

Child Sexual Abuse; a Medico-Legal Analysis

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ABSTRACT

Background: Child sexual abuse is frequently discussed in Sri Lanka. The type of abuse, hymenal injuries and their association with penetrative intercourse are important facts in the management of child sexual abuse.

Methods: Out of 7257 Medico-legal examinations, 78 child sexual abuse cases reported to a tertiary care hospital in Colombo, Sri Lanka, from January 2011 to December 2013 were studied.

Results: Females 85% and 59% were 11-15 years. Sixty nine percent during day time, 91% by known persons and 64% at outside place. Vaginal intercourse was alleged by 15% of below the age of 10 years and 62% of above 10 years (P<0.01) and committed was by 73% of 'boyfriends' and 33% of non-boyfriends (P<0.01). Hymenal tears were in 15% of fimbriated and 45% of non-fimbriated hymen (P<0.05). Hymenal tears at 5-7 O'clock position in 40% of alleged vaginal intercourse and 3% of not alleged (P<0.01). Hymenal orifice diameter greater than 2 fingers was in 69% of alleged vaginal intercourse and 3% of not alleged (P<0.01). Anal intercourse was in 6% of females and 58% of males (P<0.01).

Conclusion: Child sexual abuse is common among children above 10 years, during day time, by a known person at an outside place. Vaginal intercourse is common among girls above 10 years by 'boyfriends' with a tear at 5-7 O'clock position. Taut annular and crescentic hymen have a higher chance of getting torn than lax fimbriated hymen. Anal intercourse is committed on male than female children. Findings will be useful for medico-legal and holistic management, and evidence based prevention of child sexual abuse.

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1. Introduction:

Child sexual abuse is usually considered as a concealed crime. According to the statistics of Women and Children's Bureau of Sri Lanka 2008, among the reported crimes, sexual abuse was the most frequent form of child abuse (1) and most of the perpetrators were known parties (2).

According to Sri Lankan law, below 16 years, a proof of damage to the hymen constitutes a statutory rape or grave sexual abuse. It is difficult to interpret injuries to the hymen in children, because most of these victims do not present as acute cases. By the time they present, the wounds are healed and the interpretation is difficult. Similarly, in small children, normal anatomical variations in the genitalia make the interpretation more complex. The findings and opinions of hymenal injuries are important facts in the management of child sexual abuse. Therefore, this study was conducted to describe the types of abuse, nature and injuries to the hymen, and associations with penetrative intercourse among the victims of child sexual abuse.

2. Materials and Methods:

A disruptive, cross sectional study was conducted at a tertiary care hospital, in Colombo, Sri Lanka, from 1st January 2011 to 31st December 2013. Victims less than 18 years of age were considered as children. All (7257) Medico-Legal Examination Forms (MLEFs) of 5 consented forensic medical practitioners out of 9, were studied. Data was collected from reported cases of child sexual abuse using a data collection form. The anonymous data were analyzed using SPSS 19 and details of different variables

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were revealed.

3. Results:

Out of 7257 Medico-legal examination forms (MLEFs), 78 (1.1%) children were reported as child sexual abuse. There were 85% (n=66) females. Ages ranged from 3 to 17 ½ years, median was 14 years and inter quartile ratio (IQR) was 12-15 years. Majority (59%) of victims was 11-15 years, and figure 1 shows the distribution of age.

Eighty eight percent (n=69) of mothers were living at home, 04 living separately, 03 employed away from home and 02 were working abroad.

Most (91%) of the perpetrators were known to the victim. Forty two percent (n=33) of the perpetrators were 'boyfriends' and the types of the perpetrators are shown in table 2.



Fig. 1. Annular hymen. Note that the hymen is taut.



Fig. 2. Crescentic hymen. Note that the hymen is taut.



Fig. 3. Fimbriated hymen. Note that the hymen is lax.



Fig. 4. Complete posterior-half tears at 3, 6 and 9 O'clock positions.



Fig. 5. hymenal notches at 4, 5, 7 and 8 O'clock positions.



Fig. 6. Attenuated hymen.

When the perpetrator was 'boyfriend' (33), all the victims were above 10 years of age and majority occurred at outside place (22) at night (19). When perpetrator is the boyfriend, 22 girls alleged being subjected to vaginal intercourse. In the instances where girl eloped with boyfriend (09), they stayed overnight at a boyfriend's relative's house.

Majority (69%, n=54) of the incidents took place during day time (6.00 am to 6.00 pm) at an outside place (64%, n=50).

Material inducements such as money and gifts were offered in 26% (20) instances.

Seven boyfriends offered material inducements. Majority of the strange perpetrators (05 out of 07) offered material inducements.

Most commonly alleged sexual assault was vaginal intercourse (45%). The types of sexual assaults are shown in Table 3.

Out of alleged intercourses, oral (09), anal (09) and vaginal intercourse (35) were considered as penetrative intercourses and intercrural intercourse (20) was considered as non-penetrative intercourse. The non-penetrative contact sexual methods were fingering, touching and kissing.

Table 1: Age distribution

Age group	Frequency	Percent
<5 years	07	09
6-10 years	09	12
11-15 years	46	59
>16 years	16	20
Total	78	100

Table 2: Types of perpetrators

Perpetrators	Frequency	Percent
Boyfriend	33	42
'Others'	29	37
Relative	12	16
Father	04	05
Total	78	100

Table 3: Types of sexual assaults

Type of sexual assault	Frequency	Percent
Vaginal intercourse	35	45
Fingering, touching, kissing	23	29
Inter-crural intercourse	20	26
Oral intercourse	09	11
Anal intercourse	09	11

Table 4: Transverse diameter of the hymenal orifice

Transverse diameter	Frequency	Percent
Two fingers	25	38
little finger	21	32
Index finger	16	24
Less than little finger	4	06
Total	66	100.0

Altogether, 60% (47) alleged being subjected to one or more kind of penetrative intercourse.

Penetrative intercourse was alleged by (47), 31% of below 10 years of age (05) and 68% of above 10 years of age (42) and this difference was significant ($X^2 = 7.072$, $P = 0.008$). Penetrative intercourse had been

reported in 43% of home incidents (12) and 70% of non-home incidents (35) and this difference was also significant ($x^2 = 5.522$, $P = 0.019$). Further, 37% of family members (6) and 66% of non-family members (41) had been alleged for committing penetrative intercourse and this difference too was significant ($x^2 = 4.353$, $P = 0.037$).

Among female survivors, 53% (35) alleged being subjected for vaginal intercourse. But only 39% (26) had hymenal tears. 24 lower half 'posterior' tears and 02 upper half tears.

Out of 26 hymenal tears, 12 were complete lower half tears (Figure 4), 09 were partial notches (Figure 5) and 5 were attenuated following hymenal tears (Figure 6). Position of the posterior hymenal tears or suspected tears were: Majority (19) at 5-7 O'clock position, 10 at 3-4 O'clock and 07 at 8-9 O'clock position.

Three out of 08 crescentic hymens and 16 out of 41 annular hymens had tears.



Fig. 7. Lax fimbriated hymen with a tear at 6 O'clock position.

Though tears were not apparent in attenuated hymens (5), it is formed by wearing off of old tears due to chronic penetration. Out of 13 fimbriated hymens, 02 had tears (Figure 7). Hymenal tears were in 15% of fimbriated hymen (02) and 45% of non-fimbriated hymen (24) and this difference was significant ($\chi^2=3.909$, $P=0.048$).

Most (38%, $n=25$) hymen had the transverse diameter, similar or greater than the width of 2 adult fingers and the transverse diameters of the hymenal orifices are shown in Table 4.

Equal or more than two finger transverse diameter (25) was in, 32% of non-fimbriated hymens (17) and 61% of fimbriated hymens (08) and this difference was significant ($\chi^2=3.851$, $P=0.049$). More than two finger transverse diameter was in, 69% of the victims alleged vaginal intercourse (24) and 03% of victims not alleged vaginal intercourse (01) and this difference also was significant ($\chi^2=29.832$, Fisher's exact test $P=0.000$).

Out of 66 female survivors, 35 alleged being subjected to vaginal intercourse. 15% of below 10 years (02) and 94% of above 10 years (33) had alleged being subjected to vaginal intercourse and this difference was significant ($\chi^2=9.211$, $P=0.002$). Inter-crural ($P=0.406$), anal ($P=0.477$) and oral intercourse ($P=0.770$) were not associated with age ($P>0.05$).

Alleged vaginal intercourse (35) being committed by, 69% of 'boyfriends' (24) and 31% of 'perpetrators other than boyfriends' (11) and this difference was statistically significant ($X^2=10.280$, $df=1$, $P=0.001$). Hymenal tears at 5-7 O'clock position (19) in, 46% of alleged vaginal intercourse (16) and 10% of not alleged vaginal intercourse (03) and this difference was statistically significant ($\chi^2=15.738$, Fisher's exact test $P=0.000$).

None presented with fresh hymenal tears. Out of 66 female survivors, none received anal injuries. Out of 12 male survivors, only 01 had healed anal tear and none had bodily injuries.

Fifty eight percent of males and 6% of females alleged being subjected to anal intercourse and this difference was statistically significant ($\chi^2=30.425$, Fisher's exact test $P=0.000$)

4. Discussion:

Out of reported cases, 1.1% was child sexual abuse. Similar to the studies done by Martin and Silverstone (2013) (3), the commonest age of occurrence was 11-15 years. The risk for sexual abuse tends to rise after puberty. It is similar to the findings of the National Child Protection Authority of Sri Lanka (4). Similar to previous studies (2), the offender was known (91%) in most of these instances. Majority took place outside home during day time by a known offender. This could have been due to the easy access towards the children by the known perpetrators.

Most common perpetrator was boyfriend (33). They frequently had vaginal intercourse with girls above 10 years at an outside place, during day time usually without offering material inducements. But, in the instances where girl eloped with boyfriend, they stayed overnight at boyfriend's relative's house.

Father was the perpetrator in 04 cases. According to Stroebel *et al* (2013), mother's affection is important to prevent father-daughter incest (5). In this study too, in father-daughter incest, mother's protective affection was absent due to working mother (1), being abroad (1) and being separated from husband (2).

Majority of unknown offenders offered material inducements, though it was rare among other offenders.

There was a higher chance of being subjected to penetrative intercourse such as anal, oral and vaginal for victims above 10 years of age ($P<0.01$) by a non-family member ($P<0.05$) at a place other than home ($P<0.05$).

More than 50 % female victims alleged of being subjected to vaginal intercourse and in such instances, the description of hymen and its injuries is of paramount importance.

The annular hymen consists of a mucous lined membrane placed at the entrance of the vagina with an orifice at its center. Crescentic hymen is similar but the orifice is placed towards the urethral end. The fimbriated hymen is also a mucous lined membrane with the margin folded all around the orifice. Hymenal tears were frequently found in non-fimbriated hymen than fimbriated hymen ($P < 0.05$). The presence of taut membranes make the annular and crescentic hymens more prone to tear during vaginal intercourse than the lax fimbriated hymen ($P < 0.05$).

The hymenal opening size is not a considered as highly specific indicator of sexual abuse (6). Fimbriated hymen had higher ability of accommodating 2 adult fingers than non-fimbriated hymen ($P < 0.05$). Due to the ability of the fimbriated hymens to accommodate wider objects like erected penis without being damaged, the measurement of transverse diameter of the fimbriated hymen would be of little use. Further, the hymenal orifice diameter tends to be greater when subjected to vaginal intercourse than not ($P < 0.01$).

Of female victims, 33% had faced 2 or more sexual assault incidents but none of the girls with hymenal tears reported to police or hospital at acute stage. Reasons for delayed information to police or hospital should be studied further.

Similar to Adams *et al* (1994) (6), one third of female victims (39%) had a hymenal tear. Tearing of the hymen in the posterior 180° , i.e. between 3 and 9 O'clock, results in due to vaginal penetration beyond hymen level, especially in children (6). In this study, it was found that there is a higher chance of getting hymenal tears at 5-7 O'clock position with vaginal intercourse ($P < 0.01$).

The notches are produced by healing of partial tears (7). The percentage of cases where there were posterior notch of the hymen without fresh tears were 12%. This is similar to the study done by kerns et al (1993) and posterior notches has a

significant correlation with penile vaginal penetration (7).

Percentage of cases of attenuated hymen in this study was 6%. Attenuation is a process where the amount of hymenal tissue is reduced due to penetrating trauma and becomes a rim or border (8). No cases were found where there were bumps in the orifice of the hymen.

Further it was revealed that more than 10 years old girls have a higher chance of subjecting to vaginal intercourse ($P < 0.01$) by their boyfriends ($P < 0.01$).

Percentage of victims subjected to anal intercourse was 11% and male children have a higher chance of subjecting to anal intercourse than female children ($P < 0.01$).

In conclusion, children above 10 years are commonly being sexually abused, during day time, by a known person at an outside place. Penetrative intercourse usually commits by non-family members. Vaginal intercourse is common among girls above 10 years by 'boyfriends' with a tear at 5-7 O'clock position. Taut annular and crescentic hymen have a higher chance of getting torn than the lax fimbriated hymen. Anal intercourse is commonly committed on male than female children. These findings will be useful for medico-legal and holistic management of child sexual abuse, and evidence based intervention and prevention.

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