e-Kafkas Journal of Educational Research
e-KJER
Research Article

The Awareness of Special Education Teachers about Comprehensive Sexuality Education

Çimen Oğur[1] Seray Olçay[2]

To cite this article:
Oğur, Ç. & Olçay, S. (2024). The awareness of special education teachers about comprehensive sexuality education. *e-Kafkas Journal of Educational Research*, *11*, 767-788. doi: 10.30900/kafkasegt.1543452

Research article **Received:**04.07.2024 **Accepted:**10.12.2024

Abstract
Comprehensive sexuality education aims to equip individuals with relevant knowledge, skills, attitudes and values, assist them in the establishment of adequate social and sexual relationships, and maximize their awareness about decision-making and their rights. It was reported in the literature that individuals with autism spectrum disorder (ASD) are one of the disability groups that require sexuality education. It was emphasized that teachers play a key role in sexuality education. The present descriptive study aimed to determine the knowledge and experience levels, and professional development requirements of the teachers who instruct individuals with ASD in comprehensive sexuality education. The study was conducted with 200 volunteering teachers, and the study data were collected with a survey form. The study findings indicated that only 10% of the teachers instructed sexuality education to individuals with ASD, and the teachers did not have adequate knowledge on comprehensive sexuality education content. They focused on the biological dimension of comprehensive sexuality education, and they did not instruct the content associated with relationship, rights, culture, and skills that ensure the health and well-being of the individuals. The findings are discussed based on the previous studies, and practical recommendations and suggestions for further research are presented.

Keywords: Comprehensive sexuality education, autism spectrum disorders, teachers, sexuality, descriptive research

[1] Corresponding Author, cimenogur@hacettepe.edu.tr, Hacettepe University

[2] Author, Hacettepe University

Introduction

Comprehensive sexuality education could allow the individuals to acquire accurate, scientific and age-appropriate knowledge on sexuality and it is an educational field that includes the understanding of the human body, emotional attachment, and love, sex, gender, sexual identity, sexual orientation, sexual intimacy and reproduction, and should be systematically available from early childhood [United Nations Educational, Scientific and Cultural Organization (UNESCO), 2018; Pan American Health Organization (PAHO)/ World Health Organization (WHO), 2000; 2006]. To provide comprehensive and healthy sexuality education, various organizations have developed guides that included knowledge on the content of sexuality education for corresponding age groups. The first guide, International Technical Guidance on sexuality education was published in 2009 by UNESCO in collaboration with the Joint United Nations Program on HIV and AIDS (UNAIDS), the United Nations Population Fund (UNFPA), UNICEF and WHO. The guide included five key concepts, values, attitudes and skills, culture, society and human rights, human development, sexual behavior, and sexual and reproductive health. The scope and complexity of the key content were determined for four age ranges (5-8, 9-12, 12-15, and 15-18+). This guide has been employed as an evidence-based educational resource based on universal practices that allows the adaptation of local context in these practices. Later, a new guide was published based on the curricula adopted by 12 countries (Botswana, Ethiopia, Indonesia, Jamaica, Kenya, Namibia, Nigeria, South Africa, Tanzania, Thailand, USA, and Zambia). The guide updated the key concepts for 5-18+ years old individuals (UNESCO, 2018), and the five key concepts were expanded to eight key concepts for the same age ranges. These eight key concepts and related content are presented in Table 1.

Table 1.

Key Concepts In Comprehensive Sexuality Education (UNESCO, 2018)

Key concept	Topics
Relationships	Families
	Friendship, love and romantic relationships
	Tolerance, inclusion and respect
	Long-term commitments and parenting
Values, Rights, Culture and Sexuality	Values and sexuality
	Human rights and sexuality
	Culture, society and sexuality
Understanding Gender	The Social Construction of Gender and Gender Norms
	Gender Equality, Stereotypes and Bias
	Gender-based Violence
Violence and Staying Safe	Violence
	Consent, Privacy and Bodily Integrity
	Safe use of Information and Communication Technologies
Skills for Health and Well-being	Norms and Peer Influence on Sexual Behavior
	Decision-making
	Communication, Refusal and Negotiation Skills
	Media Literacy and Sexuality
	Finding Help and Support
The Human Body and Development	Sexual and Reproductive Anatomy and Physiology
	Reproduction
	Puberty
	Body Image
Sexuality and Sexual Behavior	Sex, Sexuality and the Sexual Life Cycle
	Sexual Behavior and Sexual Response
Sexual and Reproductive Health	Pregnancy and Pregnancy Prevention
	HIV and AIDS Stigma, Care, Treatment and Support
	Understanding, Recognizing and Reducing the Risk of STIs, including HIV

The final guide developed by the UNESCO (2018) stated that the main objective of comprehensive sexuality education was to ensure that individuals are equipped with related knowledge, skills, attitudes and values, support them to establish adequate social and sexual relationships, improve their decision-making skills, realize the impact of these decisions on their well-being, and maximize their awareness about their rights. Sexuality education studies conducted based on the guide demonstrated that it strengthened the communication skills, improved the self-efficacy of the participants, and positively affected their behavior (Constantine et al., 2015b; Rohrbach et al., 2015; UNESCO, 2016). However, it was also reported that it did not improve the likelihood of participation in sexual activities and exhibition of risky behavior (Fonner, Armstrong, Kennedy, O'Reilly and Sweat, 2014; Shepherd et al., 2010; UNESCO, 2009). For these positive effects, both guides recommended the development of a curriculum that would include comprehensive sexuality education learning objectives both at school and out-of-school.

Although the guide content is instructive for the development of the curricula, it should be noted that the guide does not include the intervention methods required in the training. Furthermore, the literature also does not mention clear intervention methods; however, research demonstrated that effective interventions would have positive effects on knowledge, attitudes and behavior in various environments (Fonner et al., 2014; Kirby, Laris and Rolleri, 2006), and help the generalization of the acquired knowledge and behavior (Gardner, Montgomery and Knerr, 2016; Leijten, Melendez-Torres, Knerr and Gardner, 2016). The literature emphasized the significance of comprehensive sexuality education, inclusion of the the above-mentioned topics in the curricula, and the right of the individuals with disabilities for comprehensive sexuality education, similar to other individuals (Daymon and Holloway, 2011; UNESCO, 2018). However, it was frequently underlined that the curricula should be adapted for individuals with disabilities. Individuals with autism spectrum disorder (ASD) were also emphasized among the groups that require sexuality education (Travers and Tincani, 2010).

ASD is a neurodevelopmental disorder characterized by communication and social interaction problems and repetitive and limited behavior, activities, and interests (American Psychological Association [APA], 2013). Due to specific diagnostic characteristics, individuals with ASD could experience limitations in the comprehension of the changes and related needs associated with developmental periods and adequate expression of these needs (Travers and Tincani, 2010). This could lead to the perception of individuals with ASD as immature or sexually passive individuals by the society and experts, leading to the exclusion of these individuals from sexuality education programs (Stokes and Kaur, 2005). However, previous studies reported that it was essential to include individuals with ASD in comprehensive sexuality education programs due to their diagnosis (Ogur, Olcay and Baloglu, 2023; Travers and Tincani, 2010), and their exclusion from sexuality education would lead to inadequate circumstances in the meeting of these needs (Pecora et al., 2020), and prevent the development of skills that could protect the individuals with ASD in case of security threats such as sexual abuse (Ballan and Freyer, 2017; Hannah and Stagg, 2016; Ogur, 2023).

Although studies emphasized that comprehensive sexuality education was essential for individuals with ASD, these individuals are less included in comprehensive sexuality education that were tailored to their developmental requirements instead of those of the individuals with typical development, and their access to sexual health sources was quite limited (Mackin, Loew, Gonzalez, Tykol and Christensen 2016; Stokes et al., 2007; WHO, 2020). One of the important reasons for this was that the teachers with a key role in providing the education were not aware of the sexuality education needs of individuals with ASD, and even when they were aware, they did not have adequate knowledge and skills on the comprehensive sexuality education content and related methods and techniques (Ogur et al., 2023; Rodriguez, 1995). In a study conducted with teachers in 11 countries who worked with individuals with special needs, 56.2% of the teachers stated that they did not include any sexuality education content in their syllabi for students with special needs at any stage in their professional life, and the included content was limited to certain areas and the relevant country. They were under the influence of their cultural and religious stereotypes (i.e., teachers in Saudi Arabia considered comprehensive sexuality education as a means of protection against the dangers associated with illegal sexual behavior), they were unaware of sexuality education content, and they did not have adequate knowledge and skills to instruct comprehensive sexuality education. Furthermore, it was reported that

a significant number of teachers argued that only individuals diagnosed with mild intellectual disabilities should attend sexuality education (Ogur et al., 2023). In parallel with this finding, research studies regarding teachers working with individuals with intellectual disabilities often focus on inappropriate sexual behaviors (Akdemir, 2024), sexuality (Girgin-Büyükbayraktar et al., 2017; Maia et al., 2015), relationships, good practices and methods (Brown et al., 2024; Bourke et al., 2024), attitudes (Fu et al., 2024; Lonescu et al., 2019; Raj & Chavhan, 2023), challenges (Girgin-Büyükbayraktar et al., 2017), health and safety (Jeyachandran et al., 2024), and experiences and perspectives (Strnadová et al., 2022). In addition, studies have shown that teachers generally teach specific rules (Frawley & Wilson, 2016), sexual abuse (Johnston, 2010; Ray et al, 2004; Sevlever, 2013), HIV and AIDS prevention (Groce, 2013; Hamilton, 2009; Rohleder & Swartz, 2009), hygiene (Girgin-Büyükbayraktar et al., 2017), self-care skills (Mattson et al., 2016; Richman et al., 1984; Veazey et al., 2016), gender-appropriate dressing and behavior skills (Akdemir, 2024; Girgin-Büyükbayraktar et al., 2017), masturbation (Akdemir, 2024; Gill, 2012; Walsh, 2000), and interpersonal skills such as going on a date or establishing an emotional relationship with others (Maia et al., 2015). However, teachers usually neglect the instruction of communication, conscious choices, and awareness of the values and rights (McCabe & Schreck, 2009).

Studies conducted with teachers demonstrated that teachers did not have adequate knowledge of the related instructional methods and techniques and employed instructional strategies such as video modeling (Ariyanti and Royanto, 2017), modeling (Bollman, Davis and Zarcone, 2009; Wells, Clark and Sarno, 2012), social stories (Ariyanti and Royanto, 2017; Stankova and Trajkovski, 2021), role play (Bollman et al., 2009; Hayashi, Arakida, and Ohashi, 2011), discussion (Hayashi et al., 2011), behavioral skill training, traditional instruction, and drama (Ogur et al., 2023). Certain studies emphasized that scientific practices should be employed to present sexuality education content (Brown et al., 2024). Ogur et al. (2023) observed that teachers adopted measures to reduce or eliminate negative behavior, such as time-out, ignoring, and response interruption/redirection.

In conclusion, the literature evidenced that (a) comprehensive sexuality education guides included diverse content for 5-18+ years old individuals and it was every individual's right to access comprehensive sexuality education (SIECUS, 2004; UNESCO, 2009; UNESCO 2016; UNESCO, 2018), (b) individuals with ASD required comprehensive sexuality education and related content more than individuals with typical development due to their diagnostic traits; however, they experienced difficulties to access and were less included in comprehensive sexuality education (Mackin et al., 2016; Stokes et al., 2007; WHO, 2020), (c) the inclusion of the individuals with ASD in comprehensive sexuality education would improve their communication and social skills and positive behavior, and reduce negative behavior (Pecora et al., 2020), (d) the limitation of the individuals with ASD to sexuality education could be due to the inability of their teachers to recognize their needs, (e) and even when these needs were recognized, teachers had limited knowledge and skills on sexuality education and related instructional methods and techniques (Ogur et al., 2023; Rodriguez, 1995). However, the literature lacks studies on the knowledge, experience, and professional development requirements of teachers who instruct comprehensive sexuality education to individuals with ASD. However, such research will help raise the awareness of the teachers about comprehensive sexuality education requirements for individuals with ASD in early childhood and contribute to the determination of the goals and practices in the classroom. This will lead to the inclusion of individuals with ASD in education and equal opportunities in education, which are their legal rights. The present study aimed to investigate the status of teachers who work with individuals with ASD on comprehensive sexuality education, the comprehensive sexuality education content they instruct, the methods and techniques they employ and their competence in the instruction of comprehensive sexuailty education, the methods they use to evaluate the impact of the education on individuals with ASD, their participation in professional development activities, and their needs. Thus, the following research problems were determined.

1. What are the views of teachers who instruct comprehensive sexuailty education to individuals with ASD on the instruction of comprehensive sexuailty education to these individuals?

2. What are the experiences of teachers who instruct comprehensive sexuailty education to individuals with ASD on comprehensive sexuailty education (the context, individual traits, instructional methods, and techniques)?
3. What are the views of teachers who instruct comprehensive sexuailty education to individuals with ASD on their competence and the impact of comprehensive sexuailty education on these individuals?
4. Do the teachers who instruct comprehensive sexuailty education to individuals with ASD participate in professional development activities, and what are the associated needs?

Method

This section discusses the research model, participants, development of the data collection instrument, and data collection.

The Research Design

The present study, designed to determine the knowledge, experiences, and professional development requirements of teachers who instruct comprehensive sexuailty education to individuals with ASD, is descriptive research. Descriptive research aims to describe a case, situation, event, or sample comprehensively. These studies investigate an existing case, relationships, processes, and trends (Hocaoğlu and Baysal, 2019). In descriptive research, data is collected with surveys, observations, or interviews (Büyüköztürk et al., 2019). The present study data were collected using a survey form. Surveys are data collection tools that include several questions that aim to determine individuals' views, ideas, and attitudes about a topic or a case. Surveys could include open-ended or close-ended questions (Büyüköztürk et al., 2019). The survey developed in the present study included both open-ended and close-ended questions.

Participants

Hacettepe University Ethics Commission approved the study. Since the study aimed to collect comprehensive data from individuals meeting certain criteria, the participants were assigned with criterion sampling, a purposive sampling method (Johnson and Christensen, 2014). Inclusion criteria were: (a) experience with individuals with ASD and (b) employment as a special education teacher. Participants meeting these criteria were contacted online. The author contacted the school administrators and institutions attended by individuals with ASD in seven geographical regions in Turkey. They were informed about the study and asked to communicate the hyperlink to the survey form to the special education teachers in their schools. Furthermore, the teachers were informed about the research, and the form was sent to their e-mails and WhatsApp groups. The study was conducted with 200 volunteer participants. Participant demographics are presented in Table 2.

Table 2.
Participant Demographics

Age			Seniority			School Type			Region of employment		
	f	%		f	%		f	%		f	%
20-29	69	%34.5	1-5	81	%40.5	Special education kindergarten	18	%9	Central Anatolia	29	%14.5
30-39	99	%49.5	6-11	76	% 38	Private kindergarten	1	%0.5	Southeastern Anatolia	49	%24.5
40-49	25	%12.5	12-17	28	%14	Special education school (1st level)	16	%8	Eastern Anatolia	23	%11.5
50-59	7	%3.5	18-23	4	%2	Special education school (2nd level)	29	% 14.5	Black Sea	22	%11
			24-30	11	%5.5	Special education school (3rd level)	18	%9	Marmara	32	%16
						Special Education Vocational High School	23	%11.5	Aegean	21	%10.5
						Guidance and Research Center	16	%8	Mediterranean	21	%10.5
						Other	79	%39.5	Unknown	3	%1.5

Data Collection Instrument

The study data were collected using a structured survey form. The steps specified by Taherdoost (2021) were adopted in the development of the survey: (a) Determination of the required data, (b) determination of the method to implement the survey, (c) determination of the question types, (d) development of the questions, (e) organization of the questions, (f) pre-tests, (g) finalization of the survey. A literature review was conducted to determine the required information, and it was decided to conduct the survey online to reach more participants in various regions. Both open- and close-ended questions were included in the survey to ensure comprehensive data collection. The questions were organized based on the topical content and submitted for review by three experts in ASD and sexuailty education. Lawshe content validity ratio was calculated with the following formula (Sencan, 2005):

$$\text{Content Validity} = \frac{ne - \frac{N}{2}}{\frac{N}{2}}$$

ne = Number of agreements across the raters
N = Total number of raters

$$\text{Content Validity} = \frac{3 - \frac{3}{2}}{\frac{3}{2}}$$

Thus, the content validity ratio was 1.00, indicating excellent content validity. The survey form, revised based on the experts' recommendations, was uploaded to Google Forms for the pilot scheme. After the pilot scheme, the form was finalized. The pilot scheme is detailed below. The form included nine open-ended and 56 close-ended questions.

The study data was collected using a structured survey form. The survey included two sections. Furthermore, it included an introduction section where the study's aim, participants' expectations, and ethical principles were explained. The first section included questions on demographic variables that could affect special education teachers' ability to instruct comprehensive sexuailty education to individuals with ASD. The second section aimed to investigate the status of the special education teachers in the instruction of comprehensive sexuailty education to these individuals, the characteristics of target individuals and the context in which they instructed comprehensive sexuailty education, the methods and techniques they employed in the instruction of comprehensive sexuailty education, their views on their competence, the impact of comprehensive sexuailty education on individuals with ASD, their professional skills, and the professional needs. Thus, the section first included open-ended questions without providing any information to determine whether the participants instructed comprehensive sexuailty education, the content they included in the instruction, and the instructional methods and techniques they employed. Then, information was provided about the comprehensive sexuailty education content, and close-ended questions were asked to determine whether they included each key content in instruction. The survey form was developed based on the eight key content in the comprehensive sexuailty education guide developed by UNESCO in 2009 and revised in 2018.

Pilot Scheme

Before the study data were collected, a pilot scheme was conducted to determine the fit of the survey form. The pilot scheme was conducted with three special education teachers who had experience with individuals with ASD. Also, a semi-structured interview was conducted with pilot scheme participants, and they were asked whether the form was easy to use, whether the time to fill it out was adequate, and whether any content should be added to or removed from it. The form was finalized based on feedback from the pilot scheme.

Data Collection and Analysis

The finalized form was employed to collect the study data online. The content validity of the data collection instrument was determined to be excellent. The author contacted relevant schools and institutions to communicate the link for the survey on Google Forms. Descriptive analysis was conducted to analyze the qualitative study data. A descriptive analysis framework was developed, and the data were analyzed based on the thematic framework. Thus, the data were first transferred to an

Excel file. Then, adequate participant responses were coded to achieve the thematic framework based on similar codes (Yıldırım and Şimşek, 2016). Both qualitative and quantitative data are reported in frequencies and percentages.

In the process of preparing the questionnaire, it was not allowed to move to the next page without marking all the questions on one page; thus, it was ensured that all questions were filled in completely and accurately. In addition, the transcripts obtained through Google Forms were analysed separately by two researchers and the analyses continued until 100% consistency was achieved by the researchers. In addition, the data of 25 randomly selected participants were shared with an independent researcher who continues her postgraduate education in the field of special education; the independent researcher was expected to analyse the data by creating a coding key for the open-ended interview questions. Subsequently, the analyses of the researchers and the independent researcher for each question were examined one by one and compared. The same answers were coded as 'Agreement' and different answers were codded as 'Disagreement'. Miles and Huberman's (1994) formula 'Agreement / (Agreement + Disagreement) X100' was used to calculate the inter-coder reliability data and the inter-coder reliability was found to be 100%.

Findings

In this section, the comprehensive sexuailty education instructed by the teachers to individuals with ASD, the comprehensive sexuailty education content they taught, the instructional methods and techniques they employed, their views on their competence in the instruction of comprehensive sexuailty education, the impact of the education on individuals with ASD, their participation in professional development activities, and their needs are discussed.

Participant Views on The Instruction of Comprehensive Sexuality to Individuals with ASD

In the study, participants were asked whether they provided comprehensive sexuality education to any students with ASD during their tenure. Only 10% of the participants stated that they provided comprehensive sexuailtyuailty education to individuals with ASD, while 90% stated that they did not. Furthermore, participants who indicated that they offered comprehensive sexuailty education to individuals with ASD were asked about the instructional content and the methods and techniques they adopted. Tables 3 and 5 present tabulated responses to the open-ended questions in frequencies. Tables 4, 6, and 7 present responses to all close-ended questions.

Table 3.
Sexuality Instruction to Individuals with ASD

Sexuailty education			Content			Methods and Techniques			
	f	%		*f*	%			*f*	%
Yes	20	%10	Recognition of private parts	3	%27.27		Applied behavioral analysis interventions	3	%15.7
No	180	%90	Privacy education	2	%18.18		Errorless teaching	3	%15.78
			Masturbation	1	%9.09	Instruction Methods and Techniques	Video model instruction	2	%10.52
			Circle of trust	1	%9.09		Direct instruction	2	%10.52
			Changing peds	1	%9.09		Modeling	2	%10.52
			Good touch and bad touch	1	%9.09		Traditional instruction	1	%5.26
			Gender awareness	1	%9.09		Verbal prompts	1	%5.26
			Protection from sexual abuse	1	%9.09		Social stories	1	%5.26
							Cycle of trust	1	%5.26
						Material	3D visuals	2	%10.52
							Visual material	1	%5.26

Three out of the six participants who instructed sexuality education to individuals with ASD stated that they instructed in content such as recognition of private parts (27.27%), and two out of them privacy education (18.18%). They generally employed methods and techniques such as applied behavioral analysis interventions, errorless teaching, modeling, and direct instruction. Three

participants (15.78%) indicated materials among the methods and techniques they employed in comprehensive sexuailty education.

Comprehensive Sexuailty education Experiences

The findings on the instruction of comprehensive sexuailty education content and the ages and traits of the individuals with ASD who were instructed are presented in Table 4. As seen in Table 4, 81%-98% of the participants reported that they did not instruct comprehensive sexuailty education to individuals with ASD. In contrast, 2%-19% reported that they instructed at least one comprehensive sexuailty education content to these individuals. Participants stated that they predominantly instructed gender awareness (19%), and only a few instructed sexuailty and reproductive health (2%) to individuals with ASD. The participants who instructed comprehensive sexuailty education content had experience with four age groups of individuals with ASD. It was observed that the participants mainly instructed sexuality and reproductive health content (33.33%), and only 17.14% instructed values, rights, culture, and sexuality content to 5-8-year-old individuals. They did not instruct sexuality and reproductive health content to 9-12-year-old individuals, while a significant number instructed relationship content (38.09%) to these students. They instructed the relationship content the least to 12-15-year-old individuals (21.42%), while they predominantly instructed values, rights, culture, and sexuality (42.85%). The participants instructed values, rights, culture, and sexuality content the least to 15-18+ years old individuals (11.42%), while they mainly instructed sexual and reproductive health content (33.33%) to this group.

As seen in Table 4, the participants instructed comprehensive sexuality education to individuals with ASD and with all degrees of requirement. Only a few (13.33%) instructed values, rights, culture, and sexuality content to individuals with ASD who required first-level assistance, while a higher number of participants instructed violence and safety content (23.18%). A few participants instructed values, rights, culture, and sexuality content (6.66%) to individuals with ASD who required second-level assistance, and a higher number of participants instructed sexuality and reproductive health content (20%) to this group. A few participants instructed values, rights, culture, and sexuality content (4.44%), and a higher number instructed sexuality and sexual behavior content (18.18%) to individuals with ASD who required third-level assistance. They did not instruct sexual and reproductive health content to individuals with ASD without a concomitant disability; they mainly instructed gender awareness (9.58%) to these individuals. A few participants instructed sexual and reproductive health content to individuals with mild intellectual disability and ASD (20%), while most (40%) instructed values, rights, culture, and sexuality content. Only a few participants instructed sexuality and sexual behavior content (12.12%) to individuals with moderate to severe intellectual disability and ASD, and they mainly instructed relationship content (22.44%). It was determined that a few participants instructed relationship content to individuals with auditory, visual, or physical disabilities and ASD (4.08%), while the most instructed sexuality and reproductive health content (10%).

Table 4.

The Comprehensive Sexuality Education Content Instructed by the Participants and the Characteristics of the Students

		Relationships		Values, rights, culture and sexuality		Gender awareness		Violence and safety		Health and well-being skills		Human body and development		Sexuality and sexual behavior		Sexuality and reproductive health	
		f	%	*f*	%	*f*	%	*f*	%	*f*	%	*f*	%	*f*	%	*f*	%
Instruction	Yes	28	%14	24	%12	38	%19	35	%17.5	18	%9	%13.5	27	13	%6.5	4	%2
	No	172	%86	176	%88	162	%81	165	%82.5	182	%91	%86.5	173	187	%93.5	196	%98
Age	5-8 age group	9	%21.42	6	%17.14	16	%26.22	15	%25.42	8	%25	%21.42	9	5	%19.23	2	%33.33
	9-12 age group	16	%38.09	10	%28.57	18	%29.50	19	%32.20	7	%21.87	%33.33	14	7	%26.92	0	%0
	12-15 age group	9	%21.42	15	%42.85	16	%26.22	13	%22.03	9	%28.12	%26.19	11	6	%23.07	2	%33.33
	15-18+ age group	8	%19.42	4	%11.42	11	%18.03	12	%20.33	8	%25	%19.04	8	8	%30.76	2	%33.33
Student characteristics	1st level assistance requirement	9	%18.36	6	%13.33	16	%21.91	16	%23.18	7	%19.44	%20.40	10	5	%15.15	2	%20
	2nd level assistance requirement	7	%14.28	3	%6.66	7	%9.58	8	%11.59	5	%13.88	%12.24	6	4	%12.12	2	%20
	3rd level assistance requirement	6	%12.24	2	%4.44	5	%6.84	5	%7.24	4	%11.11	% 8.16	4	6	%18.18	1	%10
	No concomitant disability	3	%6.12	4	%8.88	7	%9.58	4	%5.79	1	% 2.77	% 8.16	4	3	%9.09	0	%0
	Mild intellectual disability + ASD	11	%22.44	18	%40	19	%26.06	21	%30.43	10	%27.77	%24.48	12	8	%24.24	2	%20
	Moderate-severe intellectual disability + ASD	11	%22.44	9	%20	15	%20.54	12	%17.39	7	%19.44	%20.40	10	4	%12.12	2	%20
	Auditory, visual, or physical disability + ASD	2	%4.08	3	%6.66	4	% 5.47	% 4.34	% 4.34	2	%5.55	%6.12	3	3	%9.09	1	%10

Table 5.

The Methods and Techniques Employed by the Participants in the Instruction of Comprehensive Sexuality Education

		Relationships		Values, rights, culture and sexuality		Gender awareness		Violence and safety		Health and well-being skills		Human body and development		Sexuality and sexual behavior		Sexuality and reproductive health	
		f	%	*f*	%	*f*	%	*f*	%	*f*	%	*f*	%	*f*	%	*f*	%
Instruction methods and techniques	Conventional instruction	9	%20.93	8	%19.04	6	%8.10	6	%10.32	3	%10.71	7	%16.27	4	%16	2	%33.33
	Modeling	6	%13.95	4	%9.52	12	%16.21	9	%15.51	2	%7.14	6	%6.97	5	%20		
	Direct instruction	6	%13.95	5	%11.90	11	%14.86	9	%15.51	3	%10.71	4	%9.30	3	%12		
	Social stories	3	%6.97	2	%4.76	5	%6.75	1	%1.72								
	Video model instruction	3	%6.97	1	%2.38	7	%9.45	7	%12.06	4	%14.28	6	%13.95	3	%12		
	Roleplay	1	%2.32	1	%2.38	1	%1.35			1	%3.57						
	Applied behavioral analysis interventions	1	%2.32	1	%2.38	1	%1.35	2	%3.44	2	%7.14			1	%4	1	%16.66
	Errorless teaching	1	%2.32	2	%4.76	7	%9.45	3	%5.17	2	%7.14	2	%4.65	2	%8		
	Discrete trials	1	%2.32														
	Script-fading									1	%3.57						
	Incidential instruction			1	%2.38			1	%1.72	1	%3.57						
	Peer-mediated instruction					1	%1.35	1	%1.72	1	%3.57						
	Question and answer	3	%6.97	1	%2.38	2	%4.05	2	%3.44	1	%3.57			1	%4		
	Cognitive theory					1	%1.35										
	Problem-solving	1	%2.32														
	Computer-assisted instruction							2	%3.44								
	Parent-mediated instruction	2	%4.65	2	%4.76	2	%2.70	2	%3.44	2	%7.14	1	%2.32	1	%4		
	Game-based intervention							1	%1.72			1	%2.32				
	Differential reinforcement	1	%2.32														
	Learning by doing							1	%1.72								
	Chaining									1	%3.57						
Instructional principles	Based on individual differences	1	%2.32			1	%1.35	1	%1.72	1	%3.57						
	Simple to complex			1	%2.38												
	Counselor-assisted					1	%1.35	1	%1.72	1	%3.57			2	%8		
Materials	Picture cards	3	%6.97	1	%2.38	6	%8.10	5	%8.61	2	%7.14	7	%16.27	3	%12	1	%16.66
	3D material					2	%2.70					3	%6.97				
	Written material			1	%2.38	2	%2.70	1	%1.72							1	%16.66
	Digitak material					1	%1.35										
	Story cards			1	%2.38												
	Interactive board			1	%2.38												
	Puppets			1	%2.38												
	Table of rules	1	%2.32					1	%1.72								
	Animations					1	%1.35										
Setting	Simulation	1	%2.32			1	%1.35	1	%1.72								

Participants were asked about the methods and techniques they employed in the instruction of comprehensive sexuality education. Participants' responses were analyzed in four categories: instruction methods and techniques, instruction principles, instruction materials, and settings (Table 5).

As seen in Table 5, the participants who reported that they instructed comprehensive sexuailty education preferred conventional instruction (range = 8.10%-33.33%). The most frequently employed methods and techniques included modeling (range = 6.97%-20%), direct instruction (range = 9.30%-15.51%), and video model instruction (range = 2.38%-14.28%), while the least employed methods were learning by doing (1.72%), discrete trial training (2.32%), and computer-assisted instruction (3.44%).

Instructional Methods and Techniques

The participants employed conventional instruction (33.33%). They applied behavioral analysis interventions (16.66%) in the instruction of sexuality and reproductive health content, modeling in the instruction of sexuality and sexual behavior content (16.21%), direct instruction in violence and safety content (15.51%), social stories (6.97%) and question and answer method (6.97%) in the instruction of relationships, video model instruction (14.28%), parent-mediated instruction (7.14%), role play (3.57%), incidental instruction (3.57%), and peer-mediated instruction (3.57%) in the instruction of health and well-being skills, errorless teaching methods in the instruction of gender awareness (9.45%), game-based learning in the instruction of the human body and development and sexuality and sexual behavior (2.32%) content. Furthermore, the participants employed discrete trial instruction, problem-solving techniques, and differential reinforcement only in the instruction of relationships, script-fading and chaining only in the instruction of health and well-being skills, the cognitive theory only in the instruction of gender awareness, and learning by doing, and computer-assisted instruction only in the instruction of violence and safety.

Instructional principles

The participants who instructed comprehensive sexuality education content stated that they focused on individual differences during the instruction of gender awareness, violence and safety content, and health and well-being skills, and they included a counselor in the process. 2.3% of the participants stated that they were interested in the values, rights, culture and sexuality, and sexuality and sexual behavior content and adopted instruction hierarchy from simple to complex content.

Materials

Participants stated that they mainly employed picture cards (range = 2.38% - 16.66%) and written material (range = 1.72% - 16.66%) during the instruction of comprehensive sexuality education. They preferred picture cards in the instruction on sexual and reproductive health (16.66%), three-dimensional material in the instruction on human body and development (6.97%), written material in the instruction on sexual and reproductive health (16.66%), and the table of rules in the instruction of relationships (2.32%). Furthermore, participants employed only digital media and animations in the instruction of gender awareness, story cards, interactive boards, and puppets only in the instruction of values, rights, culture, and sexuality.

Setting

Only a few participants reported that they employed simulations in the instruction. Only a few participants stated that they employed simulations (1.35%) in the instruction of gender awareness, and others employed simulations (2.32%) in the instruction of relationships.

Comprehensive Sexuality Education Competency of the Participants and Quality of the Education

When the participants were asked to assess their competence in the instruction of comprehensive sexual content, it was determined that they did not feel inadequate in sexuality and sexual behavior content (0%). Furthermore, they felt most inadequate in sexuality and reproductive health (25%). It was determined that the participants considered themselves moderately competent in instructing the

remaining topics, except the human body and development (33.33%). Also, the participants did not feel competent in the instruction of any topic except sexuality and sexual behavior (7.69%).

The participants who reported that they taught comprehensive sexuality education content were asked to assess the impact of the instruction on individuals with ASD. They considered that their instruction on relationships, gender awareness, violence and safety, health and well-being skills, and sexuality and sexual behavior was not effective (0%), and they were least proficient in the instruction of sexuality and reproductive health (50%). It was determined that the participants considered themselves moderately competent at best in instructing all topics. The participants stated that instruction of sexuality and sexual behavior content (46.1%) was most effective, while values, rights, culture, and sexuality (0%) instruction was not effective. Furthermore, they considered the instruction on gender awareness (7.8%) quite compelling. In contrast, the instruction on health and well-being skills, the human body and its development, sexuality and sexual behavior, and sexuality and reproductive health (0%) topics were considered relatively ineffective. Participant views on their competence in the instruction of comprehensive sexuality content and the impact of this instruction are presented in Table 6.

Participation in Professional Development Activities and Participant Needs

The participants attended comprehensive sexuality education activities at different frequencies. It was observed that 31.57% - 75% of the participants stated that they attended training on sexuality education, and 25% and 68.42% indicated that they did not participate in any training. Participants who attended professional development activities stated that the contents they were trained on sexuality and reproductive health (75%), sexuality and sexual behavior (69.23%), relationships (53.57%), values, rights, culture and sexuality (50%), violence and safety (37.14%), human body and development (37.03%), health and well-being skills (33.33%), and gender awareness (31.57%). Furthermore, the participants were asked whether they needed further professional development activities on comprehensive sexuality education. It was determined that the participants mostly (85.7%) required further professional development on relationships, violence, and safety, as well as health and well-being skills (83.3%), human body and development (81.4%), gender awareness (76.3%), values, rights, culture and sexuality (75%), sexuality and sexual behavior (53.8%). And sexual and reproductive health (50%). The participant' views on their educational level and training requirements in comprehensive sexuality education are presented in Table 7.

Table 6.
Participant Competency in the Instruction of Comprehensive Sexuality Education and Participant Views on the Impact of the Instruction

		Relationships		Values, rights, culture and sexuality		Gender awareness		Violence and safety		Health and well-being skills		Human body and development		Sexuality and sexual behavior		Sexuality and reproductive health	
		f	%	*f*	%	*f*	%	*f*	%	*f*	%	*f*	%	*f*	%	*f*	%
Competency	Incompetent	1	%3.57	2	%8.33	2	%5.26	3	%8.57	1	%5.55	1	%3.70	0	%0	1	%25
	Not competent	9	%32.14	7	%29.16	13	%34.21	9	%25.71	4	%22.22	6	% 22.22	1	%7.69	0	%0
	Moderately competent	14	% 50	11	%45.83	14	%36.84	13	%37.14	8	%44.44	9	%33.33	8	%61.53	2	%50
	Competent	4	%14.28	4	% 16.66	9	%23.68	10	% 28.57	5	%27.77	11	% 40.74	3	%23.07	1	%25
	Very competent	0	%0	0	%0	0	%0	0	%0	0	%0	0	%0	1	%7.69	0	%0
Instructional impact	Ineffective	0	%0	10	%41.66	0	%0	0	%0	0	%0	2	%7.40	0	%0	2	%50
	Low impact	4	%14.28	5	% 20.83	4	%10.52	7	%20	3	%16.66	2	% 7.40	1	%7.69	0	%0
	Moderate impact	13	%46.42	8	% 33.33	20	%52.63	16	%45.71	10	% 55.55	13	%48.14	6	%46.15	1	%25
	Effective	9	%32.14	0	%0	11	% 28.94	11	%31.42	5	%27.77	10	%37.03	6	%46.15	1	%25
	Very effective	2	%7.14	1	%4.16	3	%7.89	1	%2.85	0	%0	0	%0	0	%0	0	%0

Table 7.
Participation in Professional Development Activities and Further Requirements

		Relationships		Values, rights, culture and sexuality		Gender awareness		Violence and safety		Health and well-being skills		Human body and development		Sexuality and sexual behavior		Sexuality and reproductive health	
		f	%	*f*	%	*f*	%	*f*	%	*f*	%	*f*	%	*f*	%	*f*	%
Previous training on content	Yes	15	%53.57	12	%50	12	%31.57	13	%37.14	6	%33.33	10	%37.03	9	%69.23	3	%75
	No	13	%46.42	12	%50	26	%68.42	22	%62.85	12	% 66.66	17	%62.96	4	%30.76	1	%25
Training requirement	Yes	24	%85.71	18	%75	29	%76.31	30	%85.71	15	%83.33	22	%81.48	7	%53.84	2	%50

Discussion and Conclusion

The present descriptive study aimed to investigate the instruction of comprehensive sexuality education to individuals with ASD, the sexuality content that the teachers instructed, the methods and techniques the teachers employed in instruction, instructional competence of the teachers in comprehensive sexuality education, the impact of the instruction on individuals with ASD, the participation of the teachers in professional development activities, and teacher requirements. The study was conducted with 200 volunteering teachers in seven regions in Turkey. All participants were special education teachers. The participant age varied between 22 and 59 and their mean seniority was 8 years (range = 1-30 years). Participants worked with individuals with ASD at different educational levels in various institutions such as kindergartens, special education schools (levels I, II, and III), special education vocational high schools, and guidance research centers.

In the study, the participants were asked whether they instructed sexuality content to individuals with ASD during their professional lives, the comprehensive sexuality education content they instructed, and which instructional methods they employed. 90% of the participants stated that they did not instruct comprehensive sexuality education to individuals with ASD. This could be due to the fact that the participants did not receive comprehensive sexuality education; thus, they lacked knowledge and skills required for comprehensive sexuality instruction. Previous studies also mentioned the lack of formal teacher training on sexuality education (Lindsay, Bellshaw, Culross, Staines and Michie, 1992). The Turkish special education undergraduate programs lack compulsory courses on comprehensive sexuality education (Council of Higher Education, 2018). It could also be because individuals with ASD are considered sexually passive (Stokes and Kaur, 2005) or they could not understand sexuality (Ogur et al., 2023). Ogur et al. (2023) reported that comprehensive sexuality education was considered to be limited to certain age groups and students with high cognitive skills by the teachers. Furthermore, since comprehensive sexuality education is influenced by the beliefs, social and cultural background of the society and perceived as a taboo in certain societies (Brown and Pirtle, 2008; Christian, Stinson and Dotson, 2001; Swango-Wilson, 2008), the participants could have been reluctant in instructing sexuality.

The research findings indicated that the participants who instructed comprehensive sexuality education did not include topics such as relationships, values, rights, culture and sexuality, sexuality and sexual behavior, health and well-being skills, sexuality and reproductive health, but certain topics associated with the human body and development, gender awareness, and violence and safety content. Also, the study findings were consistent with the previous reports that the instructions were limited by the biological dimension of the discussed topics, and the culture, society and belief dimensions were ignored (McCabe and Schreck, 2009; Ogur et al., 2023). This could be due to the lack of knowledge on comprehensive sexuality education content. Furthermore, misrecognition of the significance of these topics for individuals with ASD could be another reason. The significance of comprehensive sexuality education for all individuals was emphasized in the literature [CRPD (Convention on the rights of persons with disabilities) 2016; UNESCO, 2018]. The said education should be instructed systematically to individuals who cannot express their needs such as individuals with ASD (Ogur et al., 2023). Furthermore, the seniority of more than half of the participants (f = 119; 59.1%) was between 6 and 30 years, and they worked with individuals with various ASD severity in different age groups. It could be suggested that such experienced teachers should have instructed comprehensive sexuailtyuality content further.

It should also be noted that one participant stated that he instructed masturbation skills. Teachers do not have the skills to instruct masturbation skills, and instruction of such topics should be provided by field experts. Mann and Travers (2020) emphasized that comprehensive guidance is required for effective masturbation training to ensure the safety of the individual. In the same study, it was emphasized that experts who could provide masturbation training should be familiar with the traits, requirements and education level of the individuals with special needs, and possess certain knowledge on human physiology, sexuality and law; thus, attorney assistance is required in the instruction of such topics. Previous studies conducted with teachers and parents reported that classroom training was limited to the management of masturbation behavior (i.e., consultation about the right settings) rather than the instruction of masturbation skills (Flynn and Lo, 2016; Patterson and Scott, 2011), and studies

where masturbation skills are instructed were generally conducted by sexuality or psychiatry experts (Kaeser and O'Neill, 1987; Patterson and Scott, 2013). Thus, it could be suggested that comprehensive sexuality education content should be included in the curriculum and individualized curricula should be developed for individuals with ASD. To improve the competency of the teachers in comprehensive sexuality education, undergraduate courses and in-service training activities should be organized. In fact, in a study involving 103 studies on the views and attitudes of teachers regarding sexuailty education for individuals with intellectual disabilities, it was reported that teachers needed further training on sexuailty education. (Bruno, Baiocco and Pistella, 2024). Furthermore, it could be recommended to organize expert and institutional assistance for teachers in the instruction of content they are not familiar with. The research conducted by Brown et al. (2024) also emphasized the need for studies on sexuailty education to be carried out in cooperation with all stakeholders in light of evidence-based programs. It could also be recommended to ensure continuous training. The literature has frequently emphasized that it was insufficient to transform instructional methods or provide single in-service training to improve comprehensive sexuality pedagogy (Haberland and Rogow, 2015).

Determination of the methods and techniques employed in the instruction of comprehensive sexuality educational content requires expertise as well as the methods and techniques employed in the instruction of this content (Haberland and Rogow, 2015). Haberland and Rogow (2015) emphasized that strengthening teacher skills is an urgent priority for the dissemination or improvement of comprehensive sexuality education. They indicated that teachers should utilize various interactive methods in the instruction of comprehensive sexuailty education. Studies also recommended the employment of methods and techniques that do not only allow the acquisition of knowledge but support the acquisition of critical thinking and practical skills. Furthermore, it was reported that non-scientific methods and techniques could lead to problems in sexuailty education, and these could even be dangerous for the students (Kaeser and O'Neill, 1987). It was determined in the present study that only 50% of the 20 participants, who stated that they instructed sexuality, mentioned that they employed conventional instruction, modeling, and video modeling techniques. This finding was consistent with previous reports (Hayashi et al., 2011; Ogur et al., 2023). Although this was a promising finding, since the participants did not mention behavioral skill training, the effectiveness of which has been demonstrated in studies where comprehensive sexuality education content was instructed to individuals with ASD (Egemo-Helm et al., 2007; Oğur, 2023), teaching with cool versus not cool instruction (Olcay-Gul and Vuran, 2019), critical thinking instruction (Dupas, 2011), and only half of the participants, who stated that they instructed comprehensive sexuality education, mentioned the methods and techniques they employed, demonstrated the gap between theory and practice as frequently emphasized in the literature (Bayrak-Özmutlu, 2022; Korthagen 2010, 2011). This finding suggested that the participants did not employ scientific methods and techniques in instruction, and they even did not have knowledge on evidence-based practice. To eliminate this problem, it could be recommended to encourage the use of scientific methods and techniques in the instruction of comprehensive sexuality content.

After the participants were informed about comprehensive sexuality education content and related topics, and asked whether they instructed comprehensive sexuailty education, the participants, who stated that they did not instruct sexuality content in the previous open-ended question, mentioned that they instructed related content. Furthermore, it was determined that there was an increase in the diversity of methods and techniques that the participants employed in the instruction. After they were informed about comprehensive sexuality education content, there was an increase in the number of participants who stated that they instructed content such as relationships, values, rights, culture and sexuality, gender awareness, violence and safety, and human body and development; however, the participants did not have adequate knowledge on comprehensive sexuality education content.

In the study, it was observed that the participants, who reported that they instructed comprehensive sexuality content were experienced in working with individuals with various ASD of all age groups. It was observed that more studies were conducted with the 12-15 age group in the literature. Since this age group includes adolescents, it could be expected that comprehensive sexuality education should be prioritized for the individuals in this age group. In the UNESCO guide (2018), the comprehensive sexuailty education content was organized based on the age groups employed in the present study, and

it was stated that the quality and quantity of the content should continue to increase for each age group, starting from the 5-18+ age group, in other words, the content should be instructed sequentially. Thus, since the knowledge that would be instructed in one age group would support the topics that would be instructed in the next age group, improving the effectiveness of comprehensive sexuailty education, the exclusion of certain content, or inclusion of only limited topics by the participants in certain age groups should be taken into consideration. It was determined that the number of participants who instructed sexuality to individuals with auditory, visual, or physical disabilities and ASD was quite low (range = 4.08% - 10%), and most participants instructed sexuality to individuals with mild intellectual disability and ASD (range = 20% - 40%) and individuals with moderate-severe intellectual disability and ASD (range = 12.12% - 20.54%). This finding was consistent with the findings reported by previous studies that comprehensive sexuality education could be instructed to individuals with mild intellectual disabilities (Ogur et al., 2023). However, the limitation of the instructed sexuality content was similar to the previous study findings (Stokes & Kaur, 2005) indicating that individuals with ASD were considered sexually passive individuals. Since it has been considered that individuals with ASD did not need comprehensive sexuality education and these individuals has limited access to required knowledge, it could be suggested that their access to comprehensive sexuality education is a primary need. Further research that would contribute to the full understanding of comprehensive sexuality education and its content, reduce existing stereotypes, and reveal the significance of the inclusion of individuals with special needs, including individuals with ASD, in comprehensive sexuality education.

It was determined in the study that the methods and techniques employed by the participants in the instruction of sexuality content were similar to the methods and techniques reported in the literature, and the preferred method was conventional instruction (range = 8.10% - 33.33%), and modeling, direct instruction, errorless teaching and video model methods were also employed. Since the conventional instruction is the first stage in all methods, it was expected to be the most employed method in sexuality instruction. However, it was emphasized in the literature that, especially due to the advances in information and communication technologies, instruction should prioritize acquisition of skills and practice rather than providing information, leading to more active learning and ensuring active participation of individuals with ASD in education (Gatheridge et al., 2004; Himle, Miltenberger, Flessner and Gatheridge, 2004; Kelso, Miltenberger, Waters, Egemo-Helm and Bagne, 2007). Thus, the neglect of methods that would ensure active participation of individuals with ASD suggested that they only instructed the knowledge dimension of comprehensive sexuality education. Furthermore, it should also be emphasized that technology adaptation was quite limited in the instruction of the individuals with ASD, who are known to have high interest in technology (Mazurek, Engelhardt and Clark 2015; van Schalkwyk, Ortiz-Lopez, Volkmar and Silverman, 2016). Non-adoption of methods and techniques that support critical thinking skills should also be noted since previous research emphasized that the use of these methods was critical in the instruction of sexuality (Haberland and Rogow, 2015). Finally, it should be mentioned that parents were not adequately involved in sexuality education (range = 2.32% - 7.14%). Parental collaboration and participation is extremely important for individuals with ASD, similar to all individuals with special needs, as well as parent-mediated interventions in certain topics (e.g., changing pad, tolerance, respect, social impact on gender roles) (Shepherd, Goedeke, Landon and Meads, 2020). Therefore, further studies should be conducted to determine effective methods and techniques in comprehensive sexuality instruction to ensure parental participation.

When participants were asked to assess their competence in comprehensive sexuality instruction, it was observed that participants considered themselves moderately competent (range = 33.33% - 61.53%) or competent (range = 14.28% - 40.74%) in almost all topics. Furthermore, when they were asked whether they had participated in professional development activities on comprehensive sexuality education, it was determined that the majority of participants attended at least one comprehensive sexuality education activity (range = 31.57% - 75%). It was thought-provoking that although the participants attended professional development activities on all comprehensive sexuality content, they mentioned only a limited number of topics, especially when the question was asked before they were informed about these topics by the author. It could be possible that the professional development activities that the participants attended focused on limited content, and the teachers had

reduced comprehensive sexuality education to certain topics such as reproduction, menstruation, developmental periods, masturbation, and sexual abuse. On the other hand, more than half of the participants (f = 9; 69.23%), who stated that they instructed sexuality and sexual behavior, stated that they attended professional development activities on sexuality and sexual behavior, and they considered their instruction moderately effective (f = 6; 46.15) or effective (f = 6; 46.15) when compared to the instruction of other content. It could be suggested that the quality of the instruction could improve when they could participate in future activities. Furthermore, it was a promising finding that most participants (range = 50% - 85.71%) reported that they needed to participate in professional development activities on comprehensive sexuality education, and it was surprising that a smaller number of teachers (range = 14.28% - 50%) reported that they did not need to participate in any activity. It was surprising that although the participants had limited knowledge on comprehensive sexuality education and related methods and techniques, they reported that they did not need training. Thus, it could be suggested that professional development activities should be planned based on the literature and cover all content included in the International Technical Guidance on Sexuality education (ITGSE).

Specific strengths of the study differentiate it from other studies. Although there are studies in the literature mainly on teachers working with individuals with intellectual disabilities, this study was conducted with teachers working with individuals with ASD. Unlike other studies, the holistic approach to teacher views and experiences on comprehensive sexuailty education, along with the fact that data were collected from teachers employed in various regions of Turkey—since sexuailty education could be affected by cultural factors—were among the strengths of this research. The study also has certain limitations. The present study is limited by the views of 200 special education teachers on the instruction of comprehensive sexuailty education to individuals with ASD. Furthermore, the study data were collected with a survey form developed by the authors; thus, the study data were self-reported. Self-reported data only reveals participant perceptions rather than objective facts (Mills and Gay, 2016). Thus, future research should be conducted with different research models, data collection instruments such as observations (e.g., classroom observations, parental education, etc.), and document reviews (e.g., individualized syllabi or plans developed by participants) to obtain objective findings. Finally, the data were collected on the comprehensive sexuailty education content that the participants instructed; however, data were not collected on the topics that they instructed. This also could be considered a limitation. Future studies could collect participant views on the instructed topics.

Acknowledgments

Copyrights: The works published in the e-Kafkas Journal of Educational Research are licensed under a Creative Commons Attribution-Non-commercial 4.0 International License.

Ethics statement: All procedures performed in this study involving human participants were in accordance with the ethical standarts of the institutional and national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Written informed consent was obtained from the volunteers.

Author Contributions: Conceptualization, 1st author and 2nd author; methodology, 1st author and 2nd author; validation, 1st author and 2nd author; analysis, 1st author and 2nd author; writing; 1st author and 2nd author; review and editing, 1st author and 2nd author

Funding: No funding was received for conducting this study.

Institutional Review Board Statement: The research was reviewed by the Hacettepe University at its meeting held on 11/10/2023 and was found ethically appropriate. The number of the document is E-66777842-300-00003133621.

Data Availability Statement: Data generated or analyzed during this study should be available from the authors on request.

Conflict of Interest: The authors declare that they have no conflict of interest.

References

American Psychiatric Association. (2013). *Diagnostic and Statistical Manual of Mental Disorders* (5th ed.). Washington, DC: American Psychiatric Association.

Akdemir, B. (2024). Opinions of special education teachers on inappropriate sexual behaviors in adolescents with intellectual disabilities. *International Journal of Developmental Disabilities*, *70*(4), 641-650. doi.org/10.1080/20473869.2022.2129127

Ariyanti, T. D., & Royanto, L. R. (2017, September). The effectiveness of social stories and video modeling in improving self-care skills in female adolescents with mild intellectual disabilities during menstrual periods. In *1st International Conference on Intervention and Applied Psychology (ICIAP 2017)*(pp. 189-199). Atlantis Press. doi.org/10.2991/iciap-17.2018.16

Ballan, M. S., & Freyer, M. B. (2017). Autism spectrum disorder, adolescence, and sex education: Suggested interventions for mental health professionals. *Sexuality and Disability, 35*(2), 261-273. doi.org/10.1007/s11195- 017-9477-9

Bollman, J. R., Davis, P. K., & Zarcone, J. (2009). Teaching Women With Intellectual Disabilities to Identify and Report Inappropriate Staff-To-Resident Interactions. *Journal of Applied Behavior Analysis*, *42*(4), 813-817, doi.org/10.1901/jaba.2009.42-813

Bourke, A., Cullen, C., & Maunsell, C. (2024). Preparing to teach relationships and sexuality education: student teachers' perceived knowledge and attitudes. *Sex Education*, 1-18. doi.org/10.1080/14681811.2024.2337860

Brown, R. D., & Pirtle, T. (2008). Beliefs of professional and family caregivers about the sexuality of individuals with intellectual disabilities: examining beliefs using a Q-methodology approach. *Sex Educatio, 8* (1), 59-75. doi.org/10.1080/14681810701811829

Brown, M., Linden, M., Marsh, L., Truesdale, M., Sheerin, F., & McCormick, F. (2024, May). The experiences of young people with intellectual disability, parents and professionals in relationships and sexuality education programmes: findings from a qualitative study. In *Healthcare* (Vol. 12, No. 11, p. 1105). MDPI. doi.org/10.3390/healthcare12111105

Bruno, V., Baiocco, R., & Pistella, J. (2024). Teachers' Attitudes and Opinions Toward Sexuality Education in School: A Systematic Review of Secondary and High School Teachers. American *Journal of Sexuality Education, 1*-39. doi.org/10.1080/15546128.2024.2353708

Christian, L., Stinson, J., & Dotson, L. A. (2001). Staff values regarding the sexual expression of women with developmental disabilities. *Sexuality and Disability*, *19*, 283-291. doi:10.1023/a:1017957409670

Constantine, N. A., Jerman, P., Berglas, N. F., Angulo-Olaiz, F., Chou, C. P., & Rohrbach, L. A. (2015). Short-term effects of a rights-based sex education curriculum for high-school students: a cluster-randomized trial. *BMC Public Health*, *15*(1), 1-13. doi:10.1186/s12889-015-1625-5

CRPD. (2006). Convention on the rights of persons with disabilities. Retrieved from https://www.un.org/development/desa/disabilities/convention-on-the-rights-opersonswith-disabilities/convention-on-the-rights-of-persons-with-disabilities-2.html

Daymon, C., & Holloway, I. (2011) *Qualitative research methods in public relations and marketing communications*, 2nd ed. . Abingdon , UK : Routledge .

Dupas, P. (2011). Do teenagers respond to HIV risk information? Evidence from a field experiment in Kenya. *American Economic Journal: Applied Economics*, *3*(1), 1-34.

Egemo-Helm, K. R., Miltenberger, R. G., Knudson, P., Finstrom, N., Jostad, C., & Johnson, B. (2007). An evaluation of in situ training to teach sexual abuse prevention skills to women with mental retardation. Behavioral Interventions: *Theory & Practice in Residential & Community-Based Clinical Programs, 22*(2), 99-119. doi.org/10.1002/bin.234

Flynn, S. D., & Lo, Y. Y. (2016). Teacher implementation of trial-based functional analysis and differential reinforcement of alternative behavior for students with challenging behavior. Journal of Behavioral Education, 25, 1-31. doi.org/10.1007/s10864-015-9231-2

Fonner, V. A., Armstrong, K. S., Kennedy, C. E., O'Reilly, K. R., & Sweat, M. D. (2014). School based sex education and HIV prevention in low-and middle-income countries: a systematic review and meta-analysis. *Plos One*, *9*(3), e89692. doi:10.1371/journal.pone.0089692

Frawley, P., & Wilson, N. J. (2016). Young people with intellectual disability talking about sex education and information. *Sexuality and Disability*, *34*, 469-484. doi:10.1007/s11195-016-9460-x

Fu, W., Huang, L., Liu, R., & Zhang, Y. (2024). Special education teachers' attitudes towards teaching sex education to students with intellectual disabilities in Malaysia. *International Journal of Developmental Disabilities*, 1-12. doi.org/10.1080/20473869.2024.2340188

Gardner, F., Montgomery, P., & Knerr, W. (2016). Transporting evidence-based parenting programs for child problem behavior (age 3–10) between countries: Systematic review and meta-analysis. *Journal of Clinical Child & Adolescent Psychology, 45*(6), 749-762. doi.org/10.1080/15374416.2015.1015134

Gatheridge, B. J., Miltenberger, R. G., Huneke, D. F., Satterlund, M. J., Mattern, A. R., Johnson, B. M., & Flessner, C. A. (2004). Comparison of two programs to teach firearm injury prevention skills to 6-and 7-year-old children. *Pediatrics*, *114*(3), e294-e299. doi.org/10.1542/peds.2003-0635-L

Gill, M. (2012). Sex can wait, masturbate: The politics of masturbation training. *Sexualities*, *15*(3-4), 472-493. doi.org/10.1177/1363460712439

Girgin-Büyükbayraktar, Ç., Konuk-Er, R., & Kesici, S. (2017). According to the Opinions of Teachers of Individuals with Intellectual Disabilities: What Are the Sexual Problems of Students with Special Education Needs? How Should Sexual Education Be Provided for Them? *Journal of Education and Practice*, *8*(7), 107-115.

Groce, N. E., Rohleder, P., Eide, A. H., MacLachlan, M., Mall, S., & Swartz, L. (2013). HIV issues and people with disabilities: a review and agenda for research. *Social Science & Medicine 77*, 31-40. doi.org/10.1016/j.socscimed.2012.10.024

Haberland, N., & Rogow, D. (2015). Sex education: Emerging trends in evidence and practice. Journal of Adolescent Health, *56*(1), S15-S21. doi.org/10.1016/j.jadohealth.2014.08.013

Hamilton, C. A. (2009). 'Now I'd like to sleep with Rachael'–researching sexuality support in a service agency group home. *Disability & Society*, *24*(3), 303-315. doi.org/10.1080/09687590902789461

Hannah, L. A., & Stagg, S. D. (2016). Experiences of sex education and sexual awareness in young adults with autism spectrum disorder. *Journal of Autism and Developmental Disorders, 46*(12), 3678-3687. doi.org/10.1007/ s10803-016-2906-2

Hayashi, M., Arakida, M., & Ohashi, K. (2011). The effectiveness of a sex education program facilitating social skills for people with intellectual disability in Japan. *Journal of Intellectual and Developmental Disability*, *36*(1), 11-19. doi.org/10.3109/13668250.2010.549463

Himle, M. B., Miltenberger, R. G., Flessner, C., & Gatheridge, B. (2004). Teaching safety skills to children to prevent gun play. *Journal of Applied Behavior Analysis, 37*(1), 1-9. doi.org/10.1901/jaba.2004.37-1

Hocaoğlu N. & Akkaş Baysal E. (2019). *Eğitimde bilimsel araştırma yöntemleri*, 1st. edn, Ankara: Pegem Akademi.

Jeyachandran, V., Ranjelin, S. D., & Kumar, A. (2024). Sexual health and safety of adolescents with intellectual disability: Challenges and concerns among special educators in India. *Journal of Intellectual Disabilities*, *28*(1), 104-117. doi.org/10.1177/17446295221136

Johnston, M. (2010). Teaching sexual abuse prevention skills to two children with intellectual disabilities through game play. hdl.handle.net/10464/3065

Johnson, R. B., & Christensen, L. (2014). *Educational research: Quantitative, qualitative, and mixed approaches* (5th ed.). Thousand Oaks, Calif.: SAGE Publications. ISBN 978-1-4129-7828-6).

Ionescu, C. E., Rusu, A. S., & Costea-Bărluţiu, C. (2019). Attitudes of Special Education teachers towards sexual education of students with intellectual disabilities: Effects of religiosity and professional experiences. *Educatia 21*, (17), 102-111.

Kaeser, F., & O'Neill, J. (1987). Task analyzed masturbation instruction for a profoundly mentally retarded adult male: A data based case study. *Sexuality and Disability*, *8*, 17-24. doi:10.1007/bf01112431

Kelso, P. D., Miltenberger, R. G., Waters, M. A., Egemo-Helm, K., & Bagne, A. G. (2007). Teaching skills to second and third grade children to prevent gun play: A comparison of

procedures. *Education and Treatment of Children, 30*(3), 29-48. doi.org/10.1353/etc.2007.0016

Kirby, D., Laris, B. A., & Rolleri, L. (2006). The impact of sex and HIV education programs in schools and communities on sexual behaviors among young adults. *Research Triangle Park, NC: Family Health International, YouthNet Program*.

Korthagen, F. A. J. (2010). The relationship between theory and practice in teacher education. *International Encyclopedia of Education*, *7*(669-675).

Korthagen, F. A. (2011). Making teacher education relevant for practice: The pedagogy of realistic teacher education. *Orbis Scholae*, *5*(2), 31-50.

Kurulu, Y. (2018). Öğretmen yetiştirme lisans programları. Ankara: Ankara Üniversitesi Basımevi.

Leijten, P., Melendez-Torres, G. J., Knerr, W., & Gardner, F. (2016). Transported versus homegrown parenting interventions for reducing disruptive child behavior: A multilevel meta-regression study. *Journal of the American Academy of Child & Adolescent Psychiatry, 55*(7), 610-617. doi.org/10.1016/j.jaac.2016.05.003

Lindsay, W. R., Bellshaw, E., Culross, G., Staines, C., & Michie, A. (1992). Increases in knowledge following a course of sex education for people with intellectual disabilities. *Journal of Intellectual Disability Research*, *36*(6), 531-539. doi.org/10.1111/j.1365-2788.1992.tb00571.x

Mackin, M. L., Loew, N., Gonzalez, A., Tykol, H., & Christensen, T. (2016). Parent perceptions of sexual education needs for their children with autism. *Journal of Pediatric Nursing, 31*(6), 608-618. doi.org/10.1016/j.pedn.2016.07.003

Maia, A. C. B., Reis-Yamautı, V. L. D., Schıavo, R. D. A., Capellini, V. L. M. F., & Valle, T. G. M. D. (2015). Teacher opinions on sexuality and Sexual Education of students with intelectual disability. *Estudos de Psicologia (Campinas)*, *32*, 427-435. doi.org/10.1590/0103166X2015000300008

Mann, L. E., & Travers, J. C. (2020). A systematic review of interventions to address inappropriate masturbation for individuals with autism spectrum disorder or other developmental disabilities. *Review Journal of Autism and Developmental Disorders*, *7*, 205-218. doi:10.1007/s40489-019-00192-9_

Mattson, J. M. G., Roth, M., & Sevlever, M. (2016). Personal hygiene. *Behavioral Health Promotion and Intervention In Intellectual and Developmental Disabilities, 43*-72. doi:10.1007/978-3-319-27297-9_3

Mazurek, M. O., Engelhardt, C. R., & Clark, K. E. (2015). Video games from the perspective of adults with autism spectrum disorder. *Computers in Human Behavior, 51*, 122-130. doi.org/10.1016/j.chb.2015.04.062

McCabe, M. P. (1999). Sexual knowledge, experience and feelings among people with disability. *Sexuality and Disability*, *17*, 157-170. doi:10.1023/a:1021476418440

Mills, G. E., & Gay, L. R. (2016). Educational research: Competencies for analysis and applications. Pearson.

Oğur, Ç., (2023). *Otizm spektrum bozukluğu olan bireylere çevrim içi cinsel istismarla başa çıkmada davranışsal beceri öğretiminin etkililiği* [Doctoral dissertation, Hacettepe University] National Thesis Center. https://tez.yok.gov.tr/UlusalTezMerkezi/tezSorguSonucYeni.jsp

Ogur, C., Olcay, S., & Baloglu, M. (2023). An International Study: Teachers' Opinions About Individuals With Developmental Disabilities Regarding Sex education. *Sexuality and Disability, 41*(4), 739-756.

Olcay-Gul, S., & Vuran, S. (2019). Effectiveness of teaching social skills to individuals with autism spectrum disorders using cool versus not cool. *Education and Training in Autism and Developmental Disabilities*, *54*(2), 132-146.

Özmutlu, E. B. (2022). Kuram ve Uygulama Arasındaki İlişki: Öğretmen Adaylarının İnançları Temelinde Bir İnceleme. *Journal of Qualitative Research in Education*, (30).

PAHO & WHO. (2000). Promotion of sexual health: recommendations for action. Guatemala. Retrieved from https://iris.paho.org/bitstream/handle/10665.2/42416/promotionsexualhealth.pdf?sequence=1&isAllowed=y

Patterson, T., & Scott, C. (2013). Behavioral management of inappropriate masturbation in an 8-year-old girl. *Child & Family Behavior Therapy*, *35*(3), 256-263. doi.org/10.1080/07317107.2013.818907

Pecora, L. A., Hancock, G. I., Hooley, M., Demmer, D. H., Attwood, T., Mesibov, G. B., & Stokes, M. A. (2020). Gender identity, sexual orientation and adverse sexual experiences in autistic females. *Molecular Autism*, *11*(1), 1-16.

Ray, F., Marks, C., & Bray-Garretson, H. (2004). Challenges to treating adolescents with Asperger's Syndrome who are sexually abusive. *Sexual Addiction & Compulsivity*, *11*(4), 265-285. doi.org/10.1080/10720160490900614

Richman, G. S., Reiss, M. L., Bauman, K. E., & Bailey, J. S. (1984). Teaching menstrual care to mentally retarded women: Acquisition, generalization, and maintenance. *Journal of Applied Behavior Analysis*, *17*(4), 441-451. doi.org/10.1901/jaba.1984.17-441

Rodriguez, M. (1995). Teaching our teachers to teach: a SIECUS study on training and preparation for HIV/AIDS prevention and sex education. *Siecus Report, 28*(2).

Rohleder, P., & Swartz, L. (2009). Providing sex education to persons with learning disabilities in the era of HIV/AIDS: Tensions between discourses of human rights and restriction. *Journal of Health Psychology*, *14*(4), 601-610. doi.org/10.1177/135910530910357

Rohrbach, L. A., Berglas, N. F., Jerman, P., Angulo-Olaiz, F., Chou, C. P., & Constantine, N. A. (2015). A rights-based sex education curriculum for adolescents: 1-year outcomes from a cluster-randomized trial. *Journal of Adolescent Health, 57*(4), 399-406. doi.org/10.1016/j.jadohealth.2015.07.004

Sevlever, M., Roth, M. E., & Gillis, J. M. (2013). Sexual abuse and offending in autism spectrum disorders. *Sexuality and Disability, 31*, 189-200.

Shepherd, J., Kavanagh, J., Picot, J., Cooper, K., Harden, A., Barnett-Page, E., ... & Price, A. (2010). The effectiveness and cost-effectiveness of behavioural interventions for the prevention of sexually transmitted infections in young people aged 13-19: a systematic review and economic evaluation. Health technology assessment (Winchester, England), 14(7), 1-206. doi.org/10.3310/hta14070

Shepherd, D., Goedeke, S., Landon, J., & Meads, J. (2020). The types and functions of social supports used by parents caring for a child with autism spectrum disorder. *Journal of Autism and Developmental Disorders, 50*, 1337-1352.

SIECUS.: National Guidelines Task Force (2004). Retrieved from https://healtheducationresources.unesco.org/organizations/national-guidelines-task-force.

Stankova, T., & Trajkovski, V. (2021). Sexual Education of Persons with Autistic Spectrum Disorders: Use of the Technique:'Social Stories. *Sexuality and Disability*, *39*(2), 377-393. doi:10.1007/s11195-020-09655

Stokes, M. A., & Kaur, A. (2005). High-functioning autism and sexuality: A parental perspective. *Autism, 9*(3), 266-289. doi.org/10.1177/136236130505325

Strnadová, I., Loblinzk, J., & Danker, J. (2022). Sex education for students with an intellectual disability: teachers' experiences and perspectives. *Social Sciences*, *11*(7), 302. doi.org/10.3390/socsci11070302

Swango-Wilson, A. (2008). Caregiver perception of sexual behaviors of individuals with intellectual disabilities. *Sexuality and Disability*, *26*, 75-81. doi:10.1007/s11195-008-9071-2

Şencan, H., (2005). Sosyal ve davranışsal ölçümlerde güvenilirlik ve geçerlilik. Ankara: Seçkin

Büyüköztürk, Ş., (2020). *Eğitimde bilimsel araştırma yöntemleri*, 29. edn, Ankara: Pegem Akademi

Taherdoost, H. (2021). Data collection methods and tools for research; a step-by-step guide to choose data collection technique for academic and business research projects. *International Journal of Academic Research in Management (IJARM)*, *10*(1), 10-38.

Travers, J., & Tincani, M. (2010). Sex education for individuals with autism spectrum disorders: Critical issues and decision making guidelines. *Education and Training in Autism and Developmental Disabilities*, 284-293.

UNESCO. (2009). International Technical Guidance on Sex education: An Evidence-informed approach for schools, teachers and health educators. Paris, UNESCO. Retrieved from http://unesdoc.unesco. org/images/0018/001832/183281e.pdf

UNESCO. (2016). Meeting Notes of the consultation on updating International Technical Guidance on Sex education (ITGSE). Paris, October 2016. (Unpublished).

UNESCO, UNAIDS, UNFPA, UNICEF, UN Women, WHO. (2018). International Technical Guidance on Sex education: An Evidence-informed Approach. Paris: UNESCO.

van Schalkwyk, G. I., Ortiz-Lopez, M., Volkmar, F. R., & Silverman, W. K. (2016). 1.2 Social Media Use Improves Friendship Quality In Adolescents With Autism Spectrum Disorder. *Journal of the American Academy of Child & Adolescent Psychiatry, 10*(55), S100. (pp. S100-S100).

Veazey, S. E., Valentino, A. L., Low, A. I., McElroy, A. R., & LeBlanc, L. A. (2016). Teaching feminine hygiene skills to young females with autism spectrum disorder and intellectual disability. *Behavior Analysis in Practice*, *9*, 184-189. doi:10.1007/s40617-015-0065-0

Walsh, A. (2000). Improve and care: responding to inappropriate masturbation in people with severe intellectual disabilities. *Sexuality and Disability*, *18*(1), 27-39. doi:10.1023/a:1005473611224

Wells, J., Clark, K. D., & Sarno, K. (2012). A computer-based interactive multimedia program to reduce HIV transmission for women with intellectual disability. *Journal of Intellectual Disability Research*, *56*(4), 371-381. doi.org/10.1111/j.1365-2788.2011.01482.x

WHO. (2006). Defining Sexual Health—Report of a Technical Consultation on Sexual Health 28-31 January 2002, Geneva. Retrieved from https://www.scirp.org/reference/ReferencesPapers?ReferenceID=1998000