ORIGINAL ARTICLE

Medico-Legal evaluation of child sexual abuse over a six-year period from 2004 to 2009 in the Suez Canal area, Egypt

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KEYWORDS
Sexual assault;
Risk factors with sexual assault;
Child sexual assault in Suez Canal area in Egypt

Abstract  Background: Sex crimes are complex and multidimensional; over the past few decades, child sexual abuse has gained public attention and become one of the most high-profile crimes. Since the 1970s, sexual abuse of children and child molestation has increasingly been recognized as deeply damaging to children and unacceptable for society as a whole.

Methods: This is a retrospective and prospective study evaluating sexual assault against children in the Suez Canal area in Egypt from 2004 to 2009, assessing the prevalence of sexual assault and associated factors among its victims. Examination was carried out in the Medico-Legal department of Ministry of Justice, Suez Canal area including Ismailia, Port-Said, El-Suez, and North Sinai cities.

Results: There were 128 cases in the age range of 5–18 years (53.9% girls and 46.1% boys). Of these cases, 88.3% were between 10 and 18 years old, and 11.7% were between 5 and 10 years old. Those living in urban areas comprised 83.6% of the cases, and 16.4% lived in rural areas. Intra-familial assailants comprised 13.3% of the cases, while 86.7% were extra-familial to the victims. Examination was carried out in the Medico-Legal department of Ministry of Justice, Suez Canal area including Ismailia, Port-Said, El-Suez, and North Sinai cities.

Results: There were 128 cases in the age range of 5–18 years (53.9% girls and 46.1% boys). Of these cases, 88.3% were between 10 and 18 years old, and 11.7% were between 5 and 10 years old. Those living in urban areas comprised 83.6% of the cases, and 16.4% lived in rural areas. Intra-familial assailants comprised 13.3% of the cases, while 86.7% were extra-familial to the victims. From the intra-familial cases, 35.3% of the cases were incest against girls and 29.4% cases were intra-familial sodomy against boys. In 63.1% of the cases, the assailants were unknown to the victim; 18.7% reported sexual assault by more than one attacker, and 7.1% of cases reported sexual assault combined with physical assault. The most frequently reported types of abuse were anal assault

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1. Introduction

Childhood is considered a development period with high vulnerability to physical and psychosocial risks. Child abuse is a violation of a child’s basic human rights and is the outcome of a set of interrelated familial, social, psychological, and economic factors. The problem of child abuse and human rights violations is one of the most critical matters on the international human rights agenda. Sexual abuse occurs when a child is engaged in sexual activity that he or she cannot comprehend, for which he or she is developmentally unprepared, and cannot give consent. Child sexual abuse can take place within the family, by a parent, step-parent, sibling, or other relative; or outside the home such as by a friend, neighbor, childcare person, teacher, or stranger. When sexual abuse occurs, a child can develop a variety of distressing feelings, thoughts, and behaviors. Sexual abuse includes a spectrum of activities ranging from rape to physically less-intrusive sexual abuse. Sexual activities may include all forms of oral-genital, genital, or anal contact, or child abuse that does not involve contact such as exhibitionism, voyeurism, or using the child in the production of pornography. Injury from child sexual abuse ranges depending on the age and size of the child and the degree of force used. Child sexual abuse may cause internal lacerations and bleeding in severe cases, and damage to internal organs that, in some cases, may cause death.

Child sexual abuse can result in both short-term and long-term harm, including psychopathology in later life. Psychological emotional, physical, and social effects include depression, anxiety eating disorders, poor self-esteem, post-traumatic stress disorder, school/learning problems, behavior problems including substance abuse, destructive behavior, criminality in adulthood, and suicide.

Child sexual abuse is outlawed nearly everywhere in the world, generally with severe criminal penalties, including, in some jurisdictions, life imprisonment or capital punishment. Statutory rape is defined as adult sexual intercourse with a child below the legal age of consent and is based on the principle that a child is incapable of consent and that any apparent consent by a child is not considered to be legal consent.

In Egyptian law, adultery includes incest. Incest is sexual activity between close family members. It is a taboo in most societies, a criminal offense, and an impediment to marriage as well as being opposed by most religions.

The exact definition of “close family member” varies widely: Some jurisdictions consider only those related by birth, others also those related by marriage, and some prohibit relations only with nuclear family members as well as ancestors or descendants, while others prohibit relations with aunts and uncles, nephews, and nieces. In Egyptian law, “close family members” are all previously stated relationships.

Article 267 of the Egyptian Penal Code states: “The one who is involved in sexual relations with a female without her consent shall be punished by hard labor for life if the offender is the victim of assets or of the persons entrusted with cultured or observed or who have authority over her or was a servant or of the aforementioned persons shall be punished by hard labor for life”. Investigation of child sexual assault cases is carried out in Egypt as follows: The parents or guardians of a child who has been sexually assaulted report the situation to the police, and the police refer them to the Judge Advocate, who refers them to the Medico-Legal department of Ministry of Justice to examine the child and write the Medico-Legal report. After attaining the guardian consent’s and the child’s assent, the forensic doctor deals with the case by getting a full history, the story in her or his own words without interruption, comparing what she or he has said with any story previously given to the police. She or he is then asked about the mode of attack and any violence applied. There is general and local examination of the assaulted child and the same with the accused person(s). Samples are gathered and sent to the Medico-Legal laboratory. After obtaining all these data, the forensic doctor makes a report about the case and sends it to the chair of the Medico-Legal department for revision and final decision.

2. Subjects and method

This study covers the period of 2004–2009. All cases of child sexual offenses referred to the Medico-Legal department of Ministry of Justice, Suez Canal area, were examined after authority approval. These cases were referred to the Medico-Legal department of Ministry of Justice by the Judge Advocate. Cities representing the Suez Canal area include Port-Said, Ismailia, El-Suez, and EL-Areej city “North Sinai”. Confidentiality regarding individual’s identities was maintained by exclusive use of register numbers for retrieval of all information. One hundred and twenty-eight cases of alleged child sexual assault of both sexes were reviewed retrospectively based on analyses of all Medico-Legal reports related to complainants during the period 2004–2008. A prospective study was done on 11 cases from 2009 after taking the victims’ guardians’ consent. Every case either retrieved from reports or examined at the office makes a report about the case and sends it to the chair of the Medico-Legal department for revision and final decision.

- Age, sex, residence, and mental state of the victims.
- History of assault: Scene, number of assailants, type of act, type and site of injuries, post incident of event and relation between the victims and assailants.
Examinations: General examination including evidence of general violence, local examination of genitalia and anus, including evidence of local violence.

Statistical analysis of all cases.

3. Results

In the present study, 128 cases were eligible to the survey. There were 27, 23, 19, 31, and 17 cases of assaults in years 2004, 2005, 2006, 2007, and 2008, respectively. These cases were reviewed from the files of Medico-Legal department of Ministry of Justice, Suez Canal area. In 2009, 11 cases were examined at the office just after assault. All the 128 child victims included in the study are alive.

Fig. 1 shows that 69 cases (53.9%) were girls and 59 (46.1%) were boys. Table 1 shows the classification of sexual assault child victims according to age groups in the Suez Canal area from 2004 to 2009, where the ages of victims ranged from 5 to 18 years. One hundred and thirteen of the cases (88.3%) were above 10 years old – 11 of which were in 2009 – and only 15 cases (11.7%) were under 10 years old. Five cases (16.1%) of them were in 2007.

Fig. 2 shows that only 5 victims (3.9%) were suffering from mental illnesses while the rest of the 123 victims (96.1%) had normal mentality.

Table 2 shows the distribution of sexual assault child victims according to victims’ residency from 2004 to 2009. From the studied cases, 107 cases (83.6%) were living in urban areas, with 17 cases (100%) in 2008 and 15 cases (55.6%) in 2004. Twenty-one cases (16.4%) were living in rural areas, with 12 cases (44.4%) in 2004.

Table 3 shows the distribution of study cases according to place of the assault from 2004 to 2009. There were 61 cases (47.7%) exposed to the sexual crime in unknown place; 16 cases (59.3%) were in 2004 and 11 cases (47.8%) were in 2005. Thirty-four (26.6%) of cases were exposed to the sexual crime in the assailants’ residence; 9 cases (29.1%) were in 2007. There were 26 cases (20.3%) in which the crimes had been carried out in the victim’s residence; 7 (22.6%) of them were in 2007 and 3 (27.3%) were in 2009.

Table 4 shows the relationship of assailants to the sexual assault child victims in the Suez Canal area in Egypt from 2004 to 2009. Seventeen assailants (13.3%) were considered intra-familial, while 111 (86.7%) were extra-familial to the victims. From the intra-familial cases, there were 6 (35.3%) that were incest against girls and 6 (35.3%) were sexually assaults from second-degree relatives against girls. There were 5 (29.4%) cases considered as intra-familial sodomy in boys. From the extra-familial cases, there were 70 assailants (63.1%) unknown to the victims, 24 assailants (21.6%) were neighbors, and 17 assailants (15.3%) were their teachers.

Table 5 shows the distribution of the studied cases according to type of assault on the victims from 2004 to 2009. The most frequently reported type of sexual assault was anal assault reported in 67 cases (52.3%); 16 cases (69.6%) were in 2005, while there were 4 cases (36.4%) in 2009. Incomplete vaginal penetration was reported in 46 cases (36%), followed by complete vaginal penetration in 10 cases (7.8%), and there were 5 (3.9%) cases of mixed assaults in the form of vaginal and anal intercourse, 3 of which (9.7%) were in 2007.

Table 6 shows the distribution of the study cases according to different circumstances of sexual assault occurrence from 2004 to 2009. Fifty cases (39%) were exposed to verbal threats; 12 cases (38.7%) were in 2007. Nine cases (7.1%) were exposed to physical violence; 3 cases (13.1%) were in 2005 and only 1 case (9.1%) was in 2009. Sixty-one cases (47.7%) gave no information, while in 5 cases (3.9%), the assaults were under the threat of weapons; 3 cases (18.2%) were in 2009.

Figs. 3 and 4 illustrate the studied variables related to the assailants of sexual assault in the Suez Canal area in Egypt.

Table 1 Classification of sexual assault child victims was according to age groups in Suez Canal area in Egypt from 2004 to 2009.

<table>
<thead>
<tr>
<th>Age groups</th>
<th>No. (%)</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>5–10 years</td>
<td>3 (11.1)</td>
<td>3 (11.1)</td>
<td>2 (10.5)</td>
<td>5 (16.1)</td>
<td>2 (11.8)</td>
<td>0 (0)</td>
<td>15 (11.7)</td>
<td></td>
</tr>
<tr>
<td>10–18 years</td>
<td>24 (88.9)</td>
<td>20 (86.9)</td>
<td>17 (89.5)</td>
<td>26 (83.9)</td>
<td>15 (88.2)</td>
<td>11 (100)</td>
<td>113 (88.3)</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>27 (100)</td>
<td>23 (100)</td>
<td>19 (100)</td>
<td>31 (100)</td>
<td>17 (100)</td>
<td>11 (100)</td>
<td>128 (100)</td>
<td></td>
</tr>
<tr>
<td>p-Value</td>
<td>0.001*</td>
<td>0.001*</td>
<td>0.001*</td>
<td>0.001*</td>
<td>0.001*</td>
<td>0.001*</td>
<td>0.001*</td>
<td></td>
</tr>
</tbody>
</table>

* Statistically significant.
from 2004 to 2009. Fig. 3 shows that 56 assailants (43.75%) were younger than 20 years old, while 72 assailants (56.25%) were older than 20 years old. Fig. 4 shows that there were 24 cases (18.7%) of sexual assault committed by more than one assailant and 104 cases (79.3%) of sexual assaults committed by only one assailant.

Table 2  Distribution of sexual assault child victims, according to victim’s residency in Suez Canal area in Egypt from 2004 to 2009.

<table>
<thead>
<tr>
<th>Victim’s residency</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urban</td>
<td>15 (55.6)</td>
<td>20 (86.9)</td>
<td>17 (89.5)</td>
<td>28 (90.3)</td>
<td>17 (100)</td>
<td>10 (90.9)</td>
<td>107 (83.6)</td>
</tr>
<tr>
<td>Rural</td>
<td>12 (44.4)</td>
<td>3 (13.1)</td>
<td>2 (10.5)</td>
<td>3 (9.7)</td>
<td>0 (0)</td>
<td>1 (9.1)</td>
<td>21 (16.4)</td>
</tr>
<tr>
<td>Total</td>
<td>27 (21.9)</td>
<td>23 (17.9)</td>
<td>19 (14.8)</td>
<td>31 (24.2)</td>
<td>17 (13.3)</td>
<td>11 (8.6)</td>
<td>128 (100)</td>
</tr>
<tr>
<td>p-Value</td>
<td>0.6 (NS)</td>
<td>0.001*</td>
<td>0.001*</td>
<td>0.001*</td>
<td>0.001*</td>
<td>0.001*</td>
<td>0.6 (NS)</td>
</tr>
</tbody>
</table>

* Statistically significant.

Table 3  Distribution of sexual assault child victims, according to place of the assault in Suez Canal area in Egypt from 2004 to 2009.

<table>
<thead>
<tr>
<th>Place of the assault</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assailant residence</td>
<td>6 (22.2)</td>
<td>4 (17.4)</td>
<td>7 (36.8)</td>
<td>9 (29.1)</td>
<td>5 (29.4)</td>
<td>3 (27.3)</td>
<td>34 (26.6)</td>
</tr>
<tr>
<td>Unknown place</td>
<td>16 (59.3)</td>
<td>11 (47.8)</td>
<td>9 (47.4)</td>
<td>13 (41.9)</td>
<td>7 (41.2)</td>
<td>5 (45.5)</td>
<td>61 (47.7)</td>
</tr>
<tr>
<td>Victim residence</td>
<td>3 (11.1)</td>
<td>6 (26.1)</td>
<td>3 (15.8)</td>
<td>7 (22.6)</td>
<td>4 (23.5)</td>
<td>3 (27.3)</td>
<td>26 (20.3)</td>
</tr>
<tr>
<td>W.C. of school</td>
<td>2 (7.4)</td>
<td>2 (8.7)</td>
<td>0 (0)</td>
<td>2 (6.5)</td>
<td>1 (5.9)</td>
<td>0 (0)</td>
<td>7 (5.5)</td>
</tr>
<tr>
<td>Total</td>
<td>27 (21.9)</td>
<td>23 (17.9)</td>
<td>19 (14.8)</td>
<td>31 (24.2)</td>
<td>17 (13.3)</td>
<td>11 (8.6)</td>
<td>128 (100)</td>
</tr>
</tbody>
</table>

\(X^2 = 7.3, \ p\)-value = 0.9 (NS).

Table 4  Relationship of assailants to the sexual assault child victims in Suez Canal area in Egypt from 2004 to 2009.

<table>
<thead>
<tr>
<th>Relationship of assailants to the sexual assault child victims</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intra-familial</td>
<td>4 (14.8)</td>
<td>3 (13.1)</td>
<td>3 (15.8)</td>
<td>4 (12.9)</td>
<td>1 (5.9)</td>
<td>2 (18.2)</td>
<td>17 (13.3)</td>
</tr>
<tr>
<td>Incest against girls</td>
<td>2 (50)</td>
<td>0 (0)</td>
<td>1 (33.3)</td>
<td>2 (50)</td>
<td>0 (0)</td>
<td>1 (50)</td>
<td>6 (35.3)</td>
</tr>
<tr>
<td>2nd degree relative against girls</td>
<td>1 (25)</td>
<td>1 (33.3)</td>
<td>2 (66.7)</td>
<td>1 (25)</td>
<td>1 (100)</td>
<td>0 (0)</td>
<td>6 (35.3)</td>
</tr>
<tr>
<td>Sodomy against boys</td>
<td>1 (25)</td>
<td>2 (66.7)</td>
<td>0 (0)</td>
<td>1 (25)</td>
<td>0 (0)</td>
<td>1 (50)</td>
<td>5 (29.4)</td>
</tr>
<tr>
<td>Extra-familial</td>
<td>23 (85.2)</td>
<td>20 (86.9)</td>
<td>16 (84.2)</td>
<td>27 (87.1)</td>
<td>16 (94.1)</td>
<td>9 (81.8)</td>
<td>111 (86.7)</td>
</tr>
<tr>
<td>Neighbor</td>
<td>6 (26.1)</td>
<td>4 (20)</td>
<td>2 (12.5)</td>
<td>8 (29.6)</td>
<td>2 (12.5)</td>
<td>2 (22.2)</td>
<td>24 (21.6)</td>
</tr>
<tr>
<td>Teacher</td>
<td>4 (14.8)</td>
<td>2 (10)</td>
<td>3 (18.7)</td>
<td>7 (25.9)</td>
<td>1 (6.25)</td>
<td>0 (0)</td>
<td>17 (15.3)</td>
</tr>
<tr>
<td>Unknown</td>
<td>13 (56.5)</td>
<td>14 (70)</td>
<td>11 (68.75)</td>
<td>12 (44.5)</td>
<td>13 (81.25)</td>
<td>7 (77.8)</td>
<td>70 (63.1)</td>
</tr>
<tr>
<td>Total</td>
<td>27 (21.9)</td>
<td>23 (17.9)</td>
<td>19 (14.8)</td>
<td>31 (24.2)</td>
<td>17 (13.3)</td>
<td>11 (8.6)</td>
<td>128 (100)</td>
</tr>
<tr>
<td>p-Value</td>
<td>0.001*</td>
<td>0.001*</td>
<td>0.001*</td>
<td>0.001*</td>
<td>0.001*</td>
<td>0.001*</td>
<td>0.001*</td>
</tr>
</tbody>
</table>

* Statistically significant.

Table 5  Distribution of the sexual assault child victims, according to assault’s type espouser in Suez Canal area in Egypt from 2004 to 2009.

<table>
<thead>
<tr>
<th>Assault’s type</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complete vaginal penetration</td>
<td>2 (7.4)</td>
<td>1 (4.3)</td>
<td>1 (5.3)</td>
<td>3 (9.7)</td>
<td>1 (5.9)</td>
<td>2 (18.2)</td>
<td>10 (7.8)</td>
</tr>
<tr>
<td>Incomplete vaginal penetration</td>
<td>11 (40.7)</td>
<td>6 (26.1)</td>
<td>7 (36.8)</td>
<td>10 (32.3)</td>
<td>7 (41.2)</td>
<td>5 (45.5)</td>
<td>46 (36)</td>
</tr>
<tr>
<td>Anal assault</td>
<td>13 (48.2)</td>
<td>16 (69.6)</td>
<td>11 (57.9)</td>
<td>15 (48.4)</td>
<td>8 (47.1)</td>
<td>4 (36.4)</td>
<td>67 (52.3)</td>
</tr>
<tr>
<td>Mixed assault</td>
<td>1 (3.7)</td>
<td>0 (0)</td>
<td>0 (0)</td>
<td>3 (9.7)</td>
<td>1 (5.9)</td>
<td>0 (0)</td>
<td>5 (3.9)</td>
</tr>
<tr>
<td>Total</td>
<td>27 (21.9)</td>
<td>23 (17.9)</td>
<td>19 (14.8)</td>
<td>31 (24.2)</td>
<td>17 (13.3)</td>
<td>11 (8.6)</td>
<td>128 (100)</td>
</tr>
</tbody>
</table>

\(X^2 = 10.7, \ p\)-value = 0.8 (NS).

Table 7 shows the time lapse between the sexual assault and the examination of the victim from 2004 to 2009. It was found that 44 cases (34.4%) of the children’s examinations had been done within three weeks; 14 cases (45.2%) were in 2007. Examination of the child in 34 cases (26.6%) had been done within
2 weeks; 10 cases (37.1%) were in 2004. In 19 cases (14.8%), examination of the child had been done after one month. In 13 cases (10.2%), examination of the child had been done within 2–4 days of the assault; 6 of those cases (19.4%) were in 2007. Examination of samples collected from clothes of the child victims showed negative results.

4. Discussion

Child sexual abuse is considered one of the greatest threats to a child’s well-being, and safety prevention and dealing with this situation is no easy task. It requires a multidisciplinary approach with great effort and coordination among the public administration, numerous professionals, families, victims, and society in general.16

In the present study, reports on sexual assaults against children from January 2004 to December 2009 were obtained from the Medico-Legal department of Ministry of Justice in the Suez Canal area, Ismailia and Port-Said offices after approval from authorities. The total numbers of cases were 128; girls represent 69 of cases (53.9%), and boys represented 59 cases (46.1%). This number is small compared to other studies done in other cities in Egypt. Mohamed et al.42 reported that 321 cases of sexually abused boys were examined in the Medico-Legal department in Cairo during the period of 1986–1990. In the Dakahlia Governorate, 650 cases of sexual offenses were reported in the period from 1996 to 2000; the female-to-male ratio was 3:2.43 There were 40 sexual assault cases in the Sohag Governorate from 2002 to 2003, with females representing 62.5% and males representing 37.5%.44

Our results revealed that 69 of cases (53.9%) of the child victims were girls, which agrees with international studies documenting that 36% of women report that they experienced some type of sexual abuse in childhood19 and that 19.7% of women suffered some form of sexual abuse prior to the age of 18.20 The higher prevalence rates reported among women in the studies reviewed enables us to infer that most victims

<table>
<thead>
<tr>
<th>Table 7</th>
<th>Time lapse between the sexual assault and examination of the child victims in Suez Canal area in Egypt from 2004 to 2009.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time lapse</td>
<td>No. (%)</td>
</tr>
<tr>
<td></td>
<td>2004</td>
</tr>
<tr>
<td>Within 2–4 days</td>
<td>4</td>
</tr>
<tr>
<td>Within 1 week</td>
<td>5</td>
</tr>
<tr>
<td>Within 2 weeks</td>
<td>10</td>
</tr>
<tr>
<td>Within 3 weeks</td>
<td>5</td>
</tr>
<tr>
<td>More than 1 month</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td>27</td>
</tr>
</tbody>
</table>

\(X^2 = 20.9, p\text{-value} = 0.4\) (NS).
of child abuse are female, although the important percentage of male victims should not be overlooked; note that these results are in contrast to the results of Pereda that reported a higher number of male victims in childhood. However, this difference could be due to characteristics of the area of study, since this finding is not replicated in any other published studies. The explanation of the lower prevalence rates among men is the possibility from greater shame and fear that they will be labeled homosexual or weak, which may combine with the fact that they are more often accused of having provoked the abuse; therefore, male victims tend to refuse to admit to the abuse or call the police.

In the present study, 128 cases were eligible for the survey, of which 27 assault cases took place in 2004, 23 cases in 2005, 19 cases in 2006, 31 cases in 2007, 17 cases in 2008, and 11 cases in 2009. Egypt is considered a developing country with multiple societal unstable familial patterns of parent–child interactions as well as the accumulation of frustration that comes with unemployment, illness, housing problems, and other stresses related to insufficient income and low socioeconomic status.

The cultural model of raising children supports legitimised corporal punishment of children. These results agree with figures from Denmark in which the average annual incidence of child sexual abuse was 0.06 per 1000 children based on data in the National Patient Register.

Regarding age of assaulted children, the present study revealed that 11.7% of assaults were against children (victims) who were younger than 10 years old, while 88.3% were older than 10 years old, and their age ranged from 5 to 18 (mean 10.2 for females and 9.7 for males). These results are close to those of a study done in Tanzania that revealed that the mean age at which abuse occurs for males and females is similar at 13.5 and 13.8 years, respectively.

Another study in El Salvador showed the median age of child sexual abuse is 14 years. A study carried out on 87 cases of sexual assault in the Assiut Governorate from 2003 to 2007 showed that the highest percentage of cases was among the age group 15–18 (35 cases, 40.2%) of which females represented 34 cases, followed by age group 5–9 (20 cases, 23%) of which male represented 17 cases. Young males are often playing outdoors, not under the supervision of their families; females of a young age group tend to stay at home close to their mothers.

In a study done in Saudi Arabia on child abuse, about 15% were sexually abused in the period from 2000 to 2008. Thirty percent took place in the period from 2000 to 2004, 10% in 2005 to 2006, while 60% were in the period 2007 to 2008.

In this study, 100% of sexual assault victim cases in 2008 lived in urban areas, while in 2004, 55.6% lived in urban areas. A significant correlation was proved between residency of the victims and the occurrence of the crime, as 83.6% lived in urban areas.

Findings from researches on child sexual abuse are often not comparable across studies because of nonstandard definitions of child sexual abuse, differing age categories used to differentiate childhood and adolescence, and varying study populations.

In the present study, the majority of the assailants (70 assailants, 63.1%) were unknown to the victim. In a Finnish study, the majority were closely related, whereas in Denmark, the majority of the offenders were unknown to the child. That is particularly the case when a broad definition of the term “sexual abuse” was used, including indecent exposure and intimate touching; when a narrow definition is used, the majority and most serious cases of abuse took place in the child’s family and in a close environment. In the present study, 17 cases (13.3%) of the assailants were considered intra-familial; 6 cases were considered incest against girls, 6 cases were sexual assault from second-degree relatives against girls, while 5 cases were intra-familial sodomy against boys.

The most-often reported type of incest is father–daughter and stepfather–daughter incest, with most of the remaining reports consisting of mother/stepmother–daughter/son incest. Father–son incest is reported less often; however, it is not known if the prevalence is less because it is underreported by a greater margin. Similarly, some argue that sibling incest may be as common – or more common – than other types of incest: Goldman and Goldman reported that 57% of incest involved siblings; Finkelhor reported that over 90% of nuclear family incest involved siblings; Cawson et al. showed that sibling incest was reported twice as often as incest perpetrated by fathers/stepfathers.

In a Nicaragua study, the most common perpetrators of abuse on children younger than 12 were male family members including uncles, cousins, and fathers (66%); other studies on perpetrators of child sexual abuse show that the vast majority of perpetrators is male and known to the victim or family. Children may be sexually abused by family members or nonfamily members and are more frequently abused by males. Boys are reportedly victimized less often than girls but may not be as likely to disclose the abuse. Adolescents are perpetrators in at least 20% of reported cases.

Another researcher stated that about 30% of all perpetrators of sexual abuse are related to their victims; 60% of the perpetrators are family acquaintances – such as a neighbor, babysitter, or friend – and 10% of the perpetrators in child sexual abuse cases are strangers.

Prevalence of parental child sexual abuse is difficult to assess due to secrecy and privacy; some estimates show 20 million Americans have been victimized by parental incest as children.

However, in a study in Israel, the majority of perpetrators were strangers, and the intra-family abuse was more common in females than in males. In the present study, 8.6% of cases reported sexual assault combined with physical assault, while 3.9% reported armed threat. There is a similarity between this and a study in Tanzania that documented almost 13% of females mentioned physical force as a major form of persuasion.

In the present study, according to type of assault on the child victims, cases were classified into complete vaginal penetration, incomplete vaginal penetration, anal assault, and mixed assault. The most frequently reported type of sexual assault was anal assault, reported in 67 cases (52.3%), where 8 of them were against girls and 59 were male sodomy. In 2005, there were 16 cases (69.6%) of anal assault, while there were 4 cases (36.4%) in 2009. Incomplete vaginal penetration was
reported in 46 cases (36%), and there were 5 (3.9%) cases of mixed assaults in the form of vaginal and anal intercourse. In 2009, there were only 2 cases (18.2%) of complete vaginal penetration and 5 cases (45.5%) of incomplete vaginal penetration.

Upon examination of child victims according to types of injuries, external injuries were found in 4 cases in the form of bruises in the arms and lips. Genital injuries took the form of recent hymen tear in 2 cases (18.2%), recent anal tear in boys in 2 cases (18.2%), and there were no cases of pregnancy among girls.

Regarding the type of assault, Ingemann et al.\textsuperscript{46} found that 216 victims underwent a forensic medical examination, and 78% of the victims had injuries: 58% had skin or bone injuries, 19% had extra-genital and genital injuries. Another study stated that, on average, 40% of sexual assault complainants will have no general injuries. Of those injured, most will have only minor injuries that will fade rapidly or heal without trace.\textsuperscript{47}

Genital and body injuries are not routinely found in adolescents and children after allegation of rape or sexual assault, even when there has not been previous sexual experience. This may be due to the absence of the completion of intercourse, with or without consent (cases of allegation).\textsuperscript{48}

Herman-Giddens et al. found 6 certain and 6 probable cases of death due to child sexual abuse in North Carolina between the years 1985–1994. The victims ranged in age from 2 months to 10 years. Causes of death included trauma to the genitalia or rectum and sexual mutilation.\textsuperscript{38}

Kendall-Tacket et al. reported that in a study of pregnant adolescents, only 2 out of 36 had evidence of penetration. Occasionally, a child presents with clear evidence of anogenital trauma without an adequate history. Abused children may deny abuse. Findings that are concerning include: (1) abrasions or bruising of the genitalia; (2) an acute or healed tear in the posterior aspect of the hymen that extends to or nearly to the base of the hymen; (3) a markedly decreased amount of hymen tissue or absent hymen tissue in the posterior aspect; (4) injury to or scarring of the posterior fourchette, fossa navicularis, or hymen; and (5) anal bruising or laceration.\textsuperscript{39} There is no distinct boundary between sexual offenses and indecent exposure. For example, intimate touching of the clothed body may either be coded as a sexual offense or a case of indecent exposure.

The registration is based on the preliminary information to the police and is not modified by the evidence obtained during the investigation. Therefore, cases classified as more serious types of sexual offenses in the Criminal Register may turn out to be indecent exposure and vice versa.\textsuperscript{18}

In this study, samples collection and examination of clothes showed negative results for sexually related material. In the highest number of cases (44 cases, 34.4%), examination of clothes for the presence of sexually related material occurred after three weeks and in 42 cases (6.6%), the examination of clothes had been occurred after two weeks. This delay may be because of late notification of the victims or due to delay of the legal process. Santos et al. stated that the clothing worn by the complainant during or after the incident may be an invaluable source of information in terms of nature of the assault (e.g., damage to the clothing and body fluid stains).\textsuperscript{49}

The likelihood of collecting evidentiary material decreases with the passing of time. Ideally, specimens should be collected within 24 h of the assault; after 72 h, yields are reduced considerably.\textsuperscript{46}

5. Conclusions and recommendations

Childhood is a developmental period with a high vulnerability to physical and psychological risks\textsuperscript{40}; therefore, some sociodemographic parameters are considered risk factors related to violence and should be considered by family planning programs to estimate the magnitude of this problem in our community on a large scale, offering psychological assessment and assurance for risky perpetrators aiming to prevent such child abuse crimes.\textsuperscript{31}

There is little information concerning child abuse reporting by physicians. The two most frequently cited reasons for not reporting were a reluctance to report before the physician is certain of the diagnosis of abuse or neglect, and the belief that he or she can work with the family to solve the problem without outside intervention.

Clinicians have some degree of suspicion that injuries they evaluated were caused by child abuse. Clinicians did not report all suspicious injuries to child protective services, even if the level of suspicion was high. The child, family, injury characteristics, and the clinician’s previous experience influenced decisions to report. As child sexual abuse is a private and secretive crime, it can be difficult for law enforcement and other agencies to detect without help. Any information, no matter how small or insignificant it may seem to the physician, could help protect a child. Pediatric programs must provide far more training and resources for child abuse education than merely emergency medicine and family medicine programs. As leaders, pediatricians must establish the importance of this topic in the pediatric education of residents of all specialties. Decisions about reporting to child protective services must guided by injury circumstances and history, knowledge of and experiences with the family, consultation with others, and previous experiences with child protective services. Some offenders do not just abuse one child but go on to abuse other children. It is important that all members of the community take responsibility for reporting suspected abuse.

Sexual assaults among children are not rare incidents. The relation of sexual assaults to a man’s honor and dignity — especially in Egypt — make it a shameful situation about which neither the victims nor the families want to talk. Doctors and other health professionals should be aware of the high prevalence rate of child abuse and its potential for initial and long-term deleterious outcomes.

We recognize the importance of providing a presence of a specialized center in the Suez Canal Area to the victims and their families. We recommend that doctors and nurses of the Suez Canal area deal with sexual assault cases with the presence of trained staff’s psychological support and Medico-Legal examiners around the clock and that they facilitate the legal process and guaranty rapid examination for the validity of forensic examination and samples collection. Victims will be encouraged to go to this center instead of regular police stations and will be guaranteed confidentiality.

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References


51. Egyptian Penal Code. Indecent assault and corrupting the morals, according to the latest amendments, 2006. Part IV, article 267 – legal library [-267 0629 062F 0627 0645 0644 0627, 0639 0628 0627 0631 0644 0627 0628 0628 0644 0627 - 0642 0627 0644 0627 0627 0644 0627 0627 0633 062D 0649 0631 0635 0645 0644 0627 062A 0627 0628 0648 0639 0644 0627 0646 0648 0646 0627 0642].