

## Understanding Sexual Behaviour in a Sample of 2 to 12 Years Old Egyptian Children

### Abstract

**Objectives:** To investigate types and frequencies of sexual behaviours among a sample of 2-12 years old Egyptian children and to explore out the possible factors that may be related to their occurrence.

**Design:** Mothers of 515 physically and mentally healthy children were approached to answer a questionnaire about child's behaviour. It included 3 sections; a demographic section, the Arabic version of Strengths and Difficulties Questionnaire (SDQ) used to identify positive and negative aspects in the child and a modified battery of Childhood Sex Behaviour questionnaire to assess a broad range of sexual behaviours.

**Results:** 64.5% of the whole sample gave positive responses for sexual behaviours with mean total score on Childhood Sex Behaviour questionnaire  $2.79 \pm 3.38$ . The most frequent behaviours among the whole sample were touching genitals at home (25.2%), asking about sexual acts (18.9%), using sexual words (18.3%) and touching child's genitals in public (14.2%). While the least frequent reported behaviours were touching animal genitals and trying to have sex with other children (0.6%). Some items of sexual behaviours were significantly correlated with different age groups and with gender difference. A number of demographic and home environment factors attributed to the occurrence of these behaviours were discussed.

**Conclusion:** Egyptian children exhibit a variety of sexual behaviours, many of which can be interpreted as developmentally related. Parental demographics and family adversity certainly influence the frequencies and types of observed sexual behaviours with regard to age group and gender differences.

**Keywords:** Sexual behaviour; Children; Egyptian; Pre-school; School-aged; Normative

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### Introduction

With the increasing awareness of sexual abuse in the 1980s and 1990s, attention to child sexuality has come to focus on the negative expressions of sexual behaviour [1]. Earlier studies have suggested a strong correlation between sexual abuse and sexual behaviour problems in children [2]. However, recent studies have broadened this perspective, recognizing a number of additional stressors, family characteristics, and environmental factors that are associated with intrusive and frequent sexual behaviours [3]. A number of studies were directed to study normative childhood sexuality. The reporting of these studies support the belief that children engage in a range of overt sexual behaviours which may appear as early as two years old [4-6].

Developmentally appropriate behaviours are common and frequently observed in children. Sexual behaviours that are commonly reported in children aged 2 to 5 years, without a history of abuse, include touching their genitals at home and in public, masturbating, showing their genitals to others, standing too close, and trying to look at nude people [7]. Children do not necessarily engage in sexual behaviours for sexual gratification. They may occur out of curiosity, imitation of observed sexual behaviours, attention seeking, and self-soothing. These behaviours become less common, less frequent and more secret after five years of age when they become aware of social rules regarding sexual behaviours in public and learn the social norms for concealing sexual behaviours [8]. Children can also engage in

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sexual behaviours that include other individuals, such as putting their tongue in another's mouth while kissing, rubbing their body against others, and touching children's and adults' genitals, but these behaviours are less common [7]. Normal sexual behaviours usually diminish or become less apparent with redirection and admonishment from the parent. An age-appropriate sexual behaviour can convert to a sexual behaviour problem if it becomes disruptive or coercive. For example, a three-year-old boy who touches his genitals several hours a day and cannot focus on other tasks is displaying a normative behaviour with abnormal persistence and frequency. Sexual behaviour problems also include developmentally inappropriate or intrusive sexual acts like putting the mouth on genitals, asking to engage in specific sex acts, imitating intercourse, inserting objects into the vagina or anus, and touching animal genitals. These behaviours are the least common and may be associated with other emotional and behavioural disorders in childhood. They do not necessitate that the child has been sexually abused, but require more extensive assessment and effective intervention [8].

The form of sexual behaviours among the children varies within different cultures [9,10]. Sexual and reproductive knowledge and decisions, and their consequences, are shaped by factors within the household, community, larger society, and political environment [11]. In open western cultures where family nudity, cobathing, or less privacy when dressing, going to the bathroom, or bathing or in which sexual activities are occurring openly, children are more likely to openly engage in sexual behaviours [10]. Similarly, children from homes with readily accessible pornographic materials or poor supervision of children's access to such materials may use age-inappropriate sexual language and be more prone to engage others in sexual play [8]. Among three studies of Spanish, Dutch, and Flemish, parents were asked whether they had ever seen their children engaged in sexual play or games. The rates of response varied from 53 to 78 percent in children up to 11 years of age [12-14]. In all cultures, younger children were more likely than older children to display sexual behaviours, and sexual behaviours that were rare in American children were also rare in other cultures studied [1,8,15]. In closed communities like Middle East and North Africa region, talking about sexuality is often considered a cultural taboo. Parents in these closed societies are reluctant to talk with their children about sexuality, puberty and give them the necessary information. There is a belief among these communities that talking openly about sexual and reproductive health may encourage young adolescents to have early sexual relations [16].

Unfortunately, what is meant by "normal" or "deviant" sexual behaviour is somewhat unclear [17]. Irrespective of cultural assumptions, great effort is put into defining the limits of normal sexuality in childhood compared with deviant/problematic behaviour. The solutions vary depending on both family norms and the prevailing social and cultural context [18]. Sexual development does not only include the physical changes as children grow, but also the sexual knowledge and beliefs they learn and the behaviours they show. Any given child's sexual knowledge and behaviour is strongly influenced by: the child's age, what the child observes including the sexual behaviours of

family and friends, what the child is taught including cultural and religious beliefs concerning sexuality and physical boundaries [19].

The parental report has been the most widely used method to assess sexual behaviour in children. Friedrich and colleagues [4] developed the Child Sexual Behaviour Inventory (CSBI) to assess 2-12-year-old children's behaviour connected to sexuality. They found a wide variety of sexual behaviour that appears to be normal in a study of a normative sample in the USA. Another Swedish study [20] developed a questionnaire modified from CSBI and showed similar results in preschool children. Other studies followed; Swedish, Spanish, Flemish, Dutch studies, all showed varying but similar responses [1,12,14,21].

Despite worldwide recognition of the importance of youth sexual reproductive health as an integral component of overall health and well-being, research in this area remains sparse in Arab countries especially Egypt, being one of the closed communities wherein topics related to sexuality are considered private matters that should not be discussed in public [11]. Cultural attitudes and values about sexuality, and in particular childhood sexuality, certainly hamper this kind of research [14]. Consequently, very little is known about this issue among health care providers. Thus enhancing knowledge about childhood sexuality and children's sexual experiences in the Egyptian culture became of great importance. An earlier research done on 106 Egyptian children with age range 6-12 years showed that Egyptian children displayed a broad range of sexual behaviours that occurred infrequently. The range of sexual behaviours observed and reported for girls were narrower in comparison to boys. Their reporting indicated the emergence of a marked interest in sexuality as Egyptian children approached puberty [16].

Given the need to understand normative sexual behaviour, the current research was conducted to investigate the pattern of different sexual behaviours (in terms of types and frequencies) observed by parents in a wide age range of Egyptian children from 2-12 years old and to explore out the possible factors that may be related to occurrence of these behaviours in children of Egyptian families.

## Research Methodology

### Participants

This research was a cross-sectional descriptive work carried in the period from May 2018 till June 2019. The clinical sample was obtained from the general pediatric clinic at Ain Shams University Hospitals which served a wide catchment area in Great Cairo. Mothers visiting the general pediatric clinic were asked to participate in answering a questionnaire about the behaviours of the normal healthy siblings of children attending the clinic. Mothers of 515 children were conveniently approached. Inclusion criteria included age range 2-12 years, both male and female children, apparently physically and mentally healthy children. Exclusion criteria included parental refusal to participate in the study and history of any serious/chronic medical, neurological or psychiatric disorder including intellectual disability and positive history of sexual abuse.

## Dropouts

During recruitment period, 15 children were excluded because their parents gave inconsistent history of sexual abuse while mothers of 35 children gave incomplete responses to some items of the questionnaire so they were dropped.

## Ethical consideration

This study was approved by the Ethical Medical Committee at Ain Shams University. Mothers were asked to give oral consent before administering the questionnaire.

## Measures

The questionnaire was divided into 3 sections. The first part of the questionnaire was a demographic section including child's age, sex and education level, parental education level and jobs, family economic status assessed according to Fahmy and El-Sherbini [22] and items exploring home atmosphere. The second part of the questionnaire was the Arabic version of Strengths and Difficulties Questionnaire (SDQ). The SDQ is a 25 item screening instrument used to assess positive and negative aspects of the children's behaviour (2-17 years); 5 scales of 5 items each, generating scores for conduct problems, inattention-hyperactivity, emotional symptoms, peer problems and pro-social behaviour. All scales are summed to generate a total difficulties score range from 0-40 (normal 0-13, borderline 14-16, abnormal 17 or higher). The SDQ was originally developed by Goodman [23] then translated into different languages including Arabic with good validity [24]. It exists in several versions (form 2-4 years and form 4-17 years). The SDQ was also conducted in 2 previous studies in Arabic countries [25,26]. The web site at <http://www.sdqinfo.com> provides more information and downloadable questionnaires in many languages and scoring instructions.

The third part was a questionnaire for childhood sex behaviour developed from Friedrich's Child Sexual Behaviour Inventory (CSBI) [4] together with a Swedish questionnaire for sexual behaviour [20]. Some of the original questionnaires were omitted and some were modified/rephrased to suit the Egyptian culture. These questions were translated into Arabic then back translated by a blind translator then revised by 2 psychiatric consultants to check possible distortion of meaning with good inter-rater reliability ( $\kappa=0.72$ ). The final questionnaire included 33 questions that covered different domains as sexual talk, exhibit behaviour, touching behaviours, gender identity, masturbating behaviours, sexual play and body contact with others. It was tested for readability and comprehension by 20 parents and showed good test-retest reliability (Cronbach's alpha=0.828). The newly created battery of questions was used in the present study as a basis for frequency calculations of different sexual behaviours in children and not as a scale with subscales. Parents were asked to rate the frequency of different sexual behaviours observed in the normal child over the previous six months. Rates ranged from 0='never', 1='sometimes', 2='mostly' yielding a total sum ranging from 0-66. The standardization and full validation for the psychometric properties of the questionnaire is beyond the scope of the current research. Another part of the research project is on-going for this purpose.

## Statistical procedures

All statistical analyses were performed using the SPSS version 21 software package for Windows (SPSS, Inc, Chicago, IL). Data was presented and suitable analysis was done according to the type of data obtained for each parameter; Mean, Standard deviation ( $\pm$  SD) and range for numerical data while frequency and percentage for nonparametric data. Data were analyzed using bivariate analysis, t-test, linear regression and the chi-squared test. Fisher exact test was used instead of chi-square test when one expected cell less than or equal 5. The frequencies of sexual behaviours are described in percentages. For statistical purpose, the responses of 'sometimes' and 'mostly' on the items of sexual questionnaire were coded as 'yes' indicating presence of the behaviour whereas 'never' response was coded as 'no'. In the analysis of age, children were divided into 2 groups: preschool (2-6 years), school-aged children (7-12 years). Multiple Regression Analysis was done using enter method to detect that most important variables predicting the total score of Childhood Sex Behaviour questionnaire. Significant results are presented ( $p<0.05$ ).

For the reliability of the Arabic Childhood Sex Behaviour questionnaire, Cronbach's  $\alpha$  coefficient was calculated for the whole sample, as a measure of internal consistency, to assess the interrelationship among items of child sexual behaviours and to determine if the items can be added to calculate a total score. Cronbach's alpha values when the item was deleted were also calculated.

## Results

The final participants in the present study were 465 children aged from 2 -12 years with response rate 90.2%. The final sample included 238 male children and 227 female children. The mean age of all participant children (mean  $\pm$  SD) was  $6.94 \pm 3.18$ . They were divided according to age into 2 categories; preschool (n=232) and school-aged (n=233) groups. The mean ages for preschool group was  $4.24 \pm 1.64$  and for the school-aged group was  $9.63 \pm 1.75$  ( $p$ -value= 0.000). The mean age of fathers of children participating in this study was  $37.63 \pm 7.51$  and mean age of mothers was  $34.15 \pm 6.7$ . **Table 1** shows the demographic data of the whole sample.

## Sexual behaviour reported in children

Children who scored 0 on the total score of the sexual questionnaire were 165 (35.5%) in the whole sample. The rest of the sample (n=300, 64.5%) gave total scores ranging from 1-18. Most responses were 'sometimes'; those reporting 'mostly' response were few in number. The mean total score of the Childhood Sex Behaviour questionnaire among the whole sample was  $2.79 \pm 3.38$ . All items of sexual behaviours were positively correlated with the mean total score ( $p=0.000$  for all items respectively) indicating that the questionnaire is valid. In addition, alpha coefficient was calculated for the whole study sample and showed fair reliability (Cronbach's alpha=0.784). The most frequent sexual behaviours observed among the whole sample were touching genitals at home (25.2%) followed by asking about sexual acts (18.9%), using sexual words (18.3%) and touching

his genitals in public (14.2%). While the least frequent observed behaviours were touching animal genitals and try have sex with other children (0.6% for each) (**Table 2**).

To detect possible age differences in displaying sexual behaviours, the two age groups (preschool 2-6 years and school-aged 7-12 years) were compared. The mean total score of the Childhood Sex Behaviour questionnaire was  $2.7 \pm 3.24$  for preschool group and  $2.8 \pm 3.5$  for school-aged group. Although the mean total sexual

score did not show significant difference between the 2 age groups ( $F=0.246$ ,  $p=0.62$ ), yet, the 2 groups differed significantly in the displayed frequencies of some sexual behaviours. The most significantly frequent sexual behaviours among the preschool group were touching genitals in public, touching mother's breast and holding strangers intimately. Whereas the school aged group significantly displayed more frequent asking about sexual acts, watching naked pictures, watching sexual scenes on TV, touching other genitals and masturbating with hands (**Table 3**).

**Table 1:** Socio-demographic data among the whole sample.

Socio-demographic data		N	%
Children age group	Pre-school group (2-6 years)	232	49.9%
	School group (7-12 years)	233	50.1%
Sex	Male	238	51.2%
	Female	227	48.8%
Children education	No school	55	11.8%
	Kindergarten	159	34.2%
	Primary school	222	47.7%
	Preparatory school	29	6.2%
Father's education	Elementary school	75	16.1%
	High/technical school	165	35.5%
	University	225	48.4%
Mother's education	Elementary school	72	15.5%
	High/technical school	201	43.2%
	University	192	41.3%
Father's job	Not functioning	6	1.3%
	Employee	459	98.7%
Mother's job	Housewife	311	66.9%
	Employee	154	33.1%
Socioeconomic class	Low or very low	214	46%
	Middle	230	49.5%
	High	21	4.5%
Strength & difficulty questionnaire	Normal	365	78.5%
	Borderline	60	12.9%
	Abnormal	40	8.6%

**Table 2:** Frequency of sexual behaviour in children among the whole sample.

Child sexual behaviour	Frequency	Child sexual behaviour	Frequency
Child asks about sexual act	88 (18.9%)	Touching adult genitals	9 (1.9%)
Ask about his genitals	56 (12%)	Touching mother breast	55 (11.8%)
Using sexual words	85 (18.3%)	Want to be other gender	15 (3.2%)
Ask about sex more than other children	41 (8.8%)	Want to wear other gender clothes	44 (9.5%)
Ask strangers to have sex	14 (3%)	Mimic other gender	47 (10.1%)
Taking off his clothes in front of others	17 (3.7%)	Masturbate in public	12 (2.6%)
Try to watch naked pictures	49 (10.5%)	Friction against other people	33 (7.1%)
Want to watch others naked	45 (9.7%)	Masturbate with hands	33 (7.1%)
Watching sexual scenes on TV	47 (10.1%)	Masturbate with objects	9 (1.9%)
Try to remove other clothes	26 (5.6%)	Playing sex with toys	12 (2.6%)
Show his genitals to adults	28 (6%)	Draw genitals	4 (0.9%)
Show his genitals to other children	63 (13.5%)	Put things on vagina/anal	6 (1.3%)
Touching his genitals at home	117 (25.2%)	Kiss other children using tongue	19 (4.1%)
Touching his genitals in public	66 (14.2%)	Kiss adults using tongue	17 (3.7%)
Touching animal genitals	3 (0.6%)	Try have sex with other children	3 (0.6%)
Touching other children genitals	18 (3.9%)	Hold strangers intimately	9 (1.9%)
		Need physical contact	54 (11.6%)

## Gender difference in displaying sexual behaviours

There were few statistically significant differences between boys and girls in the observed sexual behaviours reported by mothers. Boys showed significant frequent usage of sexual words, trying to move other clothes and showing their genitalia to other children compared to girls. While girls showed more tendencies to wear other gender clothes compared to boys. The total mean score of the childhood sex behaviour questionnaire was  $3.2 \pm 3.49$  for boys and  $2.3 \pm 3.2$  for girls. The total mean sexual score was significantly correlated with gender difference ( $t=2.879$ ,  $df=463$ ,  $p\text{-value}=0.004$ ) indicating that boys have a statistically significantly more overt sexual behaviours than girls (Table 4).

## Relation between strengths and difficulties in children and sexual behaviours

No significant correlations could be found between any of

sexual behaviours and responses of Strength and Difficulties questionnaire (SDQ). The mean total sexual score did not correlate with SDQ responses ( $F=0.792$ ,  $df= 17$ ,  $p=0.7$ ). Neither age group nor gender difference showed any significant correlation with Strength and Difficulties questionnaire ( $\chi^2= 4.38$ ,  $p=0.1$  and  $\chi^2= 2.163$ ,  $p=0.3$  respectively).

## Effects of demographic variables and home atmosphere on children sexual behaviours

By analysing attitudes and habits inside home atmosphere, mothers reported occurrence of semi-naked habits (13.1%), watching pornography (10.3%), home violence (53.1%) and sexual talk (9%) in the current sample. The mean total sexual score was positively correlated with home violence ( $F=5.633$ ,  $R^2=0.01$ ,  $p=0.01$ ), semi-naked clothes ( $F=6.073$ ,  $R^2=0.01$ ,  $p=0.01$ ) and watching poronography ( $F=4.66$ ,  $R^2=0.01$ ,  $p=0.03$ ). Specifically, these habits were positively correlated to items as asking about sexual act, asking about sex more than other

**Table 3:** Types and frequencies of sexual behaviours among preschool and school-aged children.

Type of sexual behaviour in children	Preschool 2-6 yrs (n=232)	School-aged 7-12 yrs (n=233)	Chi	p-value
	Yes	Yes		
child asks about sexual act	30 (12.9%)	58 (24.9%)	10.841	0.001
ask about his genitals	24 (10.3%)	32 (13.7%)	1.261	0.2
Using sexual words	39 (16.8%)	46 (19.7%)	0.66	0.4
Ask about sex more than other children	17 (7.3%)	24 (10.3%)	1.278	0.2
Ask strangers to have sex	8 (3.4%)	6 (2.6%)	0.304	0.3
Taking off his clothes in front of others	9 (3.9%)	8 (3.4%)	0.06	0.7
Try to watch naked pictures	10 (4.3%)	39 (16.7%)	19.046	0.000
Want to watch others naked	24 (10.3%)	21 (9%)	0.236	0.6
Watching sexual scenes on TV	12 (5.2%)	35 (15%)	12.411	0.000
Try to remove other clothes	10 (4.3%)	16 (6.9%)	1.439	0.2
Show his genitals to adults	17 (7.3%)	11 (4.7%)	1.396	0.2
Show his genitals to other children	36 (15.5%)	27 (11.6%)	1.532	0.2
Touching his genitals at home	63 (27.2%)	54 (23.2%)	0.978	0.3
Touching his genitals in public	43 (18.5%)	23 (9.9%)	7.164	0.007
Touching animal genitals	2 (0.9%)	1 (0.4%)	0.34	0.5
Touching other children genitals	4 (1.7%)	14 (6%)	5.735	0.017
Touching adult genitals	5 (2.2%)	4 (1.7%)	0,118	0.4
Touching mother breast	36 (15.5%)	19 (8.2%)	6.043	0.014
Want to be other gender	7 (3%)	8 (3.4%)	0.669	0.7
Want to wear other gender clothes	211(50.1%)	22 (50%)	0.000	0.9
Mimic other gender	25 (10.8%)	22 (9.4%)	0.228	0.6
Masturbate in public	8 (3.4%)	4 (1.7%)	1.386	0.2
Friction against other people	12 (5.2%)	21 (9%)	2.601	0.1
Masturbate with hands	11 (4.7%)	22 (9.4%)	3.896	0.048
Masturbate with objects	2 (0.9%)	7 (3%)	2.811	0.09
Playing sex with toys	4 (1.7%)	8 (3.4%)	1.351	0.2
Draw genitals	1 (0.4%)	3 (1.3%)	1	0.3
Put things on vagina/anal	3 (1.3%)	3 (1.3%)	0.00	0,6%
Kiss other children using tongue	10 (4.3%)	9 (3.9%)	0.059	0.8
Kiss adults using tongue	11 (4.7%)	6 (2.6%)	1.549	0.2
Try have sex with other children	2 (0.9%)	1 (0.4%)	0.340	0.5
Hold strangers intimately	8 (3.4%)	1 (0.4%)	5.583	0.018
Needs physical contact	30 (12.9%)	24 (10.3%)	0.784	0.3
Total score mean $\pm$ SD	2.7 $\pm$ 3.24	2.8 $\pm$ 3.5		

**Table 4:** Types and frequencies of sexual behaviours among male and female children.

Type of sexual behaviour in children	Boys (n=238)	Girls (n=227)	Chi	p-value
	Yes	Yes		
Child asks about sexual act	51 (21.4%)	37 (16.3%)	1.992	0.1
Ask about his genitals	31 (13.0%)	25 (11%)	0.444	0.5
Using sexual words	67 (28.2%)	18 (7.9%)	31.805	0.000
Ask about sex more than other children	22 (9.2%)	19 (8.4%)	0.11	0.7
Ask strangers to have sex	7 (2.9%)	7 (3.1%)	0.008	0.5
Taking off his clothes in front of others	8 (3.4%)	9 (4%)	0.12	0.7
Try to watch naked pictures	25 (10.5%)	24 (10.6%)	0.001	0.9
Want to watch others naked	28 (11.8%)	17 (7.5%)	2.43	0.1
Watching sexual scenes on TV	30 (12.6%)	17 (7.5%)	3.347	0.06
Try to remove other clothes	19 (8%)	7 (3.1%)	5.283	0.02
Show his genitals to adults	19 (8%)	9 (4%)	3.315	0.06
Show his genitals to other children	45 (18.9%)	18 (7.9%)	11.955	0.001
Touching his genitals at home	66 (27.7%)	51 (22.5%)	1.71	0.1
Touching his genitals in public	35 (14.7%)	31 (13.7%)	0.105	0.7
Touching animal genitals	2 (0.8%)	1 (0.4%)	0.29	0.5
Touching other children genitals	10 (4.2%)	8 (3.5%)	0.143	0.7
Touching adult genitals	6 (2.5%)	3 (1.3%)	0.881	0.2
Touching mother breast	32 (13.4%)	23 (10.1%)	1.223	0.2
Want to be other gender	11 (4.6%)	4 (1.8%)	3.044	0.08
Want to wear other gender clothes	29 (2.2%)	15 (6.6%)	4.218	0.04
Mimic other gender	26 (10.9%)	21 (9.3%)	.358	0.5
Masturbate in public	3 (1.3%)	9 (4%)	3.380	0.06
Friction against other people	15 (6.3%)	18 (7.9%)	0.466	0.4
Masturbate with hands	15 (6.3%)	18 (7.9%)	.466	0.4
Masturbate with objects	5 (2.1%)	4 (1.8%)	0.07	0.7
Playing sex with toys	6 (2.5%)	6 (2.6%)	0.007	0.9
Draw genitals	3 (1.3%)	1 (0.4%)	0.916	0.3
Put things on vagina/anal	5 (2.1%)	1 (0.4%)	2.515	0.1
Kiss other children using tongue	13 (5.5%)	6 (2.6%)	2.356	0.1
Kiss adults using tongue	10 (4.2%)	7 (3.1%)	0.412	0.5
Try have sex with other children	2 (0.8%)	1 (0.4%)	0.29	0.5
Hold strangers intimately	6 (2.5%)	3 (1.3%)	0.881	0.3
Needs physical contact	30 (12.6%)	24 (10.6%)	0.468	0.4
Total score mean $\pm$ SD	3.2 $\pm$ 3.49	2.3 $\pm$ 3.2		

children, taking off clothes in front of others, try to watch naked pictures, watching sexual scenes on TV, touching his genitals at home, want to be other gender, wearing other gender clothes, mimic other gender and kiss other children using tongue (**Table 5**).

On the other hand, the mean total sexual score was positively correlated with demographic variables as mother education and socioeconomic class ( $F=1.824$ ,  $p=0.02$  and  $F=2.226$ ,  $p=0.003$  respectively). These demographics were correlated with sexual behaviours as trying to remove other clothes, showing genitals to other children, touching mother breast, friction against other people, masturbate with hands, kiss other children using tongue, needs physical contact. Their occurrence was more significant among middle social class and with high school maternal education (**Table 6**).

Multiple regression analysis using enter method was done to detect the most important factors that can affect the total

sexual score in the studied children. Independent variables included age, gender, social class, mother education, semi-naked habits at home, watching pornography, home violence. Results were significant ( $F=4.74$ ,  $R^2=0.068$ ,  $p=0.000$ ) accounting for approximately 6% of the explained variance. The most important factor that can predict total sexual score was gender ( $p=0.003$ ).

## Discussion

Over the past years, a lot of researches had been done to follow up the sexual behaviours in children and factors related to their occurrence [27]. Although studying patterns of sexual behaviours in children has recently come into focus in developed countries [19], yet, this issue has been underestimated and under-looked in Arabic societies including the Egyptian one. Many factors owe to this underestimation relating to cultural and religious causes. The current study aimed at addressing the lack of knowledge in the field of normal sexual behaviour in Egyptian children aged 2 to

**Table 5:** Correlations between children sexual behaviours and home atmosphere.

Family/child habits Sexual behaviour (yes response)	Home atmosphere		Chi	p-value		
	Semi-naked habits at home					
	No	Yes				
Child asks about sexual act	70 (79.5%)	18 (20.5%)	5.126	0.02		
Ask about sex more than other children	28 (68.3%)	13 (31.7%)	13.633	0.000		
Try to watch naked pictures	35 (71.4%)	14 (28.6%)	11.476	0.001		
Watching sexual scenes on TV	34 (72.3%)	13 (27.7%)	9.7	0.002		
Touching his genitals at home	93 (79.5%)	24 (20.5%)	7.5	0.006		
Mimic other gender	36 (76.6%)	11 (23.4%)	4.854	0.02		
<b>Watching pornography</b>						
		No	yes			
Child asks about sexual act	71 (80.7%)	17 (19.3%)	9.488	0.002		
Taking off his clothes in front of others	12 (70.6%)	5 (29.4%)	6.946	0.008		
Try to watch naked pictures	38 (77.6%)	11 (22.4%)	8.701	0.003		
Watching sexual scenes on TV	34 (72.3%)	13 (27.7%)	16.977	0.000		
Want to be other gender	10 (66.7%)	5 (33.3%)	8.866	0.003		
Want to wear other gender clothes	33 (75.0%)	11 (25.0%)	11.31	0.001		
Mimic other gender	38 (80.9%)	9 (19.1%)	4.4	0.03		
<b>Home violence</b>						
		No	yes			
Child asks about sexual act	31 (35.2%)	57 (64.8%)	5.92	0.01		
Try to watch naked pictures	15 (30.6%)	34 (69.4%)	5.822	0.01		
Want to wear other gender clothes	14 (31.8%)	30 (68.2%)	4.428	0.03		
Kiss other children using tongue	4 (21.1%)	15 (78.9%)	5.307	0.02		
<b>Exposure to sexual talks at home</b>						
		No	Yes			
Mimic other gender	39 (83%)	8 (17%)	4.061	0.04		

**Table 6:** Correlation between frequency of children sexual behaviour and demographic factors.

Sexual behaviour (yes response)	Demographic factors			Chi	p-value		
	Socioeconomic class						
	Low/very low	Middle	High				
Try to remove other clothes	9 (34.6%)	13 (50%)	4 (15.4%)	7.983	0.01		
Show his genitals to other children	13 (20.6%)	41 (65.1%)	9 (14.3%)	29.199	0.000		
Touching mother breast	11 (20.0%)	42 (76.4%)	2 (3.6%)	18.411	0.000		
Friction against other people	7 (21.2%)	21 (63.6%)	5 (15.2%)	15.090	0.001		
Masturbate with hands	10 (30.3%)	19 (57.6%)	4 (12.1%)	6.929	0.03		
Kiss other children using tongue	17 (89.5%)	2 (10.5%)	0 %	15.093	0.001		
Needs physical contact	12 (22.2%)	38 (70.4%)	4 (7.4%)	14.05	0.001		
<b>Mother education</b>							
		elementary	High/technical school	university			
Child asks about sexual act	8 (9.1%)	48 (54.5%)	32 (36.4%)	6.721	0.03		
Show his genitals to other children	2 (3.2%)	13 (20.6%)	48 (76.2%)	37.232	0.000		
Touching mother breast	4 (7.3%)	14 (25.5%)	37 (67.3%)	17.472	0.000		
Friction against other people	3 (9.1%)	4 (12.1%)	26 (78.8%)	20.984	0.000		
Kiss other children using tongue	3 (15.8%)	16 (84.2%)	0%	15.878	0.000		
Needs physical contact	5 (9.3%)	14 (25.9%)	35 (64.8%)	13.947	0.001		

12 years. It is important to provide a better basis for determining which sexual behaviours are common and which are uncommon among boys and girls, in addition to factors that may affect those behaviours.

Previous studies reported that children normally exhibit a wide range of sexual behaviour at varying levels of frequency [1,4-

7,16,28]. Findings from the current study were also supportive to this notion. The overall frequency of displaying sexual behaviours (at least one or more sexual behaviour) in the current sample was 64.5%. Comparatively, Larson and Svedin [1] reported more than 40% of the children to have shown one or more of seven sexual behaviours. In the current study, most positive responses were 'sometimes' and very few of them were 'mostly'. Possibly,

parents in the Egyptian culture, being a conservative one, are very sensitive to and obsessive about sexual issues especially if it concerns their children resulting in high frequency of reporting than other studies. Generally, parents in the Egyptian culture are characterised by close supervision and follow up for their children. Likewise, Mostafa and colleagues [16] noted that the observed sexual behaviours among their sample of Egyptian children, in general, were to occur infrequently. The most frequent sexual behaviours observed in the current study among whole sample were touching genitals at home (25.2%), asking about sexual acts (18.9%), using sexual words (18.3%) and touching own genitals in public (14.2%) which appear to be normal. Age appropriate sexual behaviours occur spontaneously, infrequently, voluntarily and without strong feelings of anger or other negative emotions. They are typically limited to looking and touching their body parts and mostly motivated by curiosity not abnormal a preoccupation [17].

Furthermore, age related differences in displaying sexual behaviours were emphasized by other studies [1,6,9,10,29]. In contrast to Friedrich and colleagues [7], preschool and school-aged children, in the current study, failed to show significant differences in the mean total sexual score. However, they differed significantly in the types of displayed sexual behaviours and in the frequencies at which they occurred. The preschool group showed more frequent touching genitals in public, touching mother's breast and putting mouth on other's genitals. These findings were similar to that of Larsson and Svedin [1] with variation in reported frequencies that may be related to cultural differences. Earlier, Rosenfeld and colleagues [30] reported more frequent touching of the mother's breasts or genitals in preschool children which may reflect a gender difference in daily physical contact with the child, but may also be interpreted as a result of the perception of the respondent's gender [1].

On the other hand, the school aged (7-12 years) group in the current study were more frequently engaged in asking about sexual acts, watching naked pictures, watching sexual scenes on TV, touching other genitals and masturbating with hands. These age related differences between both groups point developmentally to sexual maturation and socialization that occur in older children. Mostafa and colleagues [16] reported that commonly observed sexual behaviours among 6-12 years Egyptian children were genital manipulation (21.7%), sexual knowledge (20.8%), followed by sexual media pleasure (17.9%), sexual talking (13.2%) and sexual drawing (13.2%). Many sexual behaviours are developmentally related. Talking about sex is a behaviour which increases with age perhaps indicating a growing interest in sex as the child grows older [9]. Masturbatory behaviours were recalled by college students to be experienced before puberty at age of 10-12 [31]. Collectively, findings from the current study in addition to other studies reflect the sexual curiosity normally seen among older (prepubertal) children before entering into puberty.

Nevertheless, behaviours as touching animal genitals and try have sex with other children were the least frequent in the current sample (**Table 2**). Other intrusive behaviours as touching the

genitals of adults and putting objects on vagina/anal showed low frequencies. Consistently, Mostafa and colleagues [16] reported that intrusive or aggressive sexual behaviours that involved requesting, planning, or forcing other children and adults into sexual activity were not observed. These behaviours are unusual and rare and if they occur they are considered problematic or developmentally inappropriate [32]. They do not necessarily indicate that children have been sexually victimized [33]. However, they may indicate that professionals should pay closer attention to the adversities that may lead to their development [32].

Importantly, family contexts play a role in sexual development and the origins of child sexual behaviour problems [7,9]. The extents to which parents accept and view normality of sexual feelings and curiosity in children affect their ratings for their children's sexual behaviours. In agreement with this notion, Larsson and Svedin [1] found a significant relationship between openness of the family habit index and the level of reported sexual behaviour. Children's sexual behaviour should be interpreted in light of individual and family variables. Parents in the current study reported occurrence of semi-naked habits at home (13.1%), watching pornography (10.3%), home violence (53.1%) and sexual talk (9%). These family adversities were positively correlated with the mean total sexual score. Pornography has a particularly large effect on one's attitudes and behaviours [34]. Family sexuality and attitudes toward nudity; exposure to sexual acts or materials; extent of supervision; stressors, including violence can negatively impact family relationships and increase the frequency of reported sexual behaviours [35]. The current results showed that these family adversities were positively correlated to some sexual behaviours that reflect sexual talk, exhibitionism, touching behaviours and gender identity issues (**Table 5**). Egyptian children, like other children, watch Arabic cartoons either on TV or internet. These cartoons commonly have indirect sexual themes and inappropriate wording which is an important source for sexual knowledge at young age. Thus children's sexual behaviour reflects the environment in which they grow up. In their study, Larsson and Svedin [1] reported 77% of families use slang expressions for child's genitals and 30% of mothers speak to the child about sexual matters. Friedrich et al.'s [4,5,10] reported significant relations between family violence and sexuality (nudity, opportunities to witness sexual intercourse and look at pornographic magazines/movies, co-sleeping, and co-bathing) and higher levels of sexual behaviour in children of these families.

Additionally, the socioeconomic level and mother education in the current study were also positively correlated to other sexual behaviours as trying to remove other clothes, showing genitals to other children, touching mother breast, friction against other people, masturbate with hands, kiss other children using tongue, needs physical contact (**Table 6**). These behaviours were more related to middle social class and to lower maternal education level. Parental education and socioeconomic level are directly related to parental habits [1] and practices with their children that are reflected on child's sexual behaviour. Mothers are the cornerstone in the parenting process. Lower

maternal education and lower socioeconomic states are usually associated with coercive parenting, poor parental monitoring, and violent discipline that may all lead to the development of child externalizing behaviours including sexual behavioural problems [16,36]. A high percentage of mothers in the current study were housewives (66.9%) and had high school education (43%) which may also contribute to more contact with their children observing their behaviours or struggling with disruptive parenting. Agreeing with this notion, Mostafa and colleagues [16] reported that shelters, poor sanitation and low educated mothers were independent predictors of more frequent sexual behaviour in Egyptian children.

Moreover, previous studies highlighted gender differences in observed children sexual behaviours [1,9]. Boys generally showed more exhibitionistic behaviours than girls. However, studies differed in reporting the type of exhibitionistic behaviour for each gender which may be culturally related. Consistent with other studies, boys in the current study were more frequently observed trying to move other clothes, showing their genitalia to other children with frequent usage of sexual words. Whereas girls were more likely to wear other gender clothes than boys (**Table 4**). Gender difference also predicted the mean total sexual score. Comparatively, Larsson and Svedin [1] reported that boys masturbate more frequently, touch their own genitals more often at home and in public, and dress like opposite sex and girls rub their bodies against objects or people more than boys do. While Kastbom and colleagues [9] reported that girls tended to have more physical contact (hugs and kisses) and boys more often touch genitals at home and in public and also more often explore body and genitals. In addition to cultural difference in the accepted gender role behaviours, the controversies between these studies could be also attributed to age related difference of the studied group; Larsson and Svedin [1] report on gender differences was in the preschool age group (3-6 years); Kastbom and colleagues [9] report on gender differences was in the school age group (7-12 years). Whereas the gender difference found in the current study was among a wide age range (2-12 years).

Strikingly, results from the current study showed no relation between scores of Strength and Difficulties questionnaire and neither any of individual sexual behaviours nor with the mean total sexual score. This finding was contrasting to that reported by other studies [1,7,9] which indicated a positive relation between general child's behaviour problems and exhibiting sexual behaviours. The majority of children in the current study (78.5%) scored under 14 on SDQ and only few (8.6%) had abnormal scores without any significant correlation to age group or sex difference. This may probably account for this negative finding in comparison to other studies.

Last, but not least, the response rate in the current study was 90.2% which is highly satisfactory given the sensitive nature of discussing sexual issues and the conservative structure of the Egyptian culture when compared to other studies [1,4-6,9]. This unexpected high rate may be attributed to the cultural changes that occurred in the Egyptian society during the last decade with the openness's introduction of internet and social media.

The increase in the amount of exposure to sexual images in the public realm during recent years almost certainly influences both children's and adults' views of what constitute healthy sexual development. These changes in society in turn affect how adults respond to children's actual behaviour.

## Conclusion

The findings from the current study together with the reporting of Mostafa and colleagues [16] enhance the growth of knowledge and understanding of the pattern of normal sexuality in the Egyptian children. These reports have important implications for clinicians and professionals dealing with parental complaints of sexual behaviour in their children. Egyptian children show a variety of sexual behaviours, many of which can be interpreted as developmentally related. Parental demographics and family adversity certainly influence the frequencies and types of observed sexual behaviours with regard to age related and gender differences.

## Clinical Implications from this Study

The current study spots light on the importance of raising general awareness concerning a sensitive topic related to childhood sexuality for both clinicians and parents and even children themselves. Clinicians and mental health providers can play crucial role in assessment of child's sexual behaviours during health maintenance visits. A detailed history can assist in differentiating between normative age-appropriate sexual behaviour and sexual behaviour problems and evaluating contributory factors, such as conduct and behaviour disorders in the child, violence, abuse, nudity and neglect at home. If sexual behaviours are normal and age-appropriate, clinician can provide parental reassurance and guidance for appropriate responses like distraction or redirecting the behaviour. If sexual behaviours are escalating, frequent, or intrusive, a more comprehensive assessment and treatment may be needed.

Since appropriate parental responses are the key to managing childhood sexual behaviours, parental awareness for dealing with such behaviours can be additionally conveyed through mass media or awareness campaigns discussing Internet safety and prevention of youth access to sexual material. Furthermore, sex education and redirection for children at school can also be incorporated through character building lessons and religious classes.

## Strengths and Limitations

Although the current study approached a potentially satisfactory number of participants in comparison to Mostafa and colleagues [16], yet, a number of limitations should be stated. The first of these was facing difficulties in encouraging parents to talk freely about their child sexuality and many of them refused to participate in the study or gave incomplete answers. A second limitation, as with most studies in this area, is that all the data are based on parents' observations and not on interviews or direct observation of the children. Reported behaviour certainly does not always represent the true frequency of behaviour. As

children grow older, their integrity and need of privacy increases so parents do not know what the child is doing all of the time. They report only what they observe and not all of the child's sexual behaviours. Third, despite the precaution in excluding children with history of sexual abuse, still the sample may have contained sexually abused children because there is no guarantee that children raised up in home environment with adversities like nudity, violence and exposure to sexual themes might have been exposed to verbal sexual abuse which is far more common and underreported in these environments rather than frank physical sexual abuse. Since the definition of normality of any behaviour is largely culturally based, still more research in the area of childhood sexuality is highly needed on larger scales to include urban and rural children and children representing Upper

and Lower Egypt to deepen understanding of sexual behaviour in Egyptian children as they differ in their cultural views and acceptance of childhood sexuality. Future studies should also compare patterns of sexual behaviour between non-abused and abused children for more understanding of both normative and deviant sexual behaviour in Egyptian children.

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## Conflict of Interest

The authors declare that they have no conflict of interest.

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