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**Suudi Arabistan'da Down Sendromlu Öğrencilerde Yaygın Cinsel Sorunların Gerçekliği**

**The Reality of Common Sexual Problems for Students with Down's Syndrome in Saudi Arabia**

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**Sultan Alzahrani**





## The Reality of Common Sexual Problems for Students with Down's Syndrome in Saudi Arabia

Sultan Alzahrani <sup>1</sup>

### Abstract

**Introduction:** The current study aimed to identify the sexual problems of students with Down's syndrome in Saudi Arabia from the point of view of their parents and teachers in the light of a range of variables (student's age, educational program, and family's economic situation).

**Method:** This descriptive comparative study was based on a sample of 120 participants consisting of 68 parents and 52 teachers caring for students with Down's syndrome. The questionnaire of sexual problems for students with disabilities was applied and the data was statically analyzed using Analysis of Variance (ANOVA) and One-way ANOVA. The findings indicated that the most prevalent sexual problems experienced by students with Down's syndrome according to their parents and teachers are a lack of knowledge of sexual development, difficulties in the child presenting themselves in front of others, and the inability to distinguish between normal and abnormal physical contact.

**Findings:** The arithmetic one-way analysis of variance (ANOVA), mean, standard deviation, and t-test were used to calculate the findings that revealed no statistically significant differences between the perspectives of the parents and teachers of students with intellectual disability regarding the most prevalent sexual problems. Moreover, there was no statistically significant correlation between the student's age and the sexual problems they encountered. Finally, the findings found statistically significant differences in the sexual problems encountered according to the of the program variables to which the students with Down's syndrome belong and the family's economic situation

**Discussion:** It is recommended that a group counseling program be devised for the parents of students with Down's syndrome to advance their knowledge of sexual development and to obtain an understanding of how to deal with the variables resulting from such development. Develop training programs for families, teachers, psychologists, and social workers working in special needs care on how to identify the sexual problems experienced by intellectually disabled students. Raise parents' awareness of the importance of communication and dialogue with teachers to identify the most important sexual problems their children face and collaborate to resolve them through training courses.

**Keywords:** Sexual problems, students, Down's syndrome, reality, common.

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## Introduction

Psychologists view sexuality as an essential facet of human nature. Psychoanalysts view libido or sexual energy as an instinctual energy that serves the purpose of species survival, growth, development, and creativity. Sexuality, in general, remains taboo; until recently, many people have refused to acknowledge that all human beings have sexual feelings, needs, and desires, regardless of their physical or intellectual abilities (Husain et al., 2023). However, students with Down's syndrome have the same sexual feelings, needs, and desires as ordinary students, and they have the right to receive sexual education and sexual healthcare as well as opportunities for sexual expression, although sexuality for these students has historically been a matter of fear and denial (Haskan, 2023).

Students with disabilities encounter various obstacles in terms of social adaptation and social acceptance, particularly concerning sex; Many people mistakenly believe individuals with Down syndrome exhibit sexual deviance, but this perception requires further elaboration, and the connection between sexuality in individuals with Down syndrome should be reinforced with a more comprehensive review of the literature. or unable to establish a long-term sexual relationship. Paradoxically, students with Down's syndrome are at high risk of being sexually exploited by ordinary students (Rfat et al., 2002). Therefore, students with disabilities often have partial, inaccurate, and contradictory sexual knowledge (Whittle & Butler, 2018). Various studies (Hole et al., 2022; Friedman, 2023) suggest that early maturation and rapid changes in individuals with Down's syndrome may sometimes contribute to an increased risk of sexual issues and challenges.

Most recent findings indicate an increase in behavioral and psychological disorders among adolescents with Down's syndrome (Lunde et al., 2022). During puberty, adolescents begin to experience sexual attraction and become sensitive to sexual topics, and their thoughts become preoccupied with sexual matters; in many cases, sexual perversions can manifest in various forms such as masturbation and illegal sexual relationships (Kirkner et al., 2022).

For students with disabilities, sexuality can cause discomfort and upset when parents attempt to suppress their children's sexual expression and are opposed to the idea that their children can lead independent sexual lives (Schmidt et al., 2022). Many parents of students with Down's syndrome take contradictory or restrictive attitudes and avoid discussing sex with their children (Hole et al., 2022). It is therefore important for healthcare professionals to inform parents of individuals with special needs about sexual development (Schmidt et al., 2022).

The above factors highlight those students with Down's syndrome experience more sexual problems than ordinary students. Therefore, the current study examines these problems from the perspective of parents and teachers according to a range of variables.

### Study Problem

Sex is integral to the emotional, moral, physical, psychological, social, and spiritual passions that make us human beings. Although sexual activity is an intricate part of socialization for all students, promoting lifelong sexual activity among students with intellectual and developmental disabilities is particularly critical, as they have been systematically and routinely denied opportunities to develop and express their sexuality (Correa et al., 2022).

Sexual activity in Western societies, is often taboo, especially involving students with disabilities. Not surprisingly, the interest in sex for students with disabilities has often been thwarted. The ability of other students to control the sexuality of individuals with Down syndrome is influenced by several factors that can exacerbate this phenomenon. These factors include their dependence on others for physical care, living in unsupervised environments, lack of respect for their human rights, difficulties in seeking assistance, increased social isolation, and limited self-defense capabilities. Moreover, living in inclusive contexts can lead to a greater likelihood of replicating socially and culturally impoverished environments (Hole et al., 2022).

Denying society and culture of the students with disabilities' fundamental right to sexuality expression, the perceptions of such students as being asexual can be an obstacle to safe sex education for workers who may be affected by these views and for students with disabilities themselves, both in terms of their access to information and being accepted as sexual creatures. This can lead to sexual problems, lack of sex education, and inappropriate attitudes towards the sexuality of students with and without disabilities (Houtrow et al., 2021).

In the Arab context, research on the sexual challenges faced by students with Down Syndrome has been notably limited. The researcher's observations have brought to light instances of sexual exploitation that these students are vulnerable to, including cases of self-inflicted physical sexual abuse when left unattended, as well as

incidents of abuse during school-to-home bus commutes and within mainstream school environments. Given the scarcity of previous studies that addressed puberty problems (sexual and behavioral problems) for students with Down's syndrome in Arab societies, it is difficult in some countries (for example, the Kingdom of Saudi Arabia) to find resources that are understandable, realistic, and tangible enough to explain the reality and causes of sexual problems among students with Down's syndrome. Thus, it is difficult to reach any general conclusions about the sexual behavior of these individuals.

This study seeks to provide a clear definition of the term 'sexual problems' in the context of Down Syndrome, address the scarcity of relevant literature with proper references, and delve into how previous studies have approached and managed these issues. Furthermore, the study aims to articulate its unique contributions to the existing literature and its potential applications, focusing on the perspectives of parents and teachers in Saudi

### **Significance of the Study**

The theoretical importance lies in studying the sexual problems of students with Down's syndrome from the parents' perspective, which increases our understanding of the disturbed behaviors demonstrated by these students and how to deal with them, as well as enriching the research in this field. Despite the increased interest in this topic at the Western and Arab levels in recent years, this interest is not commensurate with the problem and requires more qualitative research (Michielsen & Brockschmidt, 2021). In addition, the findings may help researchers and teachers to develop programs that help address these sexual problems, thus working to prevent them or to develop early intervention strategies to modify them. This study can be useful for the psychological and behavioural rehabilitation of students with Down's syndrome in the Kingdom of Saudi Arabia at special education centers and mainstream classrooms. The study's findings will also have a role in developing remedial and counseling programs for parents to help them deal with any sexual problems with their children.

### **Sexual Problems**

Some scholars believe that sexual problems are the root of all other behavioral problems, especially since the sexual instinct in humans is often suppressed, leading to psychological repercussions (Legano et al., 2021). Students with Down's syndrome face challenges in the field of sexual activity that may differ from those faced by their peers without disabilities. For instance, students with Down's syndrome tend to be less familiar with sex, have fewer sexual experiences, have more negative attitudes toward sexual activities, and have more experience of sexual abuse—often as victims—than those without intellectual disabilities (Jojo et al., 2023).

Many people misconceive that if a child has a lower IQ, they will be less active in other areas, while sometimes the opposite is true. This is because sexual stimulation and behavior has nothing to do with the mind, but with the endocrine hormones. Since students with Down's syndrome are less aware of social rules, these sexual desires may arise sooner than for others. It was found that behavioral and sexual problems are more common among adolescents with Down's syndrome than in ordinary children during puberty (Friedman, 2023). Thus, puberty is an important period for children with Down's syndrome and their families, and this should be considered by psychiatrists and physicians (Donnelly et al., 2023).

Students with intellectual disabilities often describe sexual behavior as a 'bad, inappropriate, dangerous, and forbidden thing', and talk about it anxiously; when explaining their attitudes towards it, the attitudes of their environment are reflected in their own attitudes. Consequently, their own experience of fear and insecurity regarding sex leads them to suppress their sexual needs and desires and avoid topics related to sex, or to be ambivalent regarding their sexuality (Friedman, 2023).

Given the scarcity of Arab studies in this field, it is difficult to reach any general conclusions about the sexual behavior of students with Down's syndrome. Defining and identifying the concept of sexual problems is difficult and attempts to do so have not yet led to agreement or consensus, as normal sexuality differs from one culture to another. Aromaa et al. (2023) define sexual problems as behavior that implies acts, sayings, or gestures related to sexual matters in a context that contradicts mental health, physical health, Islamic law, and society's norms. Kaplan et al. (2023) define sexual problems as problems resulting from sexual puberty among students with intellectual disabilities, which, if not addressed, can lead to perversion.

### **Sexual Problems Among Students with Down's Syndrome**

Previous studies have shown that acute sexual problems are stronger in students with Down's syndrome at home, at school, and in the street compared to ordinary students (Houtrow et al., 2021), as these students have less knowledge about sexual issues than ordinary students. These students cannot obtain knowledge from others,

as they often cannot read and understand books and magazines as sources of information in this regard. They are also not typically given adequate opportunities in schools to be taught these matters (Carter et al., 2021).

The most prominent sexual problems and disorders among adolescents with Down's syndrome are (Nelson et al., 2020):

1. Excessive masturbation.
2. Sexual identity disorder and sexual behavior disorder, and the associated psychological and social incompatibility.
3. Homosexuality.
4. Exhibitionism.
5. Uttering obscene sexual words and phrases.
6. Playing with genitals.
7. Sexual contact with others.
8. Frequent touching and tampering with the genitals of others.
9. Uncontrolled sexual promiscuity.
10. Harassment of peers.
11. Rude and obscene phone calls.
12. Anomalous sexual perversions represented in anomalies that have nothing to do with normal sexual contact, such as fetishism, sexual aggression and violence, fetishizing the clothes and accessories of the opposite sex, and a morbid attraction to corpses.

Students with Down's syndrome often experience feelings of discomfort, shame, fear, and guilt regarding their genitals, sexual reactions, and feelings that are part of the normal maturation process. During adolescence and puberty, interest in their sexuality increases, although this may be accompanied by anxiety, fear, and confusion. The most common type of sexual practice is masturbation in public. Similarly, expressions of homosexuality may reflect the inability of an intellectually disabled person to fulfil his sexual needs in a heterosexual environment, or there may be no conditions for such contact (Dağlı et al., 2020).

### **Experiencing Sexual Exploitation Among Students with Down's Syndrome**

Undoubtedly, students with disabilities are more exposed to sexual violence, exploitation, and abuse than others. The percentage of sexual exploitation and abuse against people with disabilities is higher as abusers take advantage of their cognitive abilities and lack of family members or other carers (Correa et al., 2022). Thus, these students require more information related to sex, sexual behavior, sexual functioning, and mutual social relationships with others. There is an urgent need for appropriate ways to communicate with students with Down's syndrome in terms of information regarding sexual exploitation and beliefs about certain sexual behaviors. Aside from this being very difficult, it is compounded by the negative consequences of their disability and exposure to sexual exploitation.

It is possible to address this by developing educational curricula in a language commensurate with the capabilities, personality, and psychological structure of students with Down's syndrome so that they can obtain information related to sexual activity and development. Family members can also help by discussing the topic and helping their children to understand the concepts related to sexual development and appropriate and inappropriate behaviors, and encouraging them to speak up if they have been exposed to any sexual exploitation or inappropriate behavior.

After reviewing the previous studies, it was found that there is an interest in studying sexual problems and their associated factors. Some studies covered demographic variables such as sex, socioeconomic status, and parents' educational level, but most dealt with sexual problems among adolescents. Therefore, the current study aims to examine sexual problems among students with Down's syndrome from the perspective of their parents and teachers according to the variables of educational program and the family's socioeconomic status.

### Study Questions

1. What are the most prevalent sexual problems experienced by students with Down's syndrome from the perspective of their parents and teachers?
2. Are there differences regarding the reality of the problems experienced by students with Down's syndrome that can be attributed to the variables of child's age, educational program, and family's socioeconomic status?
3. What are the differences between the perspectives of parents and teachers in terms of the sexual problems experienced by students with Down's syndrome?

### Method

The descriptive comparative approach is the most appropriate scientific research methodology for this study. This method summarizes the current understanding of the topic within social sciences research, and then analyzes cases that can help identify the relationships between the variables and provide an appropriate explanation for them (McConnell et al., 2021).

### Population and Sample

There were 120 participants randomly selected from Jeddah city in the study, including 52 teachers and 68 parents of students with Down syndrome. The features of the students were heterogeneous, comprising boys and females with low attendance rates. These students showed lower levels of intelligence or cognitive functioning, as well as delays in communication and self-care abilities like dressing, eating, and using the restroom. Notably, 47.5% of participants reported an average monthly income of SAR 10,000-15,000, placing them in the intermediate socioeconomic status category. The average age of the pupils was 12.57 years, with a 4.87-point standard deviation.

### Study Tool

The 40-item Questionnaire of Sexual Problems for Students with Down's Syndrome, created by Akl and Jacob in 2015, was used in the study. A maximum total score of 40 can be achieved by rating each item on the questionnaire as either "Yes" (scored as 1) or "No" (scored as 0). This measure, which includes both positively and negatively oriented items, is designed to assess whether or not adolescents with Down syndrome experience sexual problems. Although the study stated that the questionnaire was validated using a Pearson's correlation coefficient test, particular test results are not given. The questionnaire has, nevertheless, been used in studies before. It is important to note that attempts have been made to modify the questionnaire to fit various cultural settings. To guarantee the questionnaire's applicability and efficacy in a variety of contexts, several adaptation initiatives are essential (Marlow et al., 2023).

### Reliability of the Study Tool

#### *Interrater Validity*

In order to establish the questionnaire's reliability, a rigorous process was undertaken. Nine experts with specializations in the field of special education were actively engaged in the assessment. The procedure encompassed multiple rounds of review, during which the researcher diligently sought their guidance and valuable suggestions. These iterative evaluations were instrumental in refining and fine-tuning the questionnaire until its final form was reached.

#### *Internal Consistency (Constructive Validity)*

After validating the questionnaire, the researcher distributed it to a group of 10 respondents through an electronic link. The study received feedback from 8 of these participants, contributing to the overall assessment of the questionnaire's effectiveness. The responses were then inserted into the SPSS program. The researcher calculated the Pearson correlation coefficient to measure the internal consistency of the questionnaire by calculating the correlation factor between the degree of each paragraph and the overall degree of the standard to which the paragraph belongs. All standards showed positive correlation values at a statistical level of 0.01, meaning that the questionnaire's phrases had high validity and measured the attributes they were designed to measure.



### **Reliability of the Tool**

To verify the reliability of the research tool, the researcher used Cronbach's alpha. The results showed that the reliability values were high, ranging from 0.885 to 0.934. The total reliability value amounted to 0.969, indicating that the questionnaire had a high degree of reliability and could be relied upon for use in the study.

### **Psychometric Properties of the Questionnaire in the Current Study**

"The psychometric properties of the questionnaire were evaluated by applying it to a study sample comprising 120 parents and teachers of students with Down's syndrome. The questionnaire, consisting of 10 items, was employed to measure a range of attributes related to sexual problems in this population. It utilized a A-F grading system with scores computed using Likert scale. The interpretation of scores was based on total score interpretation, and the questionnaire did not include any sub questionnaires. The results of internal validity assessments affirmed the questionnaire's high level of validity, instilling confidence in the study's findings.

The data analysis for this study employed Analysis of Variance (ANOVA) as the primary statistical technique. ANOVA is a robust method for assessing group differences when comparing more than two groups. To ensure the validity of this analysis, the study also included tests to assess data homogeneity. The results of these tests demonstrated the comparability and consistency of the data across the groups, bolstering the reliability of the ANOVA findings.

## **Findings**

### **RQ1: What are the most prevalent sexual problems experienced by students with Down's syndrome from the perspective of their parents and teachers?**

Both parents and teachers have their opinion about the most prevalent sexual problems experienced by students with Down's syndrome. To clearly that and answering the first question, the frequencies and percentages of the participants' answers were calculated. The findings showed that the most prevalent sexual problems among students with Down's syndrome from the perspective of parents and teachers is the lack of knowledge of sexual development and the results are presented in Table 1.

**Table 1**

*Frequencies And Percentages of Common Sexual Problems Experienced by Intellectually Disabled Students from The Perspective of Parents and Teachers*

Phrase	Sexual problems	Frequency	Percentage
1	He is ignorant of appropriate information regarding sexual development.	105	87.5
2	He finds it difficult to introduce himself in front of others.	96	80.0
6	He finds it difficult to distinguish between innocent and non-innocent touch.	92	76.7
17	He knows the seriousness of illegal sexual intercourse and its dangerous diseases.	92	76.7
19	It is difficult for him to recognize the differences between the two sexes and their roles.	89	74.2
23	He seeks permission before entering a place where others are present.	80	66.7
4	He has difficulty distinguishing between the expected roles of males and females.	77	64.2
25	He turns a blind eye to the genitals of others if they are exposed.	77	64.2
7	He has difficulty distinguishing the difference between the male greeting and the female greeting.	76	63.3
9	He tends to exaggerate in hugging and embracing others indiscriminately.	76	63.3
13	He lacks distinction between public and private places.	76	63.3
8	He has poor ability to say no in situations that call for it.	75	62.5
12	He has difficulty distinguishing physical privacy for himself and others.	75	62.5
15	He finds it difficult to express his desire to be alone.	75	62.5
40	He can protect himself against sexual abuse and exploitation.	75	62.5
14	He can distinguish between public social behavior and private behavior.	74	61.7
38	He has difficulty adapting to body changes during puberty.	74	61.7
3	He has difficulty realizing the meaning of some social occasions such as engagements and weddings.	73	60.8
28	He plays and tampers with his genitals.	69	57.5
27	He makes signs, gestures, and words with sexual connotations.	68	56.7
10	He is unable to distinguish human ties: a friend, a brother, a sister, a colleague.	64	53.3
37	He has no interest in changing his clothes after a wet dream or masturbation.	63	52.5
26	He informs his father or teacher if something inappropriate or sexual has happened to him.	58	48.3

**Table 1** (continue)

Phrase	Sexual problems	Frequency	Percentage
33	He has sexual and homosexual identity disorders.	57	47.5
16	He can take care of his genitals and sensitive body areas and clean them.	56	46.7
11	He knows his genitals and their functions.	50	41.7
18	He makes sexual contact with others.	50	41.7
20	He undresses in front of others.	50	41.7
34	He tries to touch the genitals of his peers.	48	40.0
21	He experiences tampering of his genitals by another person.	45	37.5
35	He practices masturbation in secret.	43	35.8
22	He touches with his hand or mouth the most private body parts of another person.	37	30.8
5	He sexually harasses his brothers and sisters to the point where leaving him alone with them is inappropriate.	35	29.2
24	He can go to the bathroom on his own.	35	29.2
39	He sexually plays with dolls.	35	29.2
31	He sexually harasses his brothers and sisters to the point where it is inappropriate to leave him alone with them.	33	27.5
29	He tends to watch sex movies on the TV, internet, and mobile phone.	29	24.2
36	He practices masturbation in public.	25	20.8
30	He discusses sex with strangers.	22	18.3
32	He reviews books and magazines that contain pornographic images.	18	15.0

The most prevalent sexual problems among students with Down's syndrome from the perspective of parents and teachers is the lack of knowledge of sexual development. Phrase 1: 'He is ignorant of appropriate information regarding sexual development' had the highest frequency of 'Yes' responses at 87.5%, followed by phrase 2: 'He finds it difficult to introduce himself in front of others' at 80.5%. In third place was phrase 6: 'His poor ability to distinguish between innocent and non-innocent touch', which totaled 76.7% of the responses.

The least prevalent sexual problems are tampering of their genitals by others at 37.5%, practicing masturbation in secret at 35.8%, and touching the most private body parts of others with a percentage of 30.8%. Moreover, sexual harassment of siblings and playing sexually with dolls both totaled 29.2%, followed by practicing masturbation in public and discussing sex with strangers at 20.8% and 18.3%, respectively. In last place came the problem of purchasing books and magazines that contain pornographic images, with the lowest percentage of 15.0%.

**RQ2: Are there differences regarding the reality of the problems experienced by students with Down's syndrome that can be attributed to the variables of child's age, educational program, and family's socioeconomic status?**

**Age**

To answer this question, the correlation coefficient between the students' sexual problems and their age was calculated. The findings showed no statistically significant correlation between the student's age and sexual problems, as the relationship between the total score on the questionnaire of sexual problems and the student's age was not statistically significant and the correlation coefficient was low. This was also evident in the correlation coefficients between the student's age and each problem separately, except for the poor ability to distinguish between innocent and non-innocent touch and practicing masturbation in secret (at a 0.05 significance level).

**Educational Program**

To answer this question, the statistical design was tested using a one-way analysis of variance (ANOVA). The findings showed that there are statistically significant differences between sexual problems and the program variable to which the students belong. Table 2 presented the results in details.



**Table 2**

*One-Way ANOVA for the Impact of Educational Program on Sexual Problems Experienced by Students with Down's Syndrome*

Sexual problems	Educational program	Average	Deviation	Difference	Sig.
He is ignorant of the appropriate information regarding sexual development	Special education institute	.90	.305	.225	.636
	Mainstream program in an ordinary school	.87	.342		
He finds it difficult to introduce himself in front of others	Special education institute	.83	.379	.274	.602
	Mainstream program in an ordinary school	.79	.410		
He has difficulty realizing the meaning of social occasions such as engagements and weddings	Special education institute	.83	.379	8.994	.003
	Mainstream program in an ordinary school	.53	.502		
He has difficulty distinguishing between the expected roles of males and females	Special education institute	.87	.346	9.346	.003
	Mainstream program in an ordinary school	.57	.498		
He sexually harasses his brothers and sisters to the point where leaving him alone with them is inappropriate	Special education institute	.33	.479	.331	.566
	Mainstream program in an ordinary school	.28	.450		
He has poor ability to distinguish between innocent and non-innocent touch	Special education institute	.83	.379	.985	.323
	Mainstream program in an ordinary school	.74	.439		
He has difficulty distinguishing the difference between the male greeting and the female greeting	Special education institute	.90	.305	13.414	.000
	Mainstream program in an ordinary school	.54	.501		
He has poor ability to say no in situations that call for it	Special education institute	.73	.450	2.003	.160
	Mainstream program in an ordinary school	.59	.495		
He tends to exaggerate in hugging and embracing others indiscriminately	Special education institute	.67	.479	.188	.665
	Mainstream program in an ordinary school	.62	.488		
He cannot distinguish human ties: a friend, a brother, a sister, a colleague	Special education institute	.67	.479	2.878	.092
	Mainstream program in an ordinary school	.49	.503		
He knows his genitals and their functions	Special education institute	.53	.507	2.245	.137
	Mainstream program in an ordinary school	.38	.488		
He has difficulty distinguishing the physical privacy for himself and others	Special education institute	.67	.479	.292	.590
	Mainstream program in an ordinary school	.61	.490		
He lacks distinction between public and private places	Special education institute	.77	.430	3.090	.081
	Mainstream program in an ordinary school	.59	.495		
He can distinguish between public social behavior and private behavior	Special education institute	.60	.498	.046	.830
	Mainstream program in an ordinary school	.62	.488		
He finds it difficult to express his desire to be alone	Special education institute	.80	.407	5.374	.022
	Mainstream program in an ordinary school	.57	.498		
He can take care of his genitals and sensitive body areas and clean them	Special education institute	.57	.504	1.602	.208
	Mainstream program in an ordinary school	.43	.498		
He knows the seriousness of illegal sexual intercourse and its dangerous diseases	Special education institute	.67	.479	2.241	.137
	Mainstream program in an ordinary school	.80	.402		
He makes sexual contact with others	Special education institute	.37	.490	.406	.525
	Mainstream program in an ordinary school	.43	.498		
It is difficult for him to recognize the differences between the two sexes and their roles	Special education institute	.83	.379	1.751	.188
	Mainstream program in an ordinary school	.71	.456		
He undresses in front of others	Special education institute	.63	.490	8.120	.005
	Mainstream program in an ordinary school	.34	.478		
He experiences tampering of his genitals by another person	Special education institute	.43	.504	.574	.450
	Mainstream program in an ordinary school	.36	.481		

**Table 2** (continue)

Sexual problems	Educational program	Average	Deviation	Difference	Sig.
He touches with his hand or mouth the most private body parts of another person	Special education institute	.30	.466	.013	.910
	Mainstream program in an ordinary school	.31	.466		
He seeks permission before entering a place where others are present	Special education institute	.73	.450	.792	.375
	Mainstream program in an ordinary school	.64	.481		
He can go to the bathroom alone	Special education institute	.50	.509	8.886	.003
	Mainstreaming program in an ordinary school	.22	.418		
He turns a blind eye to the genitals of others if they are exposed	Special education institute	.77	.430	2.735	.101
	Mainstream program in an ordinary school	.60	.493		
He informs his father or teacher if something inappropriate or sexual happens to him	Special education institute	.47	.507	.044	.835
	Mainstream program in an ordinary school	.49	.503		
He makes signs, gestures, and words with sexual connotations	Special education institute	.63	.490	.716	.399
	Mainstream program in an ordinary school	.54	.501		
He plays and tampers with his genitals	Special education institute	.67	.479	1.368	.244
	Mainstream program in an ordinary school	.54	.501		
He tends to watch sex movies on the TV, internet, and mobile phone	Special education institute	.23	.430	.015	.903
	Mainstream program in an ordinary school	.24	.432		
He discusses sex with strangers	Special education institute	.20	.407	.073	.787
	Mainstream program in an ordinary school	.18	.384		
He sexually harasses his brothers and sisters to the point where leaving him alone with them is inappropriate	Special education institute	.27	.450	.014	.907
	Mainstream program in an ordinary school	.28	.450		
He purchases books and magazines that contain pornographic images	Special education institute	.23	.430	2.182	.142
	Mainstream program in an ordinary school	.12	.329		
He has sexual and homosexual identity disorders	Special education institute	.67	.479	6.094	.015
	Mainstream program in an ordinary school	.41	.495		
He tries to touch the genitals of his peers	Special education institute	.43	.504	.182	.670
	Mainstream program in an ordinary school	.39	.490		
He practices masturbation in secret	Special education institute	.40	.498	.298	.586
	Mainstream program in an ordinary school	.34	.478		
He practices masturbation in public	Special education institute	.40	.498	9.464	.003
	Mainstream program in an ordinary school	.14	.354		
He has no interest in changing his clothes after a wet dream or masturbation	Special education institute	.633	.4901	1.881	.173
	Mainstream program in an ordinary school	.489	.5027		
He has difficulty adapting to body changes during puberty	Special education institute	.63	.490	.046	.830
	Mainstream program in an ordinary school	.61	.490		
He sexually plays with dolls	Special education institute	.43	.504	3.949	.049
	Mainstream program in an ordinary school	.24	.432		
He can protect himself against sexual abuse and exploitation	Special education institute	.53	.507	1.427	.235
	Mainstream program in an ordinary school	.66	.478		
Total scores	Special education institute	23.57	6.719	7.321	.008
	Mainstream program in an ordinary school	19.33	7.636		

The results presented in Table 2 indicate that there are statistically significant differences between sexual problems and the program variable to which the students belong (special education institutes or mainstream classrooms), as evidenced by the difference value of 7.321 found for the total score for special education institutes. Differences were found for the following phrases:

1. Difficulty realizing the meaning of some social occasions such as engagements and weddings, in favor of special education institutes at a significance level of 0.01.
2. Difficulty distinguishing the expected roles of males and females, in favor of special education institutes at a significance level of 0.01.
3. Difficulty distinguishing the difference between the male greeting and the female greeting, in favor of special education institutes at a significance level of 0.01.
4. Difficulty expressing his desire to be alone, in favor of special education institutes at a significance level of 0.05.
5. Undresses in front of others, in favor of special education institutes at a significance level of 0.01.
6. Sexual and homosexual identity disorders, in favor of special education institutes at a significance level of 0.05.
7. Practicing masturbation in public, in favor of special education institutes at a significance level of 0.01.
8. Playing sexually with dolls, in favor of special education institutes at a significance level of 0.05.

These results indicate the higher prevalence of sexual problems among students with intellectual disabilities in special education institutes compared to those in mainstream classrooms.

#### ***Family's Socioeconomic Status***

To answer this question, the statistical design was tested using another one-way ANOVA. The results revealed statistically significant differences at the 0.05 level between sexual problems and the variable of families' economic situation. Differences were found for the following phrases:

1. He finds it difficult to introduce himself in front of others, in favor of families with an income of SAR 5000-10000.
2. He has difficulty distinguishing between the expected roles of males and females, favoring families with an income of SAR 5000-10000.
3. He lacks distinction between public and private places, in favor of families with an income of SAR 15000 and above.
4. He undresses in front of others, in favor of families with an income of SAR 5000-10000.
5. He touches with his hand or mouth the most private body parts of others, in favor of families with an income of SAR 10,000-15000.
6. He makes signs, gestures, and words with sexual connotations, in favor of families with an income of SAR 5000-10000.
7. He has difficulty adapting to body changes during puberty, in favor of families with an income of SAR 15000 and above.

#### **RQ3: What are the differences between the perspectives of parents and teachers in terms of the sexual problems experienced by students with Down's syndrome?**

To answer this question, the arithmetic mean, standard deviation, and t-test were calculated to indicate the differences between the responses of the parents and teachers. The findings showed that there are no statistically significant differences between the perspectives of parents and teachers regarding the most prevalent sexual problems encountered by these students. Table 3 presented the results in details.

**Table 3***Mean, Standard Deviation (SD), and T-value for Differences Between Parent and Teacher Responses*

Relationship	Type of responder	Mean	SD	T-value	Significance																																																																																																																																																																																																																																																
He is ignorant of appropriate information regarding sexual development.	Parent	.85	.357	-1.663	.408																																																																																																																																																																																																																																																
	Teacher	.90	.298			He finds it difficult to introduce himself in front of others.	Parent	.85	.357	1.663	.099	Teacher	.73	.448	He has difficulty realizing the meaning of social occasions such as engagements and weddings.	Parent	.66	.477	1.371	.173	Teacher	.54	.503	He has difficulty distinguishing between the expected roles of males and females.	Parent	.69	.465	1.292	.199	Teacher	.58	.499	He sexually harasses his brothers and sisters to the point where leaving him alone with them is inappropriate.	Parent	.28	.452	-0.335	.738	Teacher	.31	.466	He has poor ability to distinguish between innocent and non-innocent touch.	Parent	.76	.427	-0.058	.954	Teacher	.77	.425	He has difficulty distinguishing the difference between the male greeting and the female greeting.	Parent	.65	.481	.354	.724	Teacher	.62	.491	He has poor ability to say no in situations that call for it.	Parent	.65	.481	.567	.572	Teacher	.60	.495	He tends to exaggerate in hugging and embracing others indiscriminately.	Parent	.62	.490	-0.405	.686	Teacher	.65	.480	He cannot distinguish human ties: a friend, a brother, a sister, a colleague.	Parent	.57	.498	1.005	.317	Teacher	.48	.505	He knows his genitals and their functions.	Parent	.47	.503	1.369	.173	Teacher	.35	.480	He has difficulty distinguishing physical privacy for himself and others.	Parent	.68	.471	1.331	.186	Teacher	.56	.502	He lacks distinction between public and private places.	Parent	.63	.486	-0.025	.980	Teacher	.63	.486	He can distinguish between public social behavior and private behavior.	Parent	.54	.502	-1.881	.062	Teacher	.71	.457	He finds it difficult to express his desire to be alone.	Parent	.74	.444	2.931	.004	Teacher	.48	.505	He can take care of his genitals and sensitive body areas and clean them.	Parent	.44	.500	-0.636	.526	Teacher	.50	.505	He knows the seriousness of illegal sexual intercourse and its dangerous diseases.	Parent	.71	.459	-1.810	.073	Teacher	.85	.364	He makes sexual contact with others.	Parent	.40	.493	-0.495	.622	Teacher	.44	.502	It is difficult for him to recognize the differences between the two sexes and their roles.	Parent	.76	.427	.655	.514	Teacher	.71	.457	He undresses in front of others.	Parent	.49	.503	1.752	.082	Teacher	.33	.474	He experiences tampering of his genitals by another person.	Parent	.43	.498	1.331	.186	Teacher	.31	.466	He touches with his hand or mouth the most private body parts of another person.	Parent	.34	.477	.807	.422	Teacher	.27	.448	He seeks permission before entering a place where others are present.	Parent	.66	.477	-0.129	.897	Teacher	.67	.474	He can go to the bathroom alone.	Parent	.34	.477	1.282	.203	Teacher	.23	.425	He turns a blind eye to the genitals of others if they are exposed.	Parent	.69	.465	1.292	.199	Teacher	.58	.499	He informs his father or teacher if something inappropriate or sexual happens to him.	Parent	.43	.498	-1.426	.157	Teacher	.56	.502	He makes signs, gestures, and words with sexual connotations.	Parent	.54	.502	-0.566	.572	Teacher	.60	.495	He plays and tampers with his genitals.	Parent	.59	.496	.333	.740
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**Table 3** (continue)

Relationship	Type of responder	Mean	SD	T-value	Significance
He tends to watch sex movies on TV, internet, and mobile phone.	Parent	.22	.418	-.613	.541
	Teacher	.27	.448		
He discusses sex with strangers.	Parent	.24	.427	1.688	.094
	Teacher	.12	.323		
He sexually harasses his brothers and sisters to the point where leaving him alone with them is inappropriate.	Parent	.29	.459	.532	.595
	Teacher	.25	.437		
He purchases books and magazines that contain pornographic images.	Parent	.21	.407	1.976	.050
	Teacher	.08	.269		
He has sexual and homosexual identity disorders.	Parent	.53	.503	1.364	.175
	Teacher	.40	.495		
He tries to touch the genitals of his peers.	Parent	.37	.486	-.823	.412
	Teacher	.44	.502		
He practices masturbation in secret.	Parent	.35	.481	-.140	.889
	Teacher	.37	.486		
He practices masturbation in public.	Parent	.26	.444	1.746	.083
	Teacher	.13	.345		
He has no interest in changing his clothes after a wet dream or masturbation.	Parent	.544	.5018	.476	.635
	Teacher	.500	.5049		
He has difficulty adapting to body changes during puberty.	Parent	.65	.481	.778	.438
	Teacher	.58	.499		
He sexually plays with dolls.	Parent	.32	.471	.874	.384
	Teacher	.25	.437		
He can protect himself against sexual abuse and exploitation.	Parent	.63	.486	.189	.851
	Teacher	.62	.491		
Total score	Parent	21.07	7.166	1.123	.264
	Teacher	19.50	8.152		

The results presented in Table 3 indicate no statistically significant differences between the perspectives of parents and teachers regarding the most prevalent sexual problems encountered by these students. The T-value was non-significant in all items except 'He has difficulty expressing his desire to be alone', which was statistically significant at the 0.01 level in favor of parents with an arithmetic mean = 0.74 and a standard deviation = 0.444. These results indicate that the sexual problems are similar from the perspective of the parents and teachers, which indicates the generality of these problems among students with Down's syndrome.

### Discussion

This study aimed to identify the most prevalent sexual problems faced by students with Down's syndrome from the perspective of parents and teachers in special education. The results indicated that the most prevalent problems were found to be the tampering of their genitals by others, understanding of general stages of development, practicing masturbation in secret and in public, discussing sex with strangers, and purchasing books and magazines that contain pornographic images. The least prevalent sexual problems were a lack of knowledge regarding physical and sexual development, introducing themselves in front of others, and difficulty distinguishing between normal and abnormal contact.

The current results agree with those of other studies on the existence of sexual problems experienced by students with intellectual disabilities (Goli et al., 2022). However, they contradict the findings of some studies in terms of the problem of practicing masturbation in secret and in public. This study found the problem to be less prevalent. At the same time, other research highlights the strong prevalence of this behavior among students with Down's syndrome, and that the vast majority of parents have concerns about this type of sexual problem (Parchomiuk, 2022). The current results also contradict a study by Al-Buqai and Al-Qudsi (2019), which indicated that masturbation is the most prevalent sexual problem among intellectually disabled adolescents.

The finding that there is a perceived lack of knowledge related to physical and sexual development among students with Down's syndrome can be explained by the fact that these students cannot obtain this kind of information from others as easily as other students, as they are often unable to read or understand books and magazines as sources of information. Moreover, they are not typically provided with the opportunity to learn about such issues at school (Nelson et al., 2020); thus, sexual knowledge among students with Down's syndrome is often partial, inaccurate, and contradictory (Goli et al., 2022).

In terms of the difficulties experienced by these students when introducing themselves to others and in distinguishing between proper and improper physical contact behaviors, this can be explained by the fact that students with Down's syndrome suffer from deficiencies in social skills and development (Ashour, 2019; Hatem, 2019).

As the most prevalent sexual problems faced by students with Down's syndrome related to general stages of development rather than problems that characterize the individuals themselves, it is likely that these issues can be dealt with effectively. Moreover, few of the most serious problems were rated as high, indicating the potential to reduce these problems and to help students to form healthy social ties through sexual education that is appropriate in terms of the customs and culture of Saudi society.

The study also found no differences between the responses of the parents and teachers, apart from the item 'He has difficulty expressing his desire to be alone'. This finding indicates that the sexual problems experienced by students with Down's syndrome do not differ according to the perspectives of parents and teachers, thus suggesting the generality of these problems. This result contrasts with those of Akdemir's (2022) study, which showed statistically significant differences between the responses of male and female teachers regarding the sexual problems of male adolescents with intellectual disabilities.

This study also found no correlation between sexual problems and age. This can result can be explained by the fact that although sexuality among students with Down's syndrome passes through different stages of development from childhood to puberty and adolescence, problems arise due to fear and denial throughout the different stages of life (Gutiérrez-Bermejo & Jenaro, 2022).

Statistically significant differences were found concerning variables of the program to which the students belong (special education institutes/mainstream classrooms) and the socioeconomic status of the students' families; the results showed a higher prevalence of sexual problems among students attending special education institutes and from families with a monthly income of SAR 5000-10,000.

The higher prevalence of sexual problems among students who attend special education institutes compared with those in mainstream classrooms could be explained by the fact that parents' attitudes towards mainstream programs are positive and neutral (Coward, 2022). Thus, parents tend to prefer mainstream classrooms, as they help their children to reduce behavioral problems in general and sexual problems in particular through modeling and imitation. The current result highlights the benefit of integrating mainstream programs into ordinary schools to reduce the inappropriate behaviors of students with Down's syndrome.

The finding of a higher prevalence of sexual issues among students from lower socioeconomic backgrounds raises many questions, especially in the light of the scarcity of studies addressing the impact of socioeconomic status on the emergence of inappropriate behavior patterns among individuals with special needs. However, one explanation could be the lack of resources, attention, and follow-up on the part of the family, and the lack of awareness of the requirements of sex education and how to deal with behaviors related to physical growth among students with Down's syndrome. What supports this explanation is that the most prevalent sexual problems in this study were a lack of knowledge and information regarding the changes occurring during the different stages of physical and sexual development.

Based to findings, the writer recommended to develop the parents thier knowledge of children sexual development. Develop training programs for teachers, psychologists, and social workers working in special needs care on how to identify the sexual problems experienced by intellectually disabled students, how to deal with these problems in the classroom, and how to guide students' families. Raise parents' awareness of the importance of communication and dialogue with teachers to identify the most important sexual problems their children face and collaborate to resolve them. Parents should instill confidence in their children and create dialogue within the family and help them to understand their development stages. Prepare a collective counseling program that suitable to Saudi Culture for the parents of intellectually disabled students from low socioeconomic backgrounds to help support and guide them to deal with their children sexual problems. Finally, consider demographic variables such as socioeconomic status, educational programs, and the child's age when studying the sexual problems of intellectually disabled students.

## **Conclusion**

This study provided a detailed examination of the sexual problems encountered by students with Down's syndrome, from the perspective of their parents and teachers. The findings help inform future researchers on the importance of addressing such problems before they develop further. They are also useful for professional practice in terms of devising programs to enhance the knowledge of parents and educators and, ultimately, improve the quality of life of individuals with Down's syndrome.

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