

**SEXUAL BEHAVIOR IN MALE ADOLESCENTS WITH AUTISM  
AND ITS RELATION TO SOCIAL-SEXUAL SKILLS  
IN THE KINGDOM OF SAUDIARABIA**

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*The present study aimed to identify common sexual behavior among adolescents with autism, where parents and teachers of sixty-one male adolescents from twelve to twenty-one years of age were recruited from three cities in the Kingdom of Saudi Arabia. They were asked to respond to a sexual behavior questionnaire, and a social-sexual skills questionnaire. Only teachers were asked to respond to a screening questionnaire for Asperger syndrome and other high functioning autism spectrum disorders to determine the functional level of the adolescents with autism in the sample. This resulted in thirty-two adolescents selected from the main sample; fifteen of them with high functioning autism, and seventeen with low functioning autism. Overall, both parents and teachers reported inappropriate sexual behavior expressed by the adolescents with autism. The results also showed significant correlations between both the social-sexual skills and reported sexual behaviors in all sub-tests and total scores. The high functioning adolescents with autism displayed significantly less inappropriate sexual behavior and significantly more social-sexual skills when compared to adolescents with low functioning autism.*

Adolescence is the developmental stage where humans learn about and generally first experience sexuality. This is no different in individuals with autism. One of the major concerns in the field of autism is the sexuality of adolescents since they tend to display sexual interests and a wide range of sexual behaviors (Hellmans, Roeyers, Leplae, Dewaele & Debout, 2010; Kalyva, 2010; Ruble & Dalrymple, 1993). Autism can occur in association with any level of cognitive ability and functionality. Individuals with autism are divided into two groups: individuals who have an intellectual disability are considered as having low functioning autism (LFA) while those without intellectual disability are referred to as having high functioning autism (HFA) (Mesibov & Ousley, 1991; Stokes & Kaur, 2005; Wing & Gillberg, 1999). Both HFA and LFA often display inappropriate sexual behaviors due to their social deficit, which is the most remarkable feature of the autism disorder (Bourgondien, Reichle, & Palmer, 1997; Haracopoco & Pederson, 1992). Nevertheless, only a few studies have addressed the problems and the questions of sexual behavior and the social skills associated with autism (Kaur, 2005; Realmut & Ruble, 1999; Schofield, 2004; Sullivan & Caterino, 2008). Even though they are rare, such studies could be useful for both parents and those who work in the field of autism, particularly for those dealing with adolescents.

Sexual desires normally arise when one reaches puberty, and this does not differ in the case of individuals with autism (Gabriels & Hill, 2007; Haracopoco & Pederson, 1992; Sullivan & Caterino, 2000). The way in which the sexual desires are being dealt with and expressed is one of many challenges that parents and caregivers face (Kaur, 2005). Reaching the adolescent stage increases the problems individuals with autism have to face in terms of physical changes, environmental changes and societal expectations. They frequently fail to appropriately handle these issues and thus it affects their feelings and emotions negatively. Moreover, it is well-known that social interaction with others is a necessary factor to learn proper sexual behavior, but since individuals with autism lack such experiences, they miss valuable learning opportunities (Hellemans, Colson, Verbraken, Vermeiren & Deboutte, 2007; Sullivan & Caterino, 2008). Furthermore, autism affects the way individuals make sense of the environment and how they interact with others and failing to understand society's rules, traditions and regulations which lead to unsuitable behavior which might cause social rejection from others. This may cause distress not only to adolescents with autism, but also to their parents and caregivers (Sullivan & Caterino, 2008).

Consequently, and also due to their poorly developed social skills and their lack of social understanding, many adolescents with autism are reported to show inappropriate sexual behavior in public. These inappropriate public behaviors include masturbation, rubbing their genitals, and undressing (Realmut & Ruble, 1999; Volkmar, Paul, Klin & Cohen, 2005). Haracopco and Pederson (1992), studied a group that included eighty-one adolescents with autism aged between sixteen and forty, of which 22 were HFA. In this study, Haracopco and Pederson found that 68% were masturbating, and of these, 25% would masturbate daily, and 53% would masturbate in public. They also found that the vast majority (90%) of their sample displayed inappropriate sexual behavior towards others. In another study, Stokes and Kaur (2005) compared adolescents with autism and adolescents from the general population. The results indicated that adolescents with autism showed more inappropriate sexual behavior than their peers and caused more concerns among their parents. Ruble and Dalrymple (1993) distributed a questionnaire to a sample of a hundred caregivers of individuals with autism. This questionnaire covered social-sexual awareness, sex education, and sexual behavior. These caregivers oversaw individuals with autism of which 32% females, while 68% were males. Results of the questionnaire revealed that 28% of individuals with autism undress in public, 23% masturbate in front of others, while 14% masturbate using objects and 18% touch people of the opposite sex in inappropriate ways.

It is also vital to explore the understanding and application the social skills linked to sexual behavior. Skills include washing the genitals, general hygiene and self-care, knowing whom one is allowed to kiss or hug, knowing with whom and when one is allowed to talk about sexual matters, and knowing that it is not proper to touch the genitals in public. These skills are vitally important due to their impact on both sexual behavior and their own relationships with others. Hellemans et al., (2007) have studied a group of four-twenty HFA male adolescents and found that the correct social-sexual skills were fairly well-known in theory, but the practice of them was moderate. Thus, 46% of the sample would hug and touch others, while 17% of them would pay no attention as to whether their actions caused discomfort or not. Bourgondien, Riechle and Palmer's (1997) studied 89 individuals with autism aged between 16 and 59. In this study Bourgondien, Riechle and Palmer found that 58% of their sample would masturbate, while 24% of those studied would use objects during masturbation, and 34% those studied displayed sexual behavior towards others. Lunsky and Konstantareas (1997) indicated in their study that the adolescents with autism who did not receive any training would have limited ability in determining and naming social-sexual skills. Usually such skills are acquired normally from social interactions. However, in the case of autism, organized training should be provided in order to improve those skills. Such training must take several aspects into consideration, including the adolescents' social skills, their level of functioning, their ability to understand the given information, and their cognitive skills (Lunsky & Konstantareas, 1997).

The purpose of this current study was to identify the common sexual behaviors of the adolescents with autism from the perspective of both parents and teachers, taking into consideration the adolescent's functional level which impacts on sexual behavior. This study additionally aims to differentiate between parents and teachers perspectives regarding the social-sexual skills of the adolescents, the correlations of the latter to the sexual behaviors and also how the adolescent's functional level impacts on their social-sexual skills.

Although sex may be considered a sensitive subject due to different religious, cultural and moral beliefs, the right to express the sexual needs according to society's rules and regulations should not be deprived from adolescents with autism (Sicile- Kira, 2006). Likewise, the proper training of social-sexual skills should be provided to help them interact properly within their community. In a country like Saudi Arabia, traditions and customs make it quite complicated to discuss sexual issues. Therefore, the dilemma starts when parents and caregivers find themselves in a difficult position where they need to seek help for their adolescents with autism in regards of sexual behavior. Since it is well known that if the individuals come from a traditional society where discussing sexual matters is a taboo, it makes it more difficult to acknowledge the problem and this might stand in the way of finding suitable solutions. Consequently, accepting sexuality as a natural course of life and establishing sexual education is rather a difficult task to accomplish in Saudi Arabia.

## **Method**

### *Participants*

In this study, 61 male adolescents aged 12 to 21 were recruited for this research from private centers specializing in autism in three cities: Makkah, Jeddah and Riyadh, in the Kingdom of Saudi Arabia. Administrators from each center were contacted to determine the availability of the targeted age group and the possible cooperation from both teachers and parents. This process resulted in the selection of ten centers: one in Makkah, seven in Jeddah, where one was then excluded due to credibility issues, and two in Riyadh. Each center was visited to collect the consent letters, meet with the adolescents' teachers, explain the purpose of the study, and to submit

and discuss the questionnaires. The sixty-one adolescents were from the different cities as follows: 6.4% of the sample was taken from Makkah, 52.3% from Jeddah and 41.3% from Riyadh. The information about the adolescents was obtained from 34 teachers. Some teachers filled-in more than one questionnaire and only forty-eight parents responded, where the rest of the parents did not.

Exclusion criterion was a history of sexual abuse; such information was obtained by adding an open end question to the distributed questionnaire. One individual was excluded because of a history of sexual abuse, 14 were excluded because they were not within the required age group, and six female adolescents were also excluded due to the limited number of females in comparison to the number of the male adolescents.

To determine the level of functioning among the sample, the analysis of the teacher's performance in a Screening Questionnaire for Asperger Syndrome and Other High Functioning Autism Spectrum Disorders (ASSQ) mean total score and quarters were collected as a cutoff score to identify both groups. The low quarter referred to the group who has low functioning autism while the upper quarter referred to the high functioning autism. According to this criterion thirty-two adolescents were taken from the main sample whereas fifteen of them would have HFA, and 17 would have LFA.

#### *Instruments*

Three instruments were used in this study. Two of them were constructed and developed by the researchers. The third one was *A Screening Questionnaire for Asperger Syndrome and Other High Functioning Autism Spectrum Disorders* by Ehlers, Gillberg & Wing (1999) translated by the researchers.

*Sexual Behavior Scale:* This scale was developed based upon previous studies and the issues these studies identified such as masturbation, using harmful objects, touching the genitals and homosexuality (Haracopco & Pederson, 1992; Hellemans, Colson, Verbreaken, Vermeiren & Deboutte, 2007; Mortlock, 1993; Realmuto & Ruble, 1999; Volkmar, Paul, Klin & Cohen, 2005). The scale was designed to recognize whether the adolescent displayed any sexual behavior. Subjects responded on six points scale from 0 to 5 (0= I do not know, 1= does not happen, 2= rarely, 3= sometimes, 4= often, 5= always).

The scale consisted of 32 items concentrating on three areas:

1. Masturbation: For example, time and place of masturbation, and the use of objects. These consisted of six items.
2. Inappropriate sexual behavior towards self and others: For example, touching other's private areas, kissing and hugging others, and trying to touch family members in an inappropriate way. These consisted of fourteen items.
3. Sexual stimulation: For example, unusual sources of sexual stimulation like animals and children, and the use of harmful objects to stimulate the genitals. These consisted of 12 items.

This scale also collected basic demographic variables, including age, gender and date of birth.

The researchers used constructive validity to determine the validity of the scale. This included subset interrelationships since the sexual behavior scale is suppose to measure various aspects, though not necessary same aspects as its sub-tests. Therefore, the coefficients reported a range between 0.40-0.62 which is statistically significant and moderately lends support to their validity. As for the reliability, the scale had acceptable evidence of internal consistency inter-rater (teacher and parents) where reliability is 0.81 and Cronbach alpha is 0.93.

*Social-Sexual Skills Scale:* This scale was also developed based upon previous studies and the issues these studies acknowledged i.e. Hygiene, washing after using the toilet, and proper change of underwear (Hellemans et al., 2007; Konstantareas & Lunskey, 1997; Ruble & Dalrymple, 1993). It was designed to recognize whether the adolescent knows and practices the proper social-sexual skills. Subjects responded on six points rated from 0 to 5 (0= I do not know, 1= does not happen, 2= rarely, 3= sometimes, 4= often, 5= always).

The scale consisted of twenty-one items concentrating on two areas:

1. Self-care skills: For example, proper use of toilets, the wearing of proper clothes and the washing the genitals. These consisted of 11 items.
2. Social-sexual skills: For example e, knowing whom one is allowed to kiss or hug, and knowing with whom and when one is allowed to talk to about sexual matters. These consisted of ten items.

This scale also collected basic demographic variables, including age, gender and date of birth.

The same technique of constructive validity was used with the social-sexual skills scale. The coefficient reported was 0.49 which is statistically significant and moderately lends support to their validity. As for reliability, the same technique was applied where the inter-rater (teachers and parents), where reliability 0.81; Cronbach alpha 0.87.

*ASSQ Scale: A Screening Questionnaire for Asperger Syndrome and Other High Functioning Autism Spectrum Disorders* by Ehlers, Gillberg & Wing (1999), was translated by the researchers and used in the current study. This questionnaire shows the level of functioning of adolescents with autism. It consisted of twenty-seven items and the sub-test required ratings from 0 to 2 (0= no, 1= somehow, 2= yes).

This questionnaire had acceptable evidence of good construct validity for group differentiation. One could hypothesize that the result of the test should distinguish between the two groups: adolescents with high functioning autism and adolescents with low functioning autism. Also t-test analysis was used to compare both groups in terms of sexual behavior and social-sexual skills. The results showed statistically significant differences existed between them in the sexual behavior sub-tests as well as social-sexual skills sub-tests,  $p < 0.01$ . Internal consistency was used as well with this instrument: Cronbach alpha 0.72.

## Results

### *Common Sexual Behavior*

The frequency technique was used to collect the data about the sexual behavior, which is a measurement of the presence or absence of the behavior. Frequency here reflects common sexual behavior from both parent's and teacher's perspectives in the adolescents with autism.

**Table 1. Common Sexual Behaviors**

Statements	Parents	Teachers
Using unusual objects (unharmful) to reach sexual arousal such as leather, rubber and toys	87.6%	82%
Reaching sexual arousal by looking at people's body parts	79.1%	80.4%
Undressing in public	75%	77%
Looking under people's clothes	72.9%	74%
Rubbing the body against others for sexual arousal	70.9%	75.4%
Kissing strangers	64.6%	67.3%

Table 1 lists the total percentages as reported by both parents and teachers where one can see that some sexual behaviors are more frequent than others. Some behaviors reported more frequent by teachers when compared to parents which are as followed 'Reaching sexual arousal by looking at people's body parts'; 'Undressing in public'; 'Looking under people's clothes' and 'Rubbing the body against others for sexual arousal'. Where the most frequent ones are 'Using unusual objects (unharmful) to reach sexual arousal such as leather, rubber and toys,' and 'Reaching sexual arousal by looking at people's body parts,' while 'Kissing strangers' was the least frequent among the behaviors.

### *The Relationship between Social-Sexual Skills and Sexual Behavior*

Person correlation was used to examine the relationship between the independent variables, the two sub-tests of the social-sexual skills, and the three sub-tests of the sexual behavior among the adolescents with autism. Moreover, Person correlation was used to examine the correlations between both scales in total scores.

In Table 2, significant correlations were found. The sub-tests of both social-sexual skills and sexual behavior have negative correlations in which most of the correlations vary between moderate and strong. The strongest relation was between both sexual stimulation and social-sexual skills sub-tests. The weakest one was between both 'Inappropriate sexual behavior towards self and others' and 'Self-care skills' sub-tests. Overall, the correlations between both scales in total scores are strong and negative which support the hypothesis that the better the social- sexual skills are, the less the inappropriate sexual behavior will accrue.

**Table 2. The Correlation Between Social-Sexual Sub-Tests and Sexual Behavior Sub-Tests**

<u>Social-Sexual Skills</u>	Self-Care skills	Social- Sexual Skills	Total Score for Social-Sexual Skills
Sexual Behaviors			
Masturbation	438.-**	807.-**	618.-**
Inappropriate sexual behavior towards self and others	**393.-	**708.-	**550.-
Sexual stimulation	**645.-	**833.-	**793.-
Total score for sexual behavior	**592.-	**915.-	**778.-

\*\*P &lt; 0.01

*The Differences between HFA and LFA in Sexual Behavior*

A two-sample independent t-test was computed on SPSS to determine if statistically significant differences existed between the adolescents with HFA and LFA existed in sexual behavior. The t-test, mean and SD of each group were calculated and compared.

**Table 3. The Comparison Between Adolescents with HFA and LFA in the Sexual Behavior Sub-Test**

Subtests	HFA		LFA		T test	DF	Sig
	N= 15		N=17				
	mean	SD	mean	SD			
Masturbation	15.08	4.8	17.21	2.85	1.98	30	0.05*
Inappropriate sexual behavior towards self and others	44.24	4.9	47.82	3.79	3.03	30	0.004**
Sexual stimulation	36.48	7.75	41.68	3.05	3.05	30	0.000***

Note.HFA= High Functioning Autism. LFA= Low Functioning Autism.

\*P &lt; 0.05.\*\*P &lt; 0.01.\*\*\*P &lt; 0.001

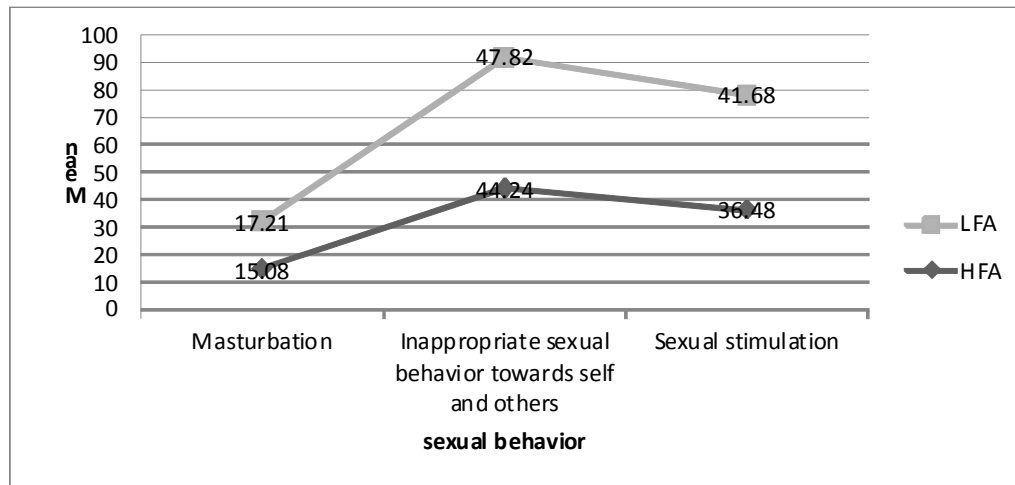
In Table 3, the results show statistically significant differences existed between adolescents with HFA and adolescents with LFA in all three sub-tests of the sexual behaviour. The mean scores of all sub-tests were higher in the adolescents with LFA in comparison to adolescents with HFA which indicated that the adolescents with LFA displayed more inappropriate sexual behaviour than did the adolescents with HFA.

In Table 4, the results show statistically significant differences existed between adolescents with HFA and adolescents with LFA in both sub-tests of the socio-sexual skills. The mean scores of both sub-tests were higher in the adolescents with HFA in comparison with adolescents with LFA which indicated that the adolescents with HFA displayed better socio-sexual skills than the adolescents with LFA.

**Discussion**

The present study expands current knowledge about sexual issues in adolescents with autism in the Kingdom of Saudi Arabia. Adolescents with autism were reported to show inappropriate sexual behavior according to several

previous studies (Kaur, 2005; Realmut & Ruble, 1999; Schofield, 2004; Sullivan & Caterino, 2008) and the current study also confirms such findings.



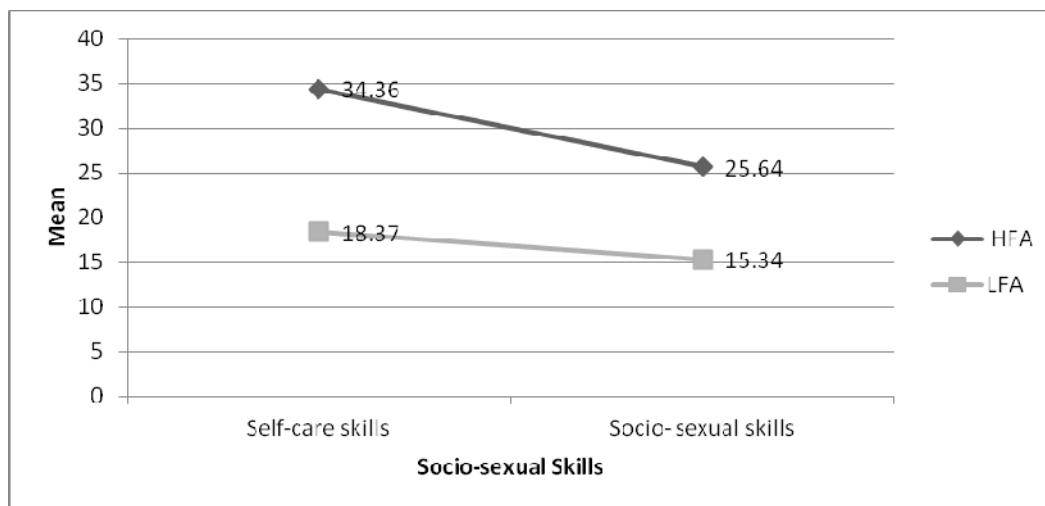
**Figure 1. Significant differences were found between adolescents with HFA and adolescents with LFA in all three sub-tests of the sexual behavior scale.**

*The Differences between HFA and LEA in Social-Sexual Skills*

**Table 4. The Comparison Between Adolescents with HFA and LFA in the Socio-sexual Skills Subtests**

Subtests	HFA N= 15		LFA N=17		T test	DF	Sig
	Mean	SD	Mean	SD			
Self-care skills	34.36	7.48	18.37	6.83	8.19	30	0.001***
Socio- sexual skills	25.64	0.82	15.34	1.64	7.89	30	0.001***

Note HFA= High Functioning Autism LFA= Low Functioning Autism\*\*\*  
 \*\*\*P=0.001



**Figure 2. Significant differences were found between adolescents with HFA and adolescents with LFA in both sub-tests of the social-sexual skills scale.**

Since sexual desires are a normal issue that appears in the adolescence stage of life, adolescents with autism would often express those desires in an inappropriate way due to the characteristics of autism itself. Lack of social interaction and confusion regarding social rules and regulations leads to unsuitable behavior unlike those in the general population who has the social skills to learn those rules and regulations and blend into the society.

Many inappropriate behaviors would arise in such stage in autistic adolescents. One of many such behaviors is undressing in public which was reported by 75% of the parents and 77% of the teachers in this study. This finding matches that the study by Ruble & Dalrymple (1993). Other inappropriate behaviors were also reported in the current study, the most common one was using unusual objects (unharmful) to reach sexual arousal such as leather, rubber and toys. This was reported by 87% of the parents and 82% of the teachers. Another behavior was reaching sexual arousal by looking at people's body parts which was reported by 79% of the parents and 80% of the teachers. These findings concur with other literature that also described inappropriate sexual behavior towards others (Bourgondien et al., 1997; Haracopco & Pederson, 1992; Hellemans et al., 2007; Ruble & Dalrymple 1993; Stokes & Kaur 2005). Therefore, the problems that face the adolescents with autism regarding their sexual matters are many; some of these stem from the lack of understanding of social rules as well as misconceptions of their personal feelings which leads to immature expression of sexual desires. Overall, the reasons behind such issues are related to the autistic disorder itself and not to culture, even though major differences do occur between cultures regarding the social regulations as stated in Bourgondien et al., (1997) where adolescents with autism were allowed to kiss, hug and hold hands which is not acceptable behavior in other cultures such as in Saudi Arabian society which is highly conservative and where public displays of affection or physical contact deemed against social mores.

Adolescents with autism do not have the ability to acquire socio-sexual skills on their own, and due to the lack of appropriate educational influences they could display inappropriate sexual behaviour which could be repressed, misunderstood, and incorrectly interpreted (Henault & Attwood, 2006; Lunsy & Konstantareas, 1997). The current study again confirms such issues which are obvious in the negative correlations between socio-sexual skills and inappropriate sexual behaviour. Therefore, the proper socio-sexual training should be provided to adolescents with autism according to their level and cognitive skills. It is the specialist's duty to explain the social rules and regulations in simple, precise detail and to establish a positive perspective on sexuality. This should be done to reach the aim of helping the adolescents with autism express their feelings in a suitable way so they could establish a positive coexistence with the society which they live in. Moreover, neglecting such matters could lead to a worse expression of sexual behaviour which increases distress on both the parents and the adolescents themselves.

Sexual desires are normal issues as mentioned before, so it is only natural that they appear regardless of the level of cognitive functioning. Consequently, in the current study, the sexual behavior occurred in both groups: adolescents with HFA and adolescents with LFA. Such findings suggest that an adolescent with autism, regardless the level of functioning, is likely to display inappropriate sexual behavior as showed in Hellemans et al., (2007) where inappropriate sexual behavior appeared in both groups.

Nevertheless, the level of functioning does influence how frequent the behavior occurs. A significant difference in the current study was found between both groups, where adolescents with HFA display less inappropriate sexual behavior than the adolescents with LFA. The same results were indicated in the studies of both Haracopco & Pederson (1992) and Stokes & Kaur (2005).

As for the social-sexual skills the same findings were anticipated where adolescents with HFA were supposed to display better social-sexual skills when compared to the adolescents with LFA. The findings of the current study confirm the hypothesis. As in previous studies (Stokes & Kaur, 2005; Mesibov & Ousley, 1991; Ruble & Dalrymple, 1993) the same findings were attained meaning that, although both groups showed weaknesses in applying social-sexual skills, the adolescents with HFA were more aware of them.

As a conclusion, different cultures have different teaching about what constitute sexual morality. The values, norms and beliefs we practice are learned from the surrounding society. Therefore, in a country like Saudi Arabia that is ruled by a traditional, conservative mores; conducting such a study was a bet of a challenge. Such paper though was necessary taking into consideration the need to highlight sexual behavior among adolescents with autism that occur in the society and the social-sexual skills related to it. The findings should assist in helping mothers and caregivers defining the inappropriate behavior; dealing with it and working to obtain solutions.

This study had some limitations though. Unfortunately, the sample of adolescents with autism was limited due to several factors. There are not enough centers specialized in autism that provide services to the targeted age group. In addition, lack of cooperation from some centers occurred. This is believed to be because of the sexual nature of this research topic which was culturally incongruous with the traditional highly conservative parameters of the society and thus not a topic to openly discuss or scrutinize. While working on this study, the researchers could not find another study that covers such a topic in Saudi Arabia. This is probably also due to the tendency in the culture of ignoring sexuality as a natural part of growth, and how humans explore their sexuality in many ways throughout different stages of their development. Moreover, the members of the Saudi society are inclined towards secrecy when addressing such a topic which applies to both individuals with special needs and the general population. As a consequence, the problems and concerns of sexuality in adolescents with autism are relatively neglected. Another limitation was the inadequate number of female autistic adolescents when compared to males.

Recommendations for future research would be to address the issues mentioned in the above limitations by perhaps trying to study a larger sample which could include female adolescents. Furthermore, some topics definitely need more research, such as the making of a comparison which could be done between male adolescents with autism and female adolescents with autism in terms of sexual behavior and social-sexual skills. Furthermore, research could be conducted regarding parental perspectives on the sexual behavior of their autistic child and the different amount of distress the parents may experience according to the gender of the autistic adolescent.

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