



RESEARCH ARTICLE

## Sexual Developmental Characteristics of Intellectually Disabled Adolescents in Türkiye: A Cross-Sectional Analysis

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### Abstract

**Purpose:** This study aimed to examine the sexual development characteristics of adolescents with intellectual disability in terms of several variables. The data were collected with the Personal Information Form and the Sexual Development Characteristics Scale of Children with Adolescent Mental Disabilities. **Method:** Independent samples tests, one-way ANOVA tests, and Bonferroni post hoc analyses were conducted to compare the descriptive characteristics of the adolescents and parents with their scale scores. Multiple linear regression analysis was employed to examine the relationships between the dependent and independent variables. Significant differences were identified between certain subdimensions of the scale and the variables. **Findings:** The sexual arousal subdimension of the scale accounts for 12% of the variance in the dependent variable, the knowledge about physical development subdimension accounts for 10% of the variance in the dependent variable, the sexual satisfaction subdimension accounts for 6% of the variance in the dependent variable, and the sexual self-care subdimension accounts for 11% of the variance in the dependent variable. This difference was explained by the independent variables ( $R^2$  adjusted= .12, .10, .06, .11, respectively). **Conclusion:** In this study, it was found that the sexual development characteristics of adolescents with intellectual disability were affected by the educational status of the mother, the place of residence of the family, the help of the spouse in childcare, the gender of the child, the verbal communication status of the child, the degree of inadequacy of the child, and the ability to meet the personal needs of the child.

### Keywords

Adolescence, Intellectual Disability, Sexual Development, Disability

## INTRODUCTION

Adapting to the physiological and psychological changes of adolescence can be challenging for any young person. For adolescents with intellectual disabilities, these changes can present even greater difficulties (Kozan & Hamarta, 2019). Adolescence, which occurs between the ages of 10 and 19, is the transition from childhood to adulthood. This phase is a distinct and crucial stage of human development, essential for laying the groundwork for future health. During adolescence, individuals undergo significant physical, cognitive, and psychosocial changes (WHO, 2023). Since the

cognitive development process of adolescents with intellectual disability, whose cognitive development rates are slower than those of their peers, cannot be completed in adolescence, most children cannot develop abstract thinking skills (Madi, 2016). This situation prevents them from participating sufficiently in social life. For this reason, they do not have the opportunity to obtain information from their typically developing peers, and they are less likely to observe such information. As a result, they cannot exhibit appropriate social and sexual behaviors (Kijak, 2011). Therefore, it is crucial to closely observe and assess the sexual development characteristics and any related issues

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in children throughout various stages of their development (Madi, 2016).

Studies examining the sexual development and sexual behavior characteristics of adolescents with intellectual disability have revealed that these adolescents experience more severe sexual behavior problems and display inappropriate sexual behaviors more often than their healthy peers (Akrami & Davudi, 2014; Goli et al., 2020; Hartini et al., 2021). A recent study revealed that a significant proportion of adolescents with intellectual disability have sexual behavior problems. The results showed that among adolescents with intellectual disability, 35.1% have any sexual behavior problems, and the frequency of displaying any inappropriate sexual behavior in society is as high as 27% (Karaca & Çiçek, 2022). Research indicates that adolescents with intellectual disabilities are at high risk for sexual behavior problems due to insufficient privacy, lack of awareness of social and ethical rules, and the imbalance between their emotional and cognitive development and sexual development. Additionally, caregivers' reluctance to address sexual health contributes to this issue, and there is limited knowledge on the topic (Hartini et al., 2021; Eastgate, 2011; Holland-Hall & Quint, 2017; Kassa et al., 2016). However, parents must have sufficient knowledge about sexual development to understand their children's sexual development characteristics and attitudes toward sexuality. The findings of this study suggest that determining the sexual development characteristics of adolescents with intellectual disability will guide the prevention of inappropriate sexual attitudes and behaviors and contribute to the planning of sex education programs at the stage of creating content. In this context, this study aimed to examine the sexual development characteristics of children with intellectual disability in adolescence in terms of several variables.

## MATERIALS AND METHODS

### *Participants and Setting*

This cross-sectional study was conducted in Türkiye with mothers of adolescents aged 10 to 18 years with intellectual disabilities. Participants attended from the city center in northeastern Türkiye. The study population consisted of adolescents with intellectual disabilities attending Special Education Practice Schools, Special

Education Vocational Schools, and Special Education and Rehabilitation Centers in Türkiye between May and June 2023, along with their mothers. Mothers who met the following criteria were included in the study: they were accessible through a whole-count method (not using sample selection), had no communication barriers, and agreed to participate.

The study population consisted of 90 people. The study ultimately included 73 participants, representing approximately 82% of the eligible population within the specified criteria.

### *Procedure*

Prior to starting the study, approvals were secured from the ethics committee and relevant institutional authorities. Participants were informed about the study following the guidelines of the Declaration of Helsinki, and their consent was obtained through informed consent forms. Only volunteer participants were included. Additionally, institutional permission was obtained from the Provincial Directorate of National Education before the research began. The researcher provided information about the study and collected written or verbal informed consent from mothers who volunteered and had no communication barriers. These mothers were then included in the study. Data were collected using the Personal Information Form and the Sexual Development Characteristics of Children with Intellectual Disability Adolescents Scale, administered face-to-face by the researcher. Completing these forms took approximately 15 minutes per participant.

### *Measures*

#### *Personal Information Form*

He questioned the mothers' sociodemographic characteristics, such as age, education, employment, income status, family type, number of children, and information, such as age, gender, comorbidity, and dependency/independence, in the daily activities of the adolescents with intellectual disability.

#### *The Sexual Development Characteristics Scale of Children with Intellectual Disability Adolescents*

Gürbüz and Eratay (2020) developed the scale. The scale, which is a five-point Likert-type scale (1 "Totally Agree," 2 "Agree," 3 "I am undecided," 4 "I do not agree" and 5 "I do not agree at all"), consists of a total of 36 items. The Cronbach's alpha internal consistency coefficients of the scale ranged from 0.712 to 0.905. The sexual development characteristics scale for adolescents

with intellectual disabilities comprises nine dimensions, each represented by specific subdimensions. The internal consistency of these subdimensions was assessed using Cronbach's alpha values, indicating the reliability of each subdimension within the scale:

- Sexual arousal (6 items): Cronbach's alpha = 0.865
- Need for information (6 items): Cronbach's alpha = 0.850
- Privacy and social trust (4 items): Cronbach's alpha = 0.777
- Knowledge about physical development (4 items): Cronbach's alpha = 0.768
- Sexual harassment (3 items): Cronbach's alpha = 0.905
- Drive to achieve sexual satisfaction (4 items): Cronbach's alpha = 0.739
- Sharing sexual issues (3 items): Cronbach's alpha = 0.853
- Emotional change (3 items): Cronbach's alpha = 0.791
- Sexual self-care (3 items): Cronbach's alpha = 0.712

The overall Cronbach's alpha reliability coefficient for the entire scale was calculated as 0.850. In the current study, the Cronbach's alpha value for the entire scale was found to be 0.81. Additionally, subdimensional Cronbach's alpha values ranged from 0.70 to 0.89, indicating varying degrees of internal consistency across the different aspects of the scale. These values collectively demonstrate the reliability of the scale in measuring sexual development characteristics among adolescents with intellectual disabilities.

#### **Statistical Analyses**

The statistical analysis was performed using SPSS version 26.0 for Windows (SPSS, Chicago, IL, USA). Normal distribution of the data was assessed based on skewness and kurtosis coefficients falling within the range of -1 to +1 (Hair et al., 2013). Descriptive statistics including number, percentage, mean, and standard deviation (SD) were used to summarize continuous variables. Parametric tests were selected due to the normal distribution of the data. Independent samples t-tests and one-way ANOVA were utilized to compare descriptive characteristics among children and parents based on scale scores. Bonferroni post hoc analysis was employed for detecting specific group differences when comparing more than two groups

with equal variances. Furthermore, multiple linear regression analysis using the enter method was conducted to explore relationships between dependent and independent variables. Statistical significance was set at  $p < 0.001$  and  $p < 0.05$ .

#### **Ethics Approval**

This study was conducted with the approval of the Ethics Committee of Bayburt University with reference number (ACP-2023-164/8). All participants provided voluntary informed consent before participating in the study. The study protocol was conducted in compliance with the principles outlined in the Declaration of Helsinki and other relevant ethical guidelines. We ensured the privacy and confidentiality of the participants' data throughout the study. Any personal identifying information was kept confidential and was only accessible to the research team. Only aggregated and anonymized data were used for analysis and reporting purposes.

## **RESULTS**

Table 1 compares the sociodemographic data and some characteristics of mothers and children with the scale subdimension total score averages. 13.7% of the children included in the study were diagnosed with Down syndrome, 9.6% with learning disabilities, 43.8% with intellectual disabilities, and 27.4% with autism. The score was  $117.73 \pm 16.78$ . The subdimension total scores of the scale are shown in Table 2. There was a significant difference between the full scores of the knowledge about physical development (KPD) subdimension of the scale and the educational status of the mother and the place of residence of the family ( $p < 0.05$ ). There was a significant difference between the total score for the sexual harassment (SH) subdimension and the score for the spouse's help with childcare ( $p < 0.05$ ).

A significant difference was found between the average total score of the sexual satisfaction (SS) subdimension of the scale and between the child's gender and the child's verbal communication status ( $p < 0.05$ ). As a result of the post hoc analysis performed in terms of the child's verbal communication status variable, it was determined that the mean scores of the subdimensions of sexual satisfaction were lower for the children who had difficulty speaking than for the children who did not or could not talk.

**Table 1.** Comparison of mothers' and children's characteristics with average subscale scores (n= 73)

Variables	n (%)	Sexual arousal	Information requirement	Privacy and social trust	Information on physical development	Sexual harassment	Sexual satisfaction	Sharing sexual issues	Emotional change	Sexual self-care
Average age of mothers: 41.52±0.81      Average age of children: 12.01±0.39										
<b>Educational Status</b>										
Primary School	52(71.2)	13.84±6.39 F=689 p=493	21.73±5.54 22.95±5.60 F=849 p=399	11.21±4.25 9.76±4.38 F=1307 p=195	10.80±4.53 8.47±2.63 F=2.203 p=0.031*	12.42±2.65 12.23±2.45 F=645 p=521	16.28±3.83 17.00±4.84 F=664 p=509	12.78±2.42 13.23±2.21 F=734 p=465	8.92±3.71 10.71±3.75 F=1.857 p=0.67	9.17±3.86 9.14±3.59 F=0.031 p=975
Middle School and Above	21(28.8)									
<b>Residential area</b>										
Village and District	23(31.5)	7.08±1.47	22.86±6.63	10.69±4.87	10.60±4.80	12.34±2.83	17.60±4.28	13.73±1.83	9.00±3.93	9.39±4.39
Provincial center	50(68.5)	5.80±0.82 F=096 p=983	21.72±5.01 F=849 p=399	10.84±4.07 F=1307 p=195	9.92±3.92 F=2.734 p=0.008*	12.64±2.48 F=645 p=521	15.98±3.99 F=664 p=509	12.54±2.49 F=734 p=465	9.64±3.75 F=1.857 p=0.67	9.06±3.47 F=0.031 p=975
<b>Husband's help with childcare</b>										
No	26(35.6)	13.82±7.08	22.76±5.24	11.26±5.02	10.00±4.21	11.69±2.93	16.65±4.69	13.03±2.34	9.46±3.74	8.38±3.79
Yes	47(64.4)	14.32±5.80 F=264 p=790	21.70±5.74 F=784 p=436	10.53±3.89 F=697 p=498	10.21±4.23 F=206 p=838	13.02±2.27 F=2.149 p=0.035*	16.40±3.83 F=246 p=807	12.85±2.39 F=523 p=748	9.42±3.86 F=0.039 p=969	9.59±3.71 F=1.323 p=190
<b>Gender</b>										
Girl	31(42.5)	14.16±6.48	22.03±6.07	11.29±5.21	9.48±4.61	12.29±2.90	17.90±3.39	12.96±2.31	9.12±4.08	8.09±3.49
Boy	42(57.5)	14.16±6.04 F=004 p=997	22.11±5.20 F=066 p=948	10.42±3.52 F=796 p=430	10.61±3.85 F=1.144 p=257	12.73±2.33 F=727 p=470	15.45±4.34 F=2.702 p=0.009*	12.88±2.42 F=154 p=878	9.66±3.59 F=596 p=553	9.95±3.79 F=2.133 p=0.036*
<b>Child's Degree of Disability</b>										
Light <sup>1</sup>	34(46.6)	15.47±5.68	22.88±5.67	9.79±4.26	9.00±3.82	12.70±3.04	16.38±4.24	12.70±2.52	9.76±3.74	10.11±3.68
Medium <sup>2</sup>	29(39.7)	13.13±5.64	21.58±5.29	11.34±3.93	10.96±4.15	12.44±2.41	16.24±3.98	12.86±2.38	8.68±3.74	8.96±3.84
Heavy <sup>3</sup>	10(13.7)	12.70±8.74 F=1.454 p=241	20.80±6.05 F=729 p=486	12.60±5.01 F=2.090 p=131	11.60±4.94 F=2.518 p=0.88	12.30±1.25 F=127 p=881	17.60±4.37 F=418 p=660	13.80±1.54 F=839 p=436	10.50±4.08 F=1.085 p=344	6.50±2.50 F=3.933* p=0.024**
<b>Verbal communication status of the child</b>										
Speaks well and is understandable <sup>1</sup>	29(39.7)	14.51±5.88	22.13±5.99	9.86±4.70	9.44±4.07	12.96±2.55	17.41±3.69	13.03±2.62	9.86±4.16	10.13±4.24
Has Difficulty Speaking <sup>2</sup>	34(46.6)	13.76±5.95	22.26±5.42	10.85±3.86	9.91±3.60	12.23±2.71	15.08±4.45	12.70±2.18	8.85±3.20	8.91±3.08
Does not or Cannot Speak <sup>3</sup>	10(13.7)	14.50±8.22 F=130 p=879	21.30±5.10 F=116 p=891	13.30±3.91 F=2.467 p=092	12.90±5.62 F=2.726 p=072	12.40±2.31 F=633 p=534	18.60±2.45 F=4.361* p=0.016**	13.30±2.31 F=297 p=744	10.20±4.58 F=783 p=477	7.20±3.85 F=2.510 p=146
<b>Personal needs of the child</b>										
He/she can meet his personal needs or control his needs. <sup>1</sup>	25(34.2)	14.40±6.53	21.88±5.89	11.12±4.52	9.36±4.46	12.64±3.09	16.84±4.19	12.92±2.84	9.52±3.74	9.92±3.88
Help is provided, but he/she also helps. <sup>2</sup>	34(46.6)	14.05±5.22	22.97±5.12	10.02±3.80	10.35±4.13	12.70±2.40	16.55±4.10	13.14±1.87	9.79±3.87	9.58±3.71
Depends on other people to meet personal needs. <sup>3</sup>	14(19.2)	14.00±8.00	20.28±5.86	12.07±4.98	11.00±3.94	12.00±2.11	15.71±4.28	12.35±2.56	8.42±3.77	6.78±2.83
<b>Statistical Test</b>		F=027 p=975	F=1.190 p=310	F=1.229 p=299	F=763 p=470	F=385 p=682	F=335 p=716	F=548 p=581	F=645 p=528	F=3.78* p=0.027**

\*Independent T test    \*\*One-way ANOVA    <sup>1</sup>Bonferroni=1>3    <sup>2</sup>Bonferroni=0>2    <sup>3</sup>Bonferroni=1>3

**Table 2.** The min and max values of the scale and its subdimensions-total scores

Scale Subdimensions	n	Min	Max	Mean	SD
Sexual arousal	73	6	30	14.16	6.18
Information requirement	73	8	30	22.08	5.55
Privacy and social trust	73	4	20	10.79	4.31
Information on physical development	73	4	20	10.13	4.20
Sexual harassment	73	4	15	12.54	2.59
Sexual satisfaction	73	6	20	16.49	4.13
Sharing sexual issues	73	6	15	12.91	2.36
Emotional change	73	3	15	9.43	3.79
Sexual self-care	73	3	15	9.16	3.76
Sexual development scale total	73	74	156	117.73	16.78

SD: Standard deviation

The score was  $117.73 \pm 16.78$ . The subdimension total scores of the scale are shown in Table 2.

**Table 3.** Multiple linear regression analysis model of scale subdimensions according to several variables

Scale subdimensions	Variables	95,0 CI							
		B	SE	$\beta$	t	p	Lower	Upper	Model fit
Sexual arousal	(Constant)	24.811	3.771	-	6.580	.000	17.289	32.333	<b>Adj. R<sup>2</sup> = 0.12</b> <b>F = 4.323</b>
	Gender	.021	1.388	.002	.015	.988	-2.748	2.790	
	Child's Degree of Disability	-1.706	.973	-.195	-1.753	.084	-3.647	.236	
	Sexual development education	-4.647	1.466	-.351	-3.171	<b>.002</b>	-7.571	-1.723	
Information on physical development	(Constant)	9.185	2.712	-	3.387	.001	3.773	14.596	<b>Adj. R<sup>2</sup> = 0.10</b> <b>F = 3.020</b>
	Educational Status	-2.762	1.053	-.300	-2.622	<b>.011</b>	-4.863	-.660	
	Husband's help with childcare	.035	.989	.004	.036	.972	-1.938	2.008	
	Gender	.754	.965	.089	.781	.437	-1.171	2.679	
Sexual satisfaction	Diagnosis of the child's illness	1.083	.448	.277	2.416	<b>.018</b>	.189	1.977	<b>Adj. R<sup>2</sup> = 0.06</b> <b>F = 3.461</b>
	(Constant)	20.962	2.046	-	10.246	.000	16.882	25.043	
	Gender	-2.488	.950	-.300	-2.620	<b>.011</b>	-4.381	-.594	
	Verbal communication status of the child	-.316	.687	-.053	-.460	.647	-1.687	1.054	
Sexual self-care	(Constant)	9.161	1.808	-	5.068	.000	5.556	12.767	<b>Adj. R<sup>2</sup> = 0.11</b> <b>F = 5.607</b>
	Gender	1.588	.846	.210	1.877	.065	-.099	3.275	
	Child's Degree of Disability	-1.495	.594	-.281	-2.515	<b>.014</b>	-2.681	-.309	

Adj. R<sup>2</sup>: Adjusted R square; B: Partial regression coefficient;  $\beta$ : Standard partial regression coefficient; 95% CI: 95% confidence interval

In line with the literature, the relationships between several maternal and child variables and the subdimensions of the scale of sexual development characteristics of adolescents were analyzed using a multiple linear regression model (Table 3). In the analysis of some variables of mothers and children, there was a significant model in the evaluation of goodness of fit (F/p) regression coefficients (R/R<sup>2</sup>) (p<0.05). It was determined that 12% of the variance in the dependent variable of the

sexual arousal (SA) subdimension of the scale was explained by the independent variables (R<sup>2</sup> adjusted=.12), and it was a statistically significant negative predictor of the child's sexual development education status (p<0.05). Ten percent of the variance in the KPD subdimension of the scale was explained by the independent variables (R<sup>2</sup> adjusted=.10). Moreover, the education level of the mother was a statistically significant negative predictor, while the child's education level was a

positive predictor ( $p < 0.05$ ). Six percent of the variance in the SS subdimension of the scale was explained by the independent variables ( $R^2$  adjusted = .06), and the gender of the child was a statistically significant negative predictor ( $p < 0.05$ ). Eleven percent of the variance in the dependent variable of the SSC subdimension of the scale was explained by the independent variables ( $R^2$  adjusted = .11), and it was a statistically significant negative predictor of the child's degree of disability ( $p < 0.05$ , Table 3).

## DISCUSSION

This study aimed to examine the sexual development characteristics of children with intellectual disabilities and the influencing factors from the perspective of mothers. The changes and developments that occur during adolescence do not only constitute the content of the adolescence period. These changes and results are significant because they affect the life and health of individuals (WHO, 2023). While parents are an essential source of information about the development of their children, if they do not know about evolution and the principles of action, they make the individuals they raise pay the price of their ignorance (Akbara, 2004). In this study, we found that the mother's education level and the family's place of residence affected the KPD subdimension of the scale. Our study findings showed that as the educational status of mothers decreased, they needed more information about physical development. In the study of Gürbüz (2018), it was found that the educational status of the parents was not a significant variable in the need for information on physical development. In our study, it was determined that mothers living in villages and towns needed more information. In Türkiye, some services, such as education and health, are concentrated in city centers.

For this reason, it is more difficult for families living in rural areas to access information. This situation explains why mothers living in villages and districts need more information. For this reason, it is more difficult for families living in rural areas to access information. This situation explains why mothers living in villages and districts need more information. It is more difficult for families living in rural areas to access information. This situation explains why mothers living in villages and districts need more information.

In this study, we found that spouses' help with childcare affected the SH subdimension of the scale. Mothers whose spouses helped take care of the child reported that their children's sexual abuse behaviors were more common than those of mothers whose spouses did not help. The sexual feelings, beliefs, and sexual practices expected in a particular life period constitute the sexual development of that period (Gürbüz, 2018). Awareness of the sexuality of children with intellectual disability can cause many problems (such as sexual harassment, emotional break-ups, and adolescent pregnancies) (Austin & Sciarra, 2013).

In this study, we found that the child's gender and verbal communication status affected the SS subdimension, that girls had higher SS subdimension scores than did boys, and that children who did not speak or could not speak more than did the other children. The difficulties of children who do not speak or cannot express themselves may have caused them to exhibit sexual satisfaction behaviors. In the present study, mothers of adolescents with intellectual disability reported that girls had greater sexual satisfaction than boys did. In addition, in our current study, we found that the independent variable predicting the SS subdimension of adolescents with intellectual disability was the gender of the child. This finding suggests that girls have a greater urge to achieve sexual satisfaction. However, contrary to our study findings, Gürbüz (2018) reports that mothers think boys with intellectual disabilities experience more sexual satisfaction than girls do. Sex differences among children and different satisfaction stages can affect their sexual satisfaction. Studies have shown that as adolescents with intellectual disability approach adolescence, anxiety, irritability, and tension increase, these situations increase sexual arousal, and the fact that children do not know what to do for their sexual satisfaction needs increases this tension even more (Akrami & Davudi, 2014; Isler et al., 2009). Educating parents about sexual development for their children and informing their children about sexual satisfaction by taking into account the developmental level of their children can alleviate the effects of possible tension and nervousness.

In the present study, we found that the gender of the child, the degree of disability, and the fulfillment of personal needs affect the SSC subdimension of the scale. The results of the study

showed that mothers think that girls are not able to perform sexual self-care regarding their sexual development compared to boys. The results showed that mothers think that children with severe disabilities cannot perform sexual self-care regarding their sexual development, compared to those with mild disabilities. It has also been shown that mothers think that children who are dependent on another individual to meet their personal needs are not able to provide sexual self-care regarding their sexual development, compared to children who can meet their personal needs. The fact that both sexes have similarities and differences in sexual development characteristics suggests that females need more sexual self-care. Another study supporting our findings revealed that adolescent girls need more sexual self-care (Gürbüz, 2018). It can be assumed that the degree of disability of children and their ability to meet their personal needs affect their sexual self-care behaviors. Nevertheless, teaching the necessary skills in line with their developmental level is necessary to encourage their independence in children with disabilities (Murphy & Elias, 2006). According to the study results, it is thought that it would be beneficial for mothers to obtain information to support adolescents with intellectual disability in meeting their sexual self-care needs.

In our study, we found that providing sexual development education was a significant predictor of the sexual compatibility (SC) subscale among adolescents with intellectual disabilities. The comprehensive sexual development training offered to mothers and adolescents with intellectual disabilities aimed to promote a healthier and safer sexual life for these adolescents. Sexual development education helped adolescents with intellectual disabilities become more aware of their sexual arousal behaviors, contributing to their overall sexual development and well-being (Karaca & Çiçek, 2022).

In the present study, the independent variables predicting the KPD scale subdimension of adolescents with intellectual disability were mothers' educational status and children's diagnosis. As the mother's education level decreases, the need for information about development increases. Information is also needed according to the diagnosis of the disease received by the child. Öncü et al. (2019) stated that parents have the most significant responsibility for sexual education and the development of their children.

Increasing aggression in children, self-care problems, and indulging in sex are the leading fears experienced by family members, especially those with a disabled child (Surekha et al., 2017). Therefore, families may need information about their children's physical and sexual development and disease diagnoses.

The degree of disability of adolescents with intellectual disability predicts the SSC variable. This situation suggests that those with severe disabilities cannot perform sexual self-care themselves. While children with typical development can perform sexual self-care by collecting information about self-care, it is often not possible for children with intellectual disability and severe disability to practice sexual self-care due to the limitations of their disabilities (Çifçi Tekinarslan & Eratay, 2013).

#### **Limitations of the Study**

This study had several limitations. First, self-report measuring instruments were used in this study, which may cause response bias. Second, the results cannot be generalized since this study was conducted in a province in Türkiye's Eastern Black Sea Region. Third, since the study was cross-sectional, causality could not be determined. Therefore, caution is advised when interpreting the study results. Despite these limitations, the study also has strengths. This study is valuable for evaluating the sexual development characteristics of adolescents with intellectual disability, which is an exceptional group, and for increasing parental awareness of this issue.

#### **Conclusions**

The present study revealed that the sexual development characteristics of adolescents with intellectual disability were affected by the educational status of the mother, the place of residence of the family, the help of the spouse with childcare, the gender of the child, the verbal communication status of the child, the degree of inadequacy of the child and the ability to meet the personal needs of the child. The sexual education that parents provide to their children with intellectual disability is one of the essential factors in shaping children's personalities, protecting family health and improving public health, and planning and implementing the necessary training to eliminate sexual problems, which can be achieved through multidisciplinary education. This team should include midwives, nurses, special education teachers, and other health professionals.

Each member contributing to education has different responsibilities in protecting and improving public health (McCann, 2003; Cangöl et al., 2013). The most significant responsibility of the midwives and nurses on this team is to provide training that improves sexual health. This education will be possible by promoting evidence-based practices in sex education and replicating research in different communities. In addition, midwives and nurses should actively plan and implement specialized educational and counseling interventions for parents. In this way, ensuring the healthy sexual development of adolescents with intellectual disability can affect public health.

### Conflict Of Interest

No potential conflict of interest relevant to this article was reported.

### Ethical considerations

This study was conducted with the approval of the Ethics Committee of Bayburt University with reference number (ACP-2023-164/8).

### Author Contributions

Study Design: ZÖK; Data Collection: ZÖK, EOA; Statistical Analysis: ZÖK, EOA; Data Interpretation: ZÖK, EOA; Manuscript Preparation, ZÖK, EOA; Literature Search: ZÖK, EOA. All authors have read and agreed to the published version of the manuscript.

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