A comparative descriptive study on adolescents presented to Ragama and Anuradhapura Teaching Hospitals for medico-legal examination with history of 'sexual activity'

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ABSTRACT

Introduction: Adolescents engaged in sexual activity are brought for medico-legal examination as they are minors. Though some have consented for sexual activity, it is not legally acceptable. The perpetrators include boyfriends, relatives, known persons and strangers. The 'boyfriend' group is unique as the consent is not obtained by illegal means.

Objective: To find out potential predisposing factors that contribute to 'consensual' or 'non consensual' sexual activity of adolescents and to find out how 'consensual' and 'non consensual' sexual activity affects sexual health of adolescents.

Methods: A retrospective descriptive study was done using records maintained at the offices of the Judicial Medical Officers of Ragama and Anuradhapura. The data was analyzed using SPSS statistical package.

Results: 202 and 154 victims examined between 2000 to 2006 at Ragama and Anuradhapura were analyzed. Male to female ratio was 1:10 in Ragama and 1:24 in Anuradhapura. The most vulnerable age group for sexual activity was 14-15 years. The majority of cases were from the low socio-economic strata. Vaginal intercourse was the most preferred sexual activity; the likelihood of an adolescent from Anuradhapura to have penetrative sex was 2.47 times more as compared to an adolescent from Ragama. Boyfriend was the assailant in 39% and 37% of cases in Ragama and Anuradhapura respectively. 63 % of victims from Ragama had eloped as compared to 19% from Anuradhapura. In both groups, nearly half of the cases had a relationship less than 6 months. An adolescent having sexual activity with a relative was 2.31 (95% CI 1.36-3.93) times greater in Anuradhapura as compared to Ragama. There were 18 and 16 pregnancies in Ragama and in Anuradapura, respectivly. 61 cases from Ragama had psychological symptoms and signs after the incident.

Conclusions: Adolescents are more susceptible to engage in sexual acts around 14 years. Consented sexual activity with a boy friend resulting in legal action is a significant social problem. The high incidence of sexual activity with relatives and known persons indicate the vulnerability of adolescents to engage in sexual activity in their own environments.

Introduction

Sexual activity covers a range of behaviours from fondling to penetrative sex between persons to self-activities. Sexual activities in adolescents increase with age (Kristin, McIntosh & Moore 2007). This is mainly due to cognitive development in decision making coupled with gender identification and physical development that occurs during the adolescent period. Adolescence, which is the age between childhood and adulthood, is a changing period. Although experts vary on defining the age range of adolescence, WHO guidelines state that an adolescent is a person from 10 to 19 years.

Each country has laws that relate to sexual activities of individuals ranging from rape laws to sexual harassment. Sexual activities related to individuals of non-consenting age (children and adolescents) are dealt with severe punishments because they are not developmentally prepared and cannot give consent, or because they violate the laws or social taboos of society. According to Sri Lankan laws, consenting age for marriage is 18 years (Marriage Registration and Amendment ACT 1995). However, according to the rape laws of Sri Lanka, a man is said to commit rape when "he had sexual intercourse with a woman with or without her consent when she is under 16 years of age unless the woman is his wife who is over twelve years of age and is not judicially separated from the man" (Penal Code, 1998)

In Sri Lanka, the age of marriage is 18 years. Adolescents who engaged in sexual activity are brought for medico-legal examination as they are minors. The perpetrators include boyfriends, relatives, known persons and strangers. The 'boyfriend' group is unique since the relationship can be categorized as 'romantic involvement' based on the concept of love which is a socially acceptable natural phenomenon. Other types of assailants are in authoritative positions and use coercion, force, threats or rewards to obtain consent. When a sexual activity takes place between two people who are in romantic relationship the consent for sexual activity is considered as mutual and it is not considered illegal when both parties are over 16 years of age. However, when the adolescent's age is below 16 years, irrespective of the relationship, all such perpetrators (even boy friends) are charged under rape laws that have a maximum punishment of 20 years of imprisonment.

Demographic studies in Sri Lanka indicate that 28% of the total population is adolescents and youth (10-24 years) (Lawyers for Human Rights and Development 2000). The increased gap between attainment of puberty and mean age of marriage coupled with the socio-economic

changes in the country have created an environment for adolescents to engage in risk behaviours to fulfill their growing biological needs of reproductive health. On the other hand, the discrepancy of consenting age for sexual activity and marriage age has led to many social problems for law enforcement agencies especially when the parties are between 16 and 18 years of age and among those who engage in sexual activities with 'consent'. This group of people cannot marry even if they want to as the age of marriage is 18 years. Many sociologists and law makers believe that this discrepancy will encourage pre-marital sex and harmful social consequence (WHO 2005).

Sexual health is a state of physical, emotional, mental and social well-being in relation to sexuality; it is not merely the absence of disease, dysfunction or infirmity. Sexual health requires a positive and respectful approach to sexuality and sexual relationships, as well as the possibility of having pleasurable and safe sexual experiences, free of coercion, discrimination and violence (WHO 2004). Sexual health can be affected by various factors including sexual behaviour, attitude, social factors, biological risks and genetic predispositions.

Links between violence and sexual health are both direct and indirect (National Crime Victimization Study 2000). Sexual violence in any society follows the iceberg phenomenon, and the reported sexual violence in any society is the tip of the iceberg. However, interview based community studies from USA report that rape and sexual assaults occur to females 12 years and above at a rate of 2.1 per 1000 persons. Males were sexually assaulted at a rate of 0.1 per 1000 persons. Approximately 80% of all sexual assaults are committed by a friend, acquaintance, or family member of the victim (Rennison 2001; Waidyaratne 2001).

Violence can be an important factor in unwanted pregnancy, in acquiring an STI and in sexual dysfunction as well as an obstacle to achieving sexual health in more indirect ways. Sexual practices vary according to socio-cultural differences. Therefore, it is important to study these two groups, i.e people who engage in sexual activity with consent and without consent in urban and rural settings to understand the problem in depth.

Limited studies have been carried out on adolescents who sought justice in Sri Lanka in the past (Colombage, Waidyaratne Dassanayake 2001; UNICEF 2004). This study was carried out with the objective of finding out potential predisposing factors that contribute to 'consensual' or 'non consensual' sexual activity of adolescents and to find out how 'consensual' and 'non consensual' sexual activity affects sexual health of adolescents.

Methods

Study design: This study was a retrospective descriptive study.

Study setting

The study was carried out at the Medico-Legal Unit of the Colombo North Teaching Hospital, Ragama representing an urban setting and the Judicial Medical Office, Teaching Hospital, Anuradhapura representing a rural setting. Many cases of alleged sexual activity are referred by police as routine work to these two units. Sizeable numbers of individuals are adolescents who have given 'consent' for some kind of sexual activity.

A retrospective descriptive study was carried out on records maintained at the office of the JMO Colombo North and Anuradhapura from 2000 January to 2006 December.

Study population

The study population comprised adolescents who had 'consensual' or 'non consensual' sexual activity reported to the JMO by the police for which records were available at the respective JMO office. Approximately 350 and 587 cases were examined in this age group at the Offices of the JMO Ragama and Anuradhapura, respectively between year 2000 and 2006. Case records that could not be traced and reports without details were excluded from the study.

Definitions used

Adolescent

For purposes of this study an adolescent was defined as an individual 10-20 years of age.

Consenting sexual activity

For purposes of this study consenting sexual activity was taken as sexual activities between boy friend and girl friend. Non consenting sexual activity was taken as sexual activity with relatives and known persons.

Data collection

A data extraction form was designed to streamline data collection. Data extraction was done by trained pre-intern medical officers under the guidance of the investigators. Information was obtained on parental migration (especially mothers), family structure, education level and socio-economic status.

Data analysis

Frequency distributions were generated. The chi square test and t-tests were used to test for associations. Data were analysed using SPSS software package.

Ethical considerations:

Ethical approval for the study was obtained from the Ethics Committee of the Faculty of Medicine, University of Kelaniya.

Results

Demographic data: Age and sex distribution

202 and 154 victims examined between 2000 to 2006 at Ragama and Anuradhapura respectively were analyzed. The male to female ratio was 1:10 and 1:24 in Ragama and Anuradhapura, respectively. The most vulnerable age group for sexual activity was 14-15 years (median age at Ragama was 14.54 years and the median age at Anuradhapura was 14.34 years.

Victim's Residence

Of the Ragama sample, 72% was from the Kelaniya police division; 22% and 3% were from the Gampaha and Negombo Divisions respectively. 3% of cases were referrals outside the western province.

Of the Anurdhapura sample, 97% was from the Anuradhapura Police division, the remainder being from the Vavuniya police division.

Predisposing factors

Engaging in sexual activity during adolescence is a natural phenomenon. However, the events that lead to a 'consensual' or 'non-consensual' sexual activity are multi factorial. For purposes of this study, consenting sexual activity was taken as sexual activities with boyfriends whereas non-consenting sexual activity was taken as sexual activities with relatives, known persons and strangers.

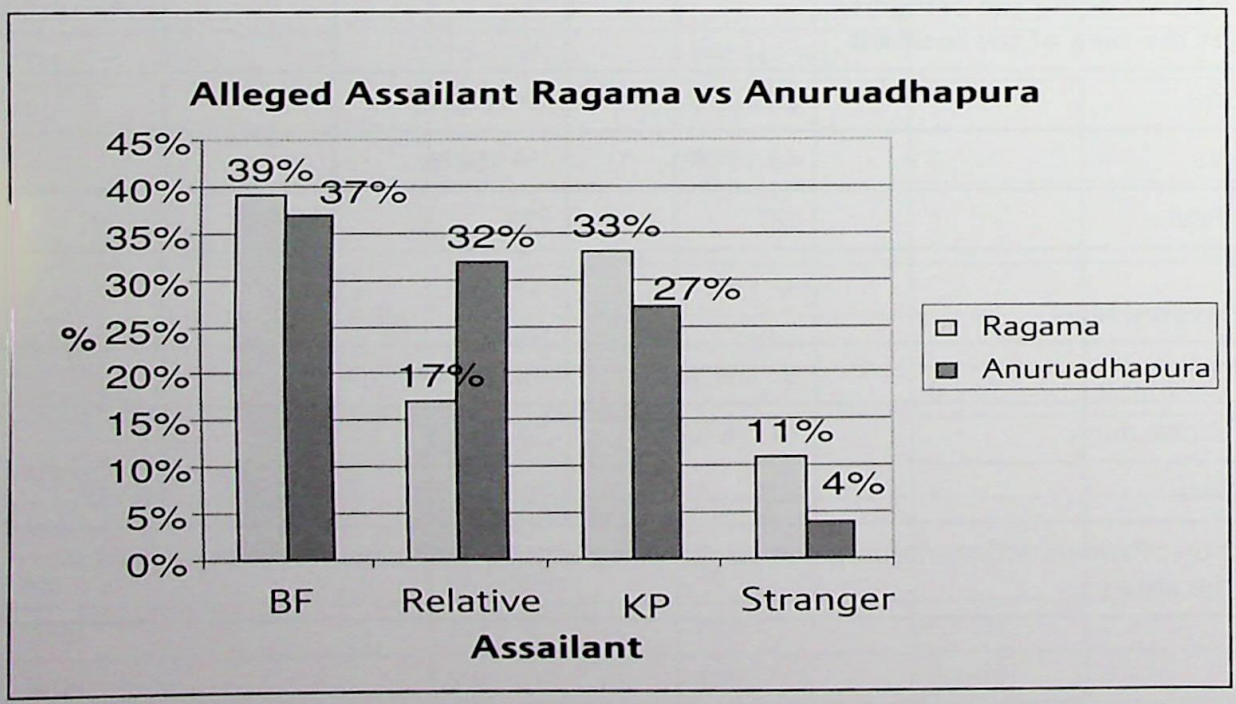
Table 1. Association between type of sexual activity and selected factors

Predisposing factor	Consenting sexual activity N (%)	Non consenting sexual activity N (%)	Pearson X2	P value
Schooling				
Yes	70 (53%)	128 (62%)		
No	62 (47%)	80 (38%)		
Total	132	208	2.403	0.121
Marital status of parents				
Married	102 (84%)	154 (88%)		
Divorced/separated	20 (16%)	22 (22%)		
Total	122	176	0.902	0.342
Mother lives with family				
Yes	104 (85%)	159 (80%)		
No	18 (15%)	40 (20%)		
Total	122	199	1.460	0.227
Total	110	204	2.001	0.157

Father lives with family				
Yes	100 (84%)	166 (85%)		
No	19 (16%)	30 (15%)		
Total	119	196	0.025	0.875
Siblings in the family				
Yes	104 (90%)	194 (94%)		
No	11 (10%)	12 (6%)		
Total	115	206	1.552	0.213
Parents being the caregiver at the time of the incident				
Yes	84 (66%)	104 (48%)		
No	43 (34%)	114 (52%)		
Total	127	218	10.998	0.001
Income level				
Low	92 (84%)	182 (89%)		
Middle/high	18 (16%)	22 (11%)		
Total	110	204	2.001	0.157
Note: Patients without information on relevant predisposing factors were not included in the analysis.				

There was no association between the type of sexual act for which a medico-legal examination was carried out and school attendance or socio-demographic characteristics of the parents. In this sample, only a few mothers of victims had gone abroad. There was a significant association between type of sexual activity and the caregiver at the time of the incident; among the consenting activity incidents, in 66% of cases the caregivers were parents as compared to 48% in non-consenting incidents. This difference may be due to some adolescents living as domestics, in children's homes or brothel houses. Eight adolescents were living in brothel houses.

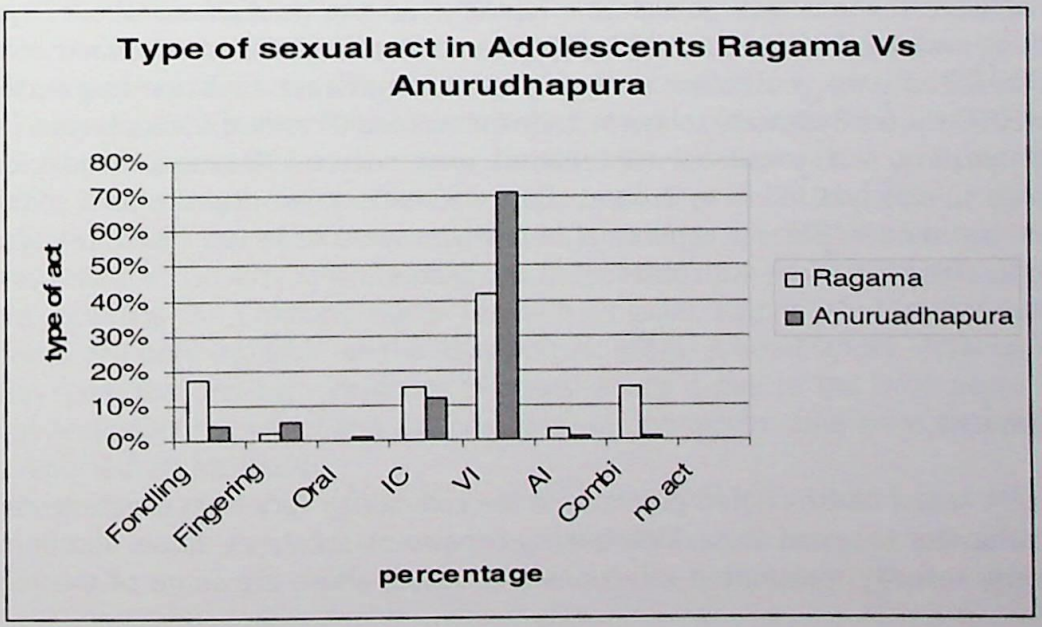
More than two thirds of the victims examined were from the low socio-economic strata. Fathers of more than 90% of victims were non-skilled workers in both urban and rural areas. Mothers of 38% and 62% of adolescents were housewives in Ragama and Anuradhapura, respectively; mothers of 28% and 15% of adolescents were non-skilled workers in Ragama and Anuradhapura, respectively.



38% of adolescents examined had engaged in 'sexual activities' with boy friends. Seven percent had engaged in sexual activities with a stranger implying that 93% of adolescents had a sexual event with a person (s)he usually associates with. The alleged assailant was a relative of 17% of adolescents from Ragama and 32% of adolescents from Anuradhapura. The odds ratio of an adolescent from Anuradhapura having sex with a relative as compared to an adolescent from Ragma was 2.31 (95% CI. 1.36-3.93). Among adolescents in Ragama, there were 22 first degree relatives and 11 second degree relatives (ratio 2:1) among the alleged assailants. In Anuradhapura, the ratio between first and second degree relatives was 1:1.7. The majority of first degree relatives were biological fathers followed by step fathers and grandfathers. Among the second degree relatives, there were large numbers of brothers-in-law and middle aged uncles.

Among boyfriend – girlfriend relationships in Ragama, 63% had eloped as compared to 19% in Anuradhapura. In both groups, nearly half of the girls had a relationship of less than 6 months. There was a marriage ceremony in only one instance.

There were 8 sex-workers in the sample. There were 6 claims of using a sedative or a drug prior to the act and the alleged abuser was not the boyfriend in any of these instances.



The commonest sexual activity was vaginal intercourse (Ragama 42% and Anuradhapura 71%). 17% and 15% of adolescents from Ragama had engaged in fondling and intracrural intercourse as compared to 4% and 12% from Anuradhapura, respectively. Combined sexual acts (oral, intracrural, vaginal and anal) were seen more in urban areas. There was a significant difference in penetrating and non penetrating sexual intercourse between Ragama and Anuradhapura adolescents. An adolescent examined for medico-legal purposes from Anuradhapura was 2.47 times more likely to have penetrative sex as compared to a similar adolescent from Ragama.

Sequelae of the 'sexual activity'

In this study, bodily injuries were found in 7% of adolescents from Ragama and in 2% of adolescents from Anuradhapura. All the injuries were either abrasions or contusions. Genital injuries were present in 55% of cases from Anuradhapura and 42% of cases from Ragama. Twenty adolescents (9%) from Ragama and 16 (10%) adolescents from Anuradhapura conceived from the sexual activity. There were 3 abortions (2 from Ragama and 1 from Anuradhapura).

Of the 356 cases analyzed, only 4 had used any contraceptive (one person used a condom and three used pills). All pill users were sex workers. Sexually transmitted infections (STI) were found in two cases (one case non specific vaginitis and one genital herpes). A Psychiatrist's report was available for perusal in 158 (78%) cases from Ragama, among whom, 61 persons (30%) exhibited some psychological sign, symptom or disease condition as a sequel to the incident. There were 8 mentally subnormal adolescents and 2 cases of schizophrenia. Depressed feelings, anxiety, fear, emotional disturbances were seen in 36 cases; suicidal ideas with attempted suicide was found in 3 cases. Post traumatic stress disorder as a sequel to the incident was seen in 3 cases. Abnormal behaviours were observed (ticks, pseudoseizures, hyper-sexualized behaviour with stealing) in three cases.

Discussion

Adolescent sexual health related problems in the community vary from experimental and risk taking behaviour to sexual abuse. Delinquency behaviours, substance abuse, abortion, teenage pregnancy, sexually transmitted infections and sexual abuse are some of the highlighted

problems. As the age of a major, i.e. 18 years falls during adolescence, problems associated with the law due to the age factor is common, though some adolescents may be considered as 'mature minors'. However, most of the time when an adolescent seeks help from the law enforcing agency, they have problems that cannot be solved at domestic or at community level. Many of such issues conflicts with acceptable socio-cultural and religious norms and almost all such cases contravene the law. This study, based on cases where justice was sought by coming for a medico-legal examination, represents only one end of the spectrum of adolescent sexual health related problems especially sexual abuse. This is probably the tip of the iceberg.

In this study, 92% of the victims were less than 18 years with the peak of sexual activity occurring between 14-15 years. The UNICEF (2004) survey conducted among 15 -19 year olds showed that children out of school were the most sexually active. A self reported survey in USA reports that 16-19 year olds are the most victimized by sexual acts with 4.3 rapes or sexual assaults per 1000 persons (Rennison 2001). The early peak observed in this study is probably due to this study not being a community survey, but a case analysis from an urban and a rural population who have sought justice.

Statistics of adolescent sexual abuse varies from region to region and from country to country. According to the National Child Protection Authority, Sri Lanka sexual abuse is common during adolescence. Anuradhapura Police Division with a population of 791,000 received the highest number of alleged sexual abuse (all ages) complaints for the past few years (n=170-200 cases per year). Gampaha and Kelaniya Police divisions which cover a population of 2,125,000 received 70-90 complaints of sexual abuse per year for the past few years (Police Department Sri Lanka 2007). Medico-legal examinations on alleged sexual assaults /abuse in Sri Lanka are conducted by Judicial Medical Officers under the supervision of specialists in forensic medicine who are attached to Government Hospitals. In the western province, there are many such institutions including the Colombo North Teaching Hospital, Ragama, but in Anuradhapura, such services are only available at the Teaching Hospital, Anuradhapura. Although many sociologists claim that the high incidence of sexual abuse is due to the large population of refugees in Anuradapura District and the on-going war in neighbouring areas, only one such case was reported in this study.

Predisposing factors for adolescent sexual activity

Many community based research studies conducted by Government organizations and Non Governmental Organizations link the open economy, incorrect but stimulating information through mass media, the long standing conflict situation, problems within the family and parental migration for employment as major contributing factors that have aggravated the sexual and reproductive health (SRH) problems among adolescents in Sri Lanka (Plan Sri Lanka 2007; Wijemanna 2005).

In this study, the majority of cases from both urban and rural areas were among the low socio economic stratum. This is an universal phenomenon common to physical or sexual abuse, as poor socio-economic groups have more life crises, including violence with limited economic and social resources (WHO 1999; 2004). In the USA, the incidence of rape and sexual assault among persons with an annual household income less than $7500 was over twice as high as that of persons in other income groups (Rennison 2001). The urban and rural rates were almost twice as high as the suburban rate. In this study, there was no difference between urban and rural populations though the percentage of poor people was higher.

Although problems within the family such as parental separation, divorce, single parent, death of parents have been highlighted as contributory factors for child and adolescent sexual abuse, in this study, only one fifth of the adolescents had such problem. Parents of approximately 80% of adolescents were married and living together. However, we acknowledge the fact that the presence of married parents does not necessarily mean that the environment the adolescent lives is happy and secure. In Sri Lanka, the family unit, extended families, and social and cultural norms make it compulsory to live in a marriage union however uncomfortable or abusive the relationship between husband and wife is. Divorce is very uncommon in Sri Lanka, with an annual average rate of 0.25%.(WHO 2004) In this study, very few divorced parents (n=2) were found but there was a considerable number of parents separated (n=30). Nonetheless, the 'triad' of violence against wife, child abuse and substance abuse including alcoholism are common well accepted associations. Since this study was based on available case records, the associations of domestic violence, substance abuse and alcoholism of the father was not analysed as some case records had not reported the absence of such factors. However, there were many cases of alcoholism when the father was the alleged assailant.

The problem of parental migration for employment to Middle Eastern countries has been highlighted in the media as one of the root causes for increased sexual abuse of children and

adolescents. According to Central Bank statistics in 2002, around 204,000 Sri Lankans were working as migrant workers abroad. In this sample, mothers of 10% of adolescents were abroad at the time of the event. Mothers of 38% and 62% of adolescents from Ragama and Anuradhapura, respectively, were housewives. Fathers using an adolescent daughter as a substitute for a wife who has gone abroad is a well accepted fact among sociologists in the explanation of reasons for incest. Although similar facts were revealed in this study, sexual abuse was more common in families where the mother was present. Therefore, mothers going abroad leaving the adolescents at home cannot be highlighted as a major risk factor in this study.

Siblings in the family and the caregiver of adolescents were other factors that were assessed. The majority of adolescents (74%) had at least one sibling. Reduced parental care due to time spent on the younger sibling may have contributed to increased sexual activities among the adolescents.

The majority of adolescents from Ragama (53%) and Anuradhapura (58%) were living with their parents at the time of the incident; 17% of adolescents from Ragama and 19% of adolescents from Anuradhapura were living with a single parent. This implies that sexual abuse is more common in families where both parents are present rather than 'problem' families. Although it has been argued that the extended family system in developing counties especially in South Asia protects the youngsters as relatives are there to look after the adolescents, it is also possible that the extended family could predispose to sexual abuse, especially in closed and overcrowded family environments. More research is needed at the community level to understand these problems.

Alleged assailant

Researchers all over the world agree that the majority of perpetrators of sexual abuse of any society are known persons rather than strangers (Rennison 2001; Waidyrathna 2001; WHO 2004). In this study, 93% of victims knew their assailant; the alleged assailant was a stranger to 10% of adolescents from Ragama and 4% of adolescents from Anuradhapura. Sexual activity with a boyfriend was a significant problem in both urban and rural areas though there was no difference between urban and rural communities. Short term associations leading to sexual acts were seen in both populations. Sexual relationships with boy friends or the concept of 'love' being the underlying reason for sexual activity has to be interpreted carefully in adolescents. Sri Lankan society is a patriarchal society. The accepted role play of a male being

superior to a female is cultivated from childhood and adolescence. This belief often leads a growing male to perceive that he has the right to expect sexual pleasures from a female whenever he wants regardless of her consent. Many misconceptions and mixed messages can occur when it comes to sexual relations, particularly in adolescents experiencing their first sexual encounter (Sexual abuse forum 2007). This may ultimately result in coercion or even physical force, which then becomes sexual assault or rape. The adolescent girl allowing the boyfriend to have his way was very commonly seen in the 'presenting complaints' of adolescents from Ragama and Anuradhapura both, rather than the victim actively participating in the sexual act.

Traditionally, marriages of young people are arranged. However, 'love marriages' are also common. Love marriage and elopement is a common way of young adults to circumvent their parents' choice of mates (de Munck 1996; 2007). In this study, 63% of females of the urban population who had boyfriends had eloped as compared to 19% of rural girls from Anuradhapura. The main reason for a medico-legal examination in this kind of case was the missing girl who was a minor alleged to be friendly with a boy whom the parents disapprove. Almost all the parents who gave consent for medico-legal examination wanted to know whether their daughter is still a 'virgin' as preserving virginity till marriage is quite important. Although elopement and marriage is very much interlinked there was only a single case of a registered marriage, where the marriage was registered after giving a false age. In this study, the percentage of elopement in rural areas was one third that of the urban population probably due to the fact that the parents of eloped parties get together and the marriage is officially registered to preserve the girl's reputation than going through the legal system which brings more disrepute to the family. Nonetheless, an earlier study from Anuradhapura showed that many victims whose assailant was the boyfriend came for a medico-legal examination after the partners broke the relationship (Waidyaratne 2001). This shows that the rural population seeks the help of law enforcement authorities only when their problem solving mechanisms fail at the community level and become helpless.

Although the legal possibility of charging the boy friend for abduction and rape exists when the age of the girl is less than 16 years, it is hardly implemented by law enforcement authorities in cases where the two families come to an agreement if the girl is found to be a 'virgin' after medico-legal examination. Many judicial examiners have seen cases where parents approve 'boyfriends' they did not before, provided the couple postpone the marriage until the girl attains the legal age of marriage. However, no detailed community studies have been done in these cases as to what really happens to these adolescents who eloped in terms of whether

they married the same person, or whether such teenage marriages were conducted with the blessings of parents. The boyfriend (regardless of age) can be arrested and may be held in remand custody till the medico-legal report is available and further indictment at the High Court level is done when material available is studied by a state counsel and a decision is made in concurrence with a senior officer (personal communication – Mr. Palitha Fernando, Attorney General's Department).

The most significant finding in this study was the high rate of adolescent abuse by a relative in the rural population as compared to the urban population. A study conducted in Anuradhapura, Ratnapura and Colombo-South revealed the same problem. 40% of children out of 148 children showed that the abuser was a relative (De Silva 2001). A possible reason is that adolescents from rural communities such as in Anuradhapura may be moving with blood relatives more closely unlike in urban areas. The majority of these assailants were 2nd degree relatives, and the relationships were not within the accepted social norms. The most common story in these cases was that the adolescent was being abused by an elderly relative whom the parents entrusted to supervise when they were away from home engaged in cultivation or when the mother was at the hospital delivering the younger sibling. In contrast, adolescents in the urban areas were abused by an elderly known person, the majority being neighbours (non relatives). Adolescent sexual abuse by a relative or a known person has been highlighted in many community based studies. An anonymous questionnaire to 899 A/L and undergraduate students revealed that 18% of boys were abused by a relative or neighbour and 4.5% of girls were sexually abused (de Silva 2001). De Silva (2001) further states that many girls did not divulge the abuser, it is likely that the abuser was an immediate family member.

Incest has been known to occur from biblical times in western and eastern cultures. In Sri Lanka, incest carries a higher penalty than for rape. In this study, the father was the alleged assailant in the majority of cases. Others include stepfather, grand father, paternal uncles and brothers. In the majority of cases, the mother did not believe the allegations against the father or stepfather in the initial stage. Therefore, in-depth research about the family structure, spousal relationships, substance abuse, alcoholism, and the abuser being subjected to sexual abuse in childhood has to be studied before preventive strategies are recommended.

Type of sexual act

The UNICEF survey in 2004 and a University Survey in 1998 showed that non penetrative sex was more common than penetrative sex among adolescents and young persons in Sri Lanka (UNICEF 2004; Silva 1998). The University survey revealed that only 6% of the surveyed population had penetrative sexual acts (Silva 1998). In this study, the commonest type of sexual act was vaginal intercourse. Although other forms of sexual acts were seen in the rural and the urban populations, the percentage being not higher than 20% may represent the normal trends in society, where Victorian attitudes towards sex exist (de Munck 2007). The deviation of this study population from the reported sexual practices of adolescents may be due to the fact this study represents cases only from one end of the spectrum of SRH problems. Penetrative sexual acts between persons without consent carry more punishments as compared to non-penetrative sex depending on the age of the victim and other factors including the legal system which vary from country to country. For example, the consenting age for sexual intercourse in Sri Lanka and England is 16 years, whereas in California it is 18 years; the maximum punishment for rape is 20 years of rigorous imprisonment in Sri Lanka, whereas it is the death sentence under Shariah laws (Slaughter et al. 1997; Elfawal 2003). Although the legal definition of 'rape' relates to acts of penetration of an orifice (mouth, vagina, or anus) by an object or body part without consent, a "vaginal penetration" in law is referred to penetration of the labia and does not require the penis to actually enter into the vagina (Lines 1844; Rogers 2005). Therefore, the number of cases of 'alleged rape' may be more than the number of victims who had vaginal intercourse.

Sequelae of sexual acts

Sexual acts and injuries are almost inseparable in court when consent for sexual activity is questioned. Although injury can occur in both consensual and non consensual sexual intercourse, absence of injures is also seen in both types of sexual acts (Slaughter et al. 1997). In keeping with the trends of other studies on victims of sexual abuse, this sample too showed that only a small percentage get bodily injuries whereas genital injuries were more common. Presence or absence of injuries following sexual acts not only depend on consent but also on the period between the act and the examination. Similar percentages of genital injuries (68%-73%) have been reported when examinations were conducted on victims within 72 hours of the sexual assault irrespective of being an adult or adolescent (Slaughter et al. 1997; Lindsay 1999; Adams, Girardin & Faugno 2001). A low percentage of injuries detected in this study (55% from Anuradhapura and 42% from Ragama) is probably due to the fact that the majority of

cases were late presentations. The other reason that such a high number of injuries were detected in other studies is probably due to the fact that all the three studies used colposcopy whereas examination in our study was confined to conventional rape examination. Slaughter and Brown (1992) report that colposcopy enhances injury detection up to 87% as compared to conventional examination.

Adolescent pregnancy as a sequel to consensual or non consensual sexual activity creates problems to the mother, the child and society. Children of teenage mothers who lack parenting skills are more vulnerable to abuse. In Sri Lanka, lack of legal provision of an abortion for a victim of rape makes the adolescent undergo lifetime suffering with an unwanted child unless the examining doctor provides emergency contraceptive. 10% of the study population had an ongoing pregnancy at the time of the medico-legal examination, indicating the severity of the problem. 40% of pregnancies were caused by the boyfriends; all the others can be categorized as cases of incest or sexual abuse. This is a very unfortunate situation where social stigma is attached. Immediate contraceptives can be prescribed to the adolescent during the medico-legal examination, but in late presentations this becomes a problem. Hence, the public should be educated about the availability of such treatment and be encouraged to carry out an early examination or get a prescription from a GP.

Although STD screening is routinely done on all victims, the results of this study indicated a low prevalence in both the urban and the rural samples. Studies on sexual assaults and STIs in other countries suggest that acquiring a STI after sexual assault occur in both girls and boys but the interpretation of the results has to be done carefully, especially when they have an existing disease (Ross, Scott & Busuttil 1991; UNAIDS 2002). The reason for our sample to have only three cases of STIs may be due to the low prevalence of STIs in Sri Lankan society. According to UNAIDS, the adult prevalence of HIV/AIDS in Sri Lanka in 1999 was 0.07%.

Psychological sequelae after sexual assault are well documented in medical literature ranging from adjustment disorders to life long complications. According to the US National Center for Victims of Crime and Crime Victims Research and Treatment Center statistics, nearly one-third of all rape victims develop Rape-related Posttraumatic Stress Disorder (RR-PTSD) sometime during their lifetimes, and more than 11% still suffers from it. Although 30% of our sample had a sign or symptom related to PTSD or Rape Trauma Syndrome, there were only 3 diagnosed adolescents with PTSD. All three cases can be categorized as bad sexual assault where one case involved a priest with long term abuse, another involved a known person from the village sexually assaulting the adolescent leaving bodily injuries and the other case involved a

relative (father). Studies on rape victims report that these people are 4.1 times more likely than non-crime victims to contemplate suicide and, in fact, 13% of all rape victims actually attempt suicide (National Center for Victims). Although Sri Lanka records high suicide and attempted suicide rates in the world, in this study there were only 3 cases of suicidal ideation and attempted suicide. More research in this area is needed to understand the psychological problems in this community. Diagnosing mental sub-normality and mental disorders in alleged sexual assault is important since they have a higher punishment. This sample had several such cases highlighting the importance of conducting mental state examinations and referral to a psychiatrist. Somatoform disorders, substance abuse and alcoholism, well known long term sequalae, was not assessed in this study as it was based on case records with no long term follow up. As the psychological and psychiatric services are not uniformly distributed in Sri Lanka, forensic doctors should have a special training in psychological assessment of victims of alleged sexual assault to strengthen the management of these cases with necessary referrals.

Conclusions

This retrospective comparative case study based on reports of medico-legal examination in urban and rural populations revealed that adolescents were more susceptible to engage in sexual acts around 14 years. Amongst commonly believed risk factors of alleged sexual abuse in adolescents, the most significant problem identified in this study was poor socio-economic status. Risk factors such as mothers migrating abroad for employment leaving the adolescent vulnerable for sexual activity were not significant issues in both rural and urban areas.

The most significant finding of this study was the high incidence of sexual activity especially penetrative sex with a relative or a known person in the adolescent's own environment. In the majority of cases both parents were married and physically present at home. High rates of incest and sexual abuse by relatives in rural communities indicated that there was an erosion of family values and extended family structure. Consenting sexual activities with a boyfriend have its own legal burden on society. The problem of teenage pregnancy and psychological sequelae after an alleged sexual assault were also highlighted.

Recommendations

Need for further research

Research studies on adolescent SRH issues are few in Sri Lanka. Large scale studies on the prevalence and the incidence of adolescent sexual abuse and identifying the root problems in different communities are needed to understand the extent of the problems. Research on economic burden to the society incurred by sexual abuse is needed to plan effective preventive strategies. Research on strengths and weaknesses of existing community based protective measures should be implemented to improve the standards of care. Research on the long term effects of alleged sexual abuse during adolescence is needed in our country to understand whether there are specific problems related to communities to plan future preventive programmes. The legal outcome of alleged sexual abuse of adolescents and the effect of it on their health is needed to develop faith in the legal system and to encourage more reporting of abuse.

Need of preventive programmes through awareness and education

Planning of preventive programmes should be based on good research findings where target group changes are expected. Preventive programme outcomes should be evaluated, assessed and audited to implement better programmes in the future. In the prevention of adolescent sexual abuse, we suggest having a preventive programme on incest and sexual abuse by relatives and known persons through awareness and education of target groups, mainly low socioeconomic groups where adolescents are in the age group of 14 and above. Adolescents should be educated about their right to live without abuse; strengthening their cognitive capacity enables them to resist any coercion from family members, relatives or known persons. Education on facilities available for reporting to relevant authorities and law-enforcement agencies through teachers and peers may be effective. Educating the adolescent on early reporting and help in the investigation of the case should be highlighted. Emphasizing on cultural values on preserving virginity and abstinence of sex till marriageable age should be promoted through school education. This is especially significant when we consider the finding of the high prevalence of vaginal intercourse and teenage pregnancy. Although prevalence of STIs and AIDS/HIV in Sri Lanka is low as compared to other Asian countries, continuous education of safe sexual practices should be encouraged. Public education programmes through media on adolescent sexual health and sexual abuse should be addressed regularly to educate the public.

Need of policy changes

Although a lot of legal reformation and policy changes occurred during the late nineties regarding child and adolescent protection, still many loopholes remain. The delays in serving justice while the adolescent is growing to adulthood make them lose faith in the legal system. Special courts for children with a more equitable regional distribution, child friendly courts, and developing a policy to have a minimum and maximum period to serve justice may improve the efficiency of the judiciary.

The investigative capacity in law enforcing agencies and medico-legal examination should be improved. Minimum standards should be laid down by law or professional bodies like the Ministry of Health and Department of Police regarding the individual who handles the case and the standard procedure to adopt. Use of standard examination protocols not only improves the quality of the examination technique but also the medico-legal reports sent to the courts. This can be done by academic bodies or through the ministry. Already such examination protocols are being developed by the College of Forensic Pathologists to be implemented island wide through the Ministry of Health.

The need on policy change of introduction of legal abortion after sexual abuse should be lobbied to prevent teenage pregnancy and unwanted children. If the former cannot be achieved, promotion of emergency contraception should be activated through GPs and over the counter purchase in cases of alleged sexual abuse.

At present there is a discrepancy in consenting age for sexual intercourse and age of marriage. In Sri Lanka, the former is 16 years where as the latter is 18 years. A person who gives consent to sexual intercourse at the age of 16 years cannot marry him/her till (s)he is 18 years. This promotes premarital sex, which can lead to many negative consequences. Considering the vulnerability of the adolescent in his/her own environment, we suggest to increase the age of consent to sexual intercourse to 18 as in some countries unless the legal age for marriage could be decreased to 16 which can happen with the consent of the parents or guardian.

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