesson.

Pre-Tests/Post-Tests. Researcher-developed pre- and post-tests were administered during Phase 2 to gauge clients' understanding of the SSE content. The assessments were designed for individuals with neurodevelopmental disabilities and included simplified sentence structure, straightforward terminology, and bias-free language (Nicolaidis et al. 2020). Questions centered on relationships, safety, laws, and signs of abuse. The Introductory (10 questions) and Advanced (20 questions) pre- and post-tests addressed the core learning objectives of the program. Scores from the pre/post tests were analyzed to evaluate change in client performance. Minor word changes were made to the Introductory and Advanced tests after administering them to a small number of clients. Interrater agreement between the two forms was high (Introductory [ICC = 0.786; CI: 0.652–0.886]; Advanced [ICC = 0.742; CI: 0.550–0.878]).

Interviews. Individual structured interviews were collected during Phase 3 to learn more about the facilitators' experiences with the SSE tool. The 15-question interviews were conducted over the phone and audio recorded. The data was then transcribed by two research assistants affiliated with UC Davis in order to identify and extract themes from the facilitators' responses. The interview questions are listed in the Appendix.

Results

Consumer Panel Feedback. The panels of consumers consisted of 46 individuals with neurodevelopmental disabilities. The consumers were read a series of questions and asked to indicate "yes" or "no" verbally or by raising their hands to indicate "yes." See Table 1. The majority of consumers (82%) expressed an interest in dating, yet most of them (40%) had never learned about relationships or dating. 80% of consumers indicated a preference for taking a class with a small group; 70% expressed a preference for a coed class.

Client Descriptive Information. Six of the 10 facilitators completed a questionnaire outlining descriptive information on their 54 clients. See Table 2. The clients exhibited a range of disabilities, including intellectual disabilities and autism spectrum disorder. Co-

Table 1 Consumer Panel Feedback

Total ($n=46$)	% Yes
1. How many people here are interested in having a boyfriend/girlfriend?	82%
2. Have you ever been in a class about relationships?	40%
3. After looking at these pictures, do you think that these would be useful to have a conversation about relationships?	98%
4. After watching each video, did you find the video interesting?	100%
5. After looking at the pictures and watching the videos, would you be interested in taking a class that shows pictures and videos like these?	83%
6. Did this make you interested in having a class or conversation about relationships?	90%
7. Would you rather be in a class about relationships that has a lot of other people in it or a small group of people?	80%

Table 2 Client Descriptive Information

	Total ($n=54$)
Demographics	
Age, M (SD)	24.85 (12.51)
Gender (% male)	52%
Race	
White	48%
Latina/Latino	32%
Multiracial	04%
Asian	04%
Black	02%
Other	4%
NR	6%
Experiences (%)	
Employment	52%
Relationship	41.20%
Emotional Reaction	29.40%

Note. Not Reported (NR)

occurring mood and specific learning disabilities were high. The majority (82%) of the clients ranged in age between 18 and 29 years. Three clients were under the age of 18, three between 30 and 40 years old, and three over the age of 50. They were fairly diverse in terms of race and ethnicity.

Lesson Plan Evaluations. The facilitators completed a total of 131 entries following their lessons. See Table 3. Groups ranged in size between 1 and 14 participants ($M=7.35$; $SD=3.52$) and were delivered in schools (33%) and clinical settings (65%; day programs, community agencies, regional centers, private practices). The facilitators completed 5 of the 12 total lessons ($SD=3.18$). The facilitators rated their lessons as "excellent" or "very good" and felt the lessons were effective overall. We did not observe significant differences in group size, curriculum use, or the number of lessons completed between schools and clinical settings.

Pre-Tests/Post-Tests. One-way ANOVAs were then used to examine differences between pre- and post-test scores from 54 clients who participated in the SSE program. Scores were dropped for participants who did not complete both pre- and post-tests. When examining scores from the Introductory and Advanced Programs together, there was a significant difference between pre- and post-test scores, $F\ (1)=17.62$; $p<0.001$), with clients who participated in the intervention performing significantly better on the post-test. Scores from pre to post-tests improved from 8.44 ($SD=4.84$; 53.2%) to 12.82 ($SD=3.65$; 75.36%) on average—a 4.38 or 22.16% score difference overall. This significance in score difference remained when examining differences between pre- and post-test scores from the Introductory and Advanced Programs separately. Clients who participated in the Introductory Program performed significantly better on their post-test, $F\ (1)=13.75$; $p<0.001$), with scores improving from 4.77 ($SD=2.98$) to 9.00 ($SD=0.97$). Clients' scores also significantly improved from 11.62 ($SD=3.77$) to 14.10 ($SD=3.33$) on the Advanced Program.

Structured Interviews. We interviewed the 10 facilitators to gather information about how they learned and delivered the SSE program. All interviews were completed over the

Table 3 Group Size, Setting, and Lesson Information

	Total ($n=131$)
Group Size	
Average	7.35 (3.52)
01–4	18%
05–9	49%
10–14	33%
Setting	
School	33%
Clinical	65%
NR	02%
Lessons Completed	
Average	5 (3.18)
1–4	51%
5–8	29%
9–12	20%

Note. Average group size and standard deviation are reported as well as the percentage of groups with varying sizes. Of the sessions that included four (4) or fewer clients, 9% were delivered in a 1:1 format. Average number of lessons completed and standard deviation are reported as well as the percentages for varying lessons completed

phone and ranged between 20 and 50 min. The interviews were audio-recorded and transcribed, and five themes were identified. We outline each theme below.

1. Addressing an important area of need

The facilitators highlighted many notable strengths of the SSE program, but perhaps the most important was that the program addresses a critical area of need—to teach adults with neurodevelopmental disabilities about safe and healthy relationships. Many of the facilitators recognized that their clients with neurodevelopmental disabilities were highly vulnerable and more subject to abuse and victimization than other populations. They were surprised by the lack of social-sexual education offered to them during adolescence and adulthood, noting that their clients had very little to no education. They recognized that individuals with neurodevelopmental disabilities were often denied opportunities to access social-sexual education, leaving them unequipped to navigate relationships and make safe decisions.

2. Time, Space, and Tools

The SSE program provided the facilitators with the time, space, and tools they needed to teach their clients about social-sexual education. They found that the instructional materials supported awareness for navigating romantic relationships while building understanding of coercion and sexual abuse. The facilitators noted that their clients were able to both take-up and generalize the SSE content. For example, one facilitator talked about how a client recognized someone as underage within the community; another spoke of clients' use of "assertive" language. Several of the facilitators noted that conversations about sexual abuse arose from the lessons. They said that when their clients were given an opportunity to discuss abuse, they began to differentiate appropriate from inappropriate behaviors.

3. Accessibility, flexibility, and evidence-based

The third theme was related to the strengths of the SSE program. All facilitators felt that the SSE program was packaged in a manner that was user-friendly, well organized, and easy to navigate. They felt leaning about evidence-based practices, such as cognitive behavioral interventions and video modeling, was an important aspect of the program, and that the embedded photos and videos were "core" to the program as well as an effective means for introducing and discussing sensitive information. The facilitators also liked having access to guided questions but appreciated the flexibility of the tool overall. They commented on how they individualized the content to align with their clients' strengths and needs as well as their own instructional approach (i.e., "student-lead," "collaborative," "structured").

4. Understanding barriers and benefits related to age and setting

Another important theme that emerged was understanding the barriers and/or benefits associated with age and setting. Although one facilitator stated that embedding social-sexual content into a high school curriculum felt preventive, many spoke of challenges related to educating younger clients about dating and relationships. Immaturity, naivety, limited experience with or desire to date, and living with "protective parents" were common barriers the

facilitators felt made instruction more difficult and interfered with their clients' motivation to learn and connect with the material. In contrast, the facilitators who worked with older clients indicated that their clients' experiences with sexual trauma often led to emotional reactions to the content, which in turn made instruction more difficult. Furthermore, the facilitators within clinical settings reported barriers related to attendance, consistency, and transportation. One facilitator stated, "relying on parents and supportive living agencies to provide transportation to the group had been a struggle." These barriers may be less of a concern within educational settings, where attendance is mandatory, daily schedules are structured, and transportation is provided.

5. Considering sexual and gender diversity

An interesting theme that emerged was centered on sexual orientation and gender diversity. Several facilitators raised concerns about photos of same sex couples, indicating that the photos became an "obstacle" to instruction or generated an intense reaction from their clients. One facilitator stated that, "categorization for individuals whose gender wasn't clear made teaching a challenge at times." Similarly, some facilitators reported that their clients exhibited strong reactions to "the cultural components of the curriculum materials." One facilitator, for example, perceived that he observed "latent racism or homophobia" within his lessons. More specifically, he noted that his clients assumed two men in a photo must be father and son or that two Black individuals in a photo must be related. On a related note, a few facilitators discussed their issues related to teaching the SSE content. One facilitator said, "If you have any hang-ups or black and white thinking around sexual orientation, don't use this curriculum." Another stated, "The fit of the program depends on an individual's internal or value system," and further, it is important that leaders have a "neutral stance" when delivering the content. In other words, facilitators expressed discomfort in managing conversations surrounding human diversity. Their perceptions (real or imagined) involving reactions that might invite conversations about homophobia, transphobia, or even racism were viewed as obstacles to teaching.

Discussion

People with neurodevelopmental disabilities and their providers should have access to effective social-sexual education, yet this is often not the case as both accessible tools and opportunities are often limited. The SSE project begins to address these significant gaps in the field. We developed the SSE tool in collaboration with people with neurodevelopmental disabilities, educators, and clinicians and then pilot tested its utility among local professionals and their adult clients with neurodevelopmental disabilities. We gathered information on the training process (what it takes professionals to learn the curriculum) and the delivery process (what it takes professionals to implement the curriculum). We also collected initial evidence on the effectiveness of the tool for people with neurodevelopmental disabilities. Our study provides preliminary evidence that the SSE tool is a promising program for professionals to use with their adult clients with neurodevelopmental disabilities. It is accessible to and available at no cost for providers.

Contributions and implications

The professionals within our study reported that the materials were well organized and easy to navigate yet flexible enough to individualize with their clients. They noted that the embedded videos and photos supported their clients' engagement, understanding, and generalizability of the material and felt their lessons were effective overall. In addition, their clients showed improvement from the beginning to the end of the program on the pre- and post-tests. Although additional research is needed, these findings indicate that the SSE tool may provide an effective means for professionals to teach adults with neurodevelopmental disabilities how to create safe and meaningful relationships while also giving them information to keep themselves safe.

Accessibility. Most of the facilitators in this study noted that resources addressing social-sexual education are not available. They reported that most of their clients had not had any type of education regarding sexual health and/or relationship development. However, when we look to the research, we see that such programs have actually been developed, with many of these programs demonstrating some success (Sala et al. 2019). Nevertheless, this seems to be out of the awareness of professionals and/or inaccessible to them. Some of the biggest barriers to sexual health programming for people with neurodevelopmental disabilities have been; (1) a lack of funding afforded to such programming, and (2) a lack of guidelines to direct such programming (Thompson el al., 2014). The SSE project addresses these barriers by making the program available, at no cost, to anyone who has an internet connection and a device to view the visual supports. Secondly, it conforms to guidelines set forth in **BLINED** Assembly Bill 329, so educators can feel confident that they are following state guidelines.

Additional Training. Much of the research involved in sexual health for people with neurodevelopmental disabilities focuses its attention onto the needs and outcomes of people with disabilities. Our experience with the SSE project, however, indicate that perhaps the biggest barriers lie not with the students or the lack of resources, but with the professionals who are tasked with delivering the education. Many of our facilitators reported feeling uncomfortable when confronted with what they described as "homophobia" and/or students getting "stuck" on pictures when the gender of a person was not clear. They espoused the belief that instructors had to be extremely "open minded" to deliver the SSE program. Could it be that these observations speak more to the discomfort of the facilitators rather than characteristic of their clients?

Dinwoodie (2020) interviewed people with intellectual disabilities who identified as LGBT and found that these individuals reported experiences of bullying and abuse, a lack of support regarding their sexual or gender identities, and a variety of difficult coming out issues. Research has shown that people with autism, especially people who are assigned female at birth, have greater diversity in their sexual and gender expression (Dewinter et al. 2017) than their neurotypical peers. Despite a paucity of robust research investigating people with disabilities who are also gender or sexual minorities, Lund (2021) has found that people with disabilities who are also gender and sexual minorities may be at particular risk of sexual violence. There appears to be a very complex relationship between gender, sexuality, race, and disability that makes gender minorities, sexual minorities, and ethnic minorities targets of sexual exploitation and violence at higher rates when that person also has a disability (Brown 2017). Given these facts, any program that is meant to teach people with neurodevelopmental disabilities about sexual health and safe relationship development

needs to acknowledge and respect gender and sexual diversity. Perhaps facilitators need support in how to manage diversity, how to create an inclusive and unbiased environment, and how to respond to questions/comments that may make the facilitator feel uncomfortable. One area of future research might focus on the characteristics and perspectives of the facilitator, rather than the students themselves. It may be that the characteristics of a facilitator have a strong relationship with student outcomes.

Limitations

Although the SSE project has many notable strengths, there are notable limitations. First, the information that was collected through consumer feedback panels with adults with neurodevelopmental disabilities was limited. The interviews were conducted in group settings, so participants' responses were not confidential, and the group setting may have effected how people answered questions. In addition, the facilitators were all licensed or certified healthcare professionals and/or special educators (i.e., licensed marriage and family therapists, certified behavioral interventionists) practicing in the state of CA. They were interested in learning about social-sexual education and sought out the opportunity to participate in the project. This limits the overall generalizability of the study findings and raises questions regarding the utility of the SSE tool for the general public. Future research is needed to examine the qualifications and level of training necessary for successful implementation of the SSE program. Furthermore, the measures used were developed as part of the study. While the findings drawn from this study provide preliminary evidence, studies utilizing valid and reliable assessments are needed to further understand the efficacy of the SSE tool for people with disabilities.

Appendix

Interview Questions.

1. How easy was it to learn and implement the SSE curriculum?
2. Do you feel that you could have benefited from training on how to implement the SSE curriculum with your clients? If so, what lessons do you wish you received training on?
3. How do you feel your lessons went overall?
4. What Evidence-Based Practices did you use? Which ones did you find the most helpful?
5. How would you describe your teaching style?
6. Can you think of one particular success story that you would like to share?
7. Do you feel that your clients were able to understand and apply the content they learned during the intervention? Did you notice any evidence or signs that they generalized the material?
8. Did you notice any patterns of behaviors or individual characteristics that made teaching the curriculum more challenging? (e.g., avoidance behaviors, trauma, and externalizing or internalizing behaviors, verbal ability, level of understanding, sex/gender, etc.)
9. What approaches did you use to handle or address challenging behaviors and issues?
10. Was there any content that you felt was difficult to teach? That was uncomfortable to discuss?

11. Did any sensitive topics arise from the lessons? In other words, did anyone self-disclose? If so, how did you follow-up?
12. What do you feel are the overall strengths of the SSE program?
13. Were there any barriers that made the SSE curriculum difficult to complete?
14. Would you use the SSE curriculum again? Why or why not?
15. What advice would you give to a new clinician about implementing the SSE curriculum?

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Code Availability The coding process is available upon request to the corresponding author.

Declarations

Conflict of interest There are no conflicts of interest.

Ethics approval Institutional Review Board (IRB) approval was granted at the University of California, Davis prior to the start of Phase 3.

Consent to participate Verbal consent was obtained from each participant prior to participating in phone interviews.

References

Allely, C., Creaby-Attwood, A.: Sexual offending and autism spectrum disorders. J. Intellect. Disabil. Offending Behav. **7**(1), 35–51 (2016)

Brown, L.X.: Ableist shame and disruptive bodies: Survivorship at the intersection of queer, trans, and disabled existence. In: Religion, disability, and interpersonal violence, pp. 163–178. Springer, Cham (2017)

Brown-Lavoie, S.M., Viecili, M.A., Weiss, J.A.: Sexual knowledge and victimization in adults with autism spectrum disorders. *Journal of Autism and Developmental Disorders, 44, 2185–2196.* (2014)

Cheak-Zamora, N.C., Teti, M., Maurer-Batjer, A., O'Conner, K.V., Randolph, J.K.: Sexual and relationship interest, knowledge, and experiences among adolescents and young adults with autism spectrum disorder. *Archives of Sexual Behavior, 48, 2605–2615.* (2019)

Dewinter, J., De Graaf, H., Begeer, S.: Sexual orientation, gender identity, and romantic relationships in adolescents and adults with autism spectrum disorder. J. Autism Dev. Disord. **47**, 2927–2934 (2017)

Dinwoodie, R., Greenhill, B., Cookson, A.: 'Them two things are what collide together': Understanding the sexual identity experiences of lesbian, gay, bisexual and trans people labelled with intellectual disability. J. Appl. Res. Intellect. Disabil. **33**(1), 3–16 (2020)
Hickson, L., Khemka, I., Golden, H., Chatzistyli, A.: Randomized controlled trial to evaluate an abuse prevention curriculum for women and men with intellectual and developmental disabilities. Am. J. Intellect. Dev. Disabil. **120**(6), 490–503 (2015)
Hollocks, M.J., Lerh, J.W., Magiati, I., Meiser-Stedman, R., Brugha, T.S.: Anxiety and depression in adults with autism spectrum disorder: A systematic review and metaanalysis. *Psychological Medicine, 49(4), 559–572.* (2019)
Hughes, K., Bellis, M.A., Jones, L., Wood, S., Bates, G., Eckley, L., Officer, A.: Prevalence and risk of violence against adults with disabilities: a systematic review and meta-analysis of observational studies. The Lancet. **379**(9826), 1621–1629 (2012)
Hughes, R.B., Robinson-Whelen, S., Goe, R., Schwartz, M., Cesal, L., Garner, K.B., McDonald, K.E.: "I really want people to use our work to be safe"… Using participatory research to develop a safety intervention for adults with intellectual disability. J. Intellect. Disabil. **24**(3), 309–325 (2020)
Hughes, R.B., Robinson-Whelen, S., Pepper, A.C., Gabrielli, J., Lund, E.M., Legerski, J., Schwartz, M. (S.): Development of a safety awareness group intervention for women with diverse disabilities: A pilot study. Rehabil. Psychol. **55**(3), 263–271 (2010). https://doi.org/10.1037/a0019916
Jones, L., Bellis, M.A., Wood, S., Hughes, K., McCoy, E., Eckley, L., Officer, A.: Prevalence and risk of violence against children with disabilities: a systematic review and meta-analysis of observational studies. The Lancet. **380**(9845), 899–907 (2012)
Lund, E.M.: Interpersonal Violence Against Sexual and Gender Minority Individuals with Disabilities. In: Violence Against LGBTQ + Persons, pp. 195–201. Springer, Cham (2021)
Lund, E.M.: Community-based services and interventions for adults with disabilities who have experienced interpersonal violence: A review of the literature. Trauma. Violence & Abuse. **12**(4), 171–182 (2011)
Lund, E.M., Oschwald, M., Latorre, A., Hughes, R.B., Liston, B., Shelton, R., Powers, L.E.: Development of the internet-based safer and stronger program for men with disabilities. Rehabilitation Couns. Bull. **58**(3), 131–145 (2015)
Maiano, C., Coutu, S., Tracey, D., Bouchard, S., Lepage, G., Morin, A., Moullec, G.: Prevalence of anxiety and depressive disorders among youth with intellectual disabilities: A systematic review and metaanalysis. *Journal of Affective Disorders, 236, 230–242.* (2018)
McConkey, R., Ryan, D.: Experiences of staff in dealing with client sexuality in services for teenagers and adults with intellectual disability. J. Intellect. Disabil. Res. **45**(1), 83–87 (2001)
Mikton, C., Maguire, H., Shakespeare, T.: A systematic review of the effectiveness of interventions to prevent and respond to violence against persons with disabilities. J. interpers. Violence. **29**(17), 3207–3226 (2014)
Nicolaidis, C., Raymaker, D.M., McDonald, K.E., Lund, E.M., Leotti, S., Kapp, S.K., Zhen, K.Y.: Creating accessible survey instruments for use with autistic adults and people with intellectual disability: Lessons learned and recommendations. Autism in Adulthood. **2**(1), 61–76 (2020)
Quinlan, B.: Ethical dilemmas for institutional service providers. J. Dev. Disabil. **1**(1), 24–28 (1992)
Reitman, D., Drabman, R.S., Speaks, L.V., Burkley, S., Rhode, P.C.: Problem social behavior in the workplace: An analysis of social behavior problems in a supported employment setting. Res. Dev. Disabil. **20**(3), 215–228 (1999)
Sala, G., Hooley, M., Attwood, T., Mesibov, G.B., Stokes, M.A.: Autism and intellectual disability: A systematic review of sexuality and relationship education. Sex. Disabil. **37**, 353–382 (2019)
Sevlever, M., Roth, M.E., Gillis, J.M.: Sexual abuse and offending in autism spectrum disorders. Sex. Disabil. **31**(2), 189–200 (2013)
Shakeshaft, C.: The special education muckraker. Dee Alpert Publisher, Huntington, NY (2004)
Sullivan, P.M., Knutson, J.F.: Maltreatment and disabilities: A population- based epidemiological study. Child Abuse Negl. **10**, 1257–1273 (2000)
Thompson, V.R., Stancliffe, R.J., Broom, A., Wilson, N.J.: Barriers to sexual health provision for people with intellectual disability: A disability service provider and clinician perspective. *Journal of Intellectual and Developmental Disability, 39(2), 137–146.* (2014)
Ward, K.M., Trigler, J.S., Pfeiffer, K.T.: Community services, issues, and service gaps for individuals with developmental disabilities who exhibit inappropriate sexual behaviors. Ment. Retard. **39**(1), 11–19 (2001)
Wong, C., Odom, S.L., Hume, K.A., Cox, A.W., Fettig, A., Kucharczyk, S., Schultz, T.R.: Evidence-based practices for children, youth, and young adults with autism spectrum disorder: A comprehensive review. J. Autism Dev. Disord. **45**(7), 1951–1966 (2014)
Zemp, A.: Review Articles-Sexualised violence against people with developmental disabilities in institutions. Praxis der Kinderpsychologie und Kinderpsychiatrie. **51**(8), 610–662 (2002)