10 YEARS REVIEW OF STATUTORY RAPE CASES IN HUSM (RETROSPECTIVE STUDY 2005-2014)

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List of Abbreviation

ASD	**Acute Stress Disorder**
COCP	**Combined Oral Contraceptive Pills**
HIV	**Human Immunodeficiency Virus**
HUSM	**Hospital Universiti Sains Malaysia**
OR	**Odds Ratio**
OSCC	**One Stop Crisis Centre**
PEP	**Post-Exposure Prophylaxis**
PTSD	**Post-Traumatic Stress Disorder**
SCAN team	**Sexual, Child Abuse and Neglect team**
SPSS	**Statistical Package for the Social Sciences**
STI	**Sexually Transmitted Illness**

ABSTRACT

Objective: To analyse the demographic data, genital injury, physical and psychological impact among statutory rape survivors aged 10-15 years old, treated in Hospital Universiti Sains Malaysia (HUSM) One Stop Crisis Centre (OSCC) from 2005-2014.

Design: Descriptive study, retrospective data collection

Material and method: 380 cases were selected randomly from 616 cases of statutory rape treated in HUSM from year 2005-2014, and all important data such as victims' and assailants' profile, sexual assault characteristics, findings during physical examination, laboratory results and psychological impact on survivors were documented and analysed.

Results: All 380 patients were Malay, and majority of the patients were 15 years old (44.2%). 207 patients (45.5%) had previous sexual exposure; either consented sexual intercourse (86.5%) or previous rape (13.5%). Majority of the victims were raped by known assailants, which was seen in 207 cases (85.2%), and 9.6% were incest. 81% of the cases involved single assailants, followed by 14% being raped by ≥ 3 assailants. All the victims had vaginal penetration, 40.5% had finger penetration, 13.9% had forced oral sex on the assailants and 3.9% had anal penetration.

Genital injury prevalence was 94.2%, with multiple genital injury recorded in 85% of the patients. Factors that were associated with multiple genital injuries were unconsented sexual intercourse / rape (p=0.026) age 13-15 years old (p=0.05) and forced oral sex on the assailants (p=0.029).

The commonest type of genital injury was tear (79.4%) and hymen was found to be the commonest site of injury among the victims (79.2%). VDRL was reactive in 0.5% of the patients, and no incidence of N.Gonorhoea infection was recorded. 15 patients (3.9%) were pregnant, with majority of the patients were in the third trimester (40%). 61 patients (16%) were diagnosed with psychiatric disorders, and Acute stress disorders recorded to be the highest frequency found among the patients (6.32%).17 patients (28%) with psychiatric disorders were started on treatment and were under psychiatric follow-up.

Conclusion: Majority of the patients were sexually abused by known assailants, and sustained multiple genital injury. The prevalence of pregnancy and STI were low, whereas psychiatric disorders were diagnosed in 16% of the patients.

ABSTRAK

Objektif: Kajian retrospektif data demografi, kecederaan genitalia, kesan fizikal dan psikologi di kalangan mangsa rogol bawah umur berusia 10-15 tahun, yang telah dirawat di Pusat Rawatan Krisis Setempat, Hospital Universiti Sains Malaysia dari tahun 2005-2014.

Design: Pengumpulan data secara retrospektif, dan kajian jenis deskriftif.

Metodologi: 380 kes telah dipilih secara rawak daripada 616 mangsa rogol bawah umur yang telah dirawat di HUSM dari tahun 2005-2014, dan semua data penting seperti profil mangsa dan pemangsa, ciri-ciri serangan seksual, keputusan pemeriksaan fizikal, keputusan makmal dan kesan psikologi kepada mangsa telah direkodkan dan dianalisa.

Keputusan: Semua 380 mangsa rogol adalah Melayu dan majoriti mangsa adalah berusia 15 tahun (44.2%) . 207 (45.5%) daripada mangsa mempunyai pendedahan seksual sebelumnya, sama ada hubungan seksual secara rela (86.5%) atau pernah dirogol sebelumnya (13.5%). Majoriti mangsa telah dirogol oleh pemangsa yang dikenali, iaitu sebanyak 207 kes (85.2%), dan 9.6% adalah kes sumbang mahram. 81% daripada kes-kes melibatkan seorang pemangsa, diikuti oleh 14% dirogol oleh tiga atau lebih pemangsa.

Kesemua mangsa rogol mempunyai penetrasi faraj, 40.5% mempunyai penetrasi faraj oleh jari, 13.9% diapaksa melakukan oral seks ke atas pemangsa dan 3.9% mempunyai penetrasi pada dubur. Sebanyak 94.2% pesakit mempunyai kecederaan genitalia, dan majoriti pesakit (85%) mencatatkan dua atau lebih kecederaan. Antara faktor yang telah dikenalpasti

menyebabkan sekurangnya dua kecederaan pada genitalia adalah hubungan seks tanpa izin / rogol (p=0.026), umur pesakit 13-15 tahun (p=0.05) dan mangsa yang dipakssa melakukan seks oral ke atas pemangsa (p=0.029) .

Jenis kecederaan genitalia yang paling banyak direkodkan adalah jenis “tear” atau koyakan pada genitalia (79.4%) dan selaput dara atau “hymen” adalah bahagian yang paling banyak direkodkan berlaku kecederaan (79.2%). Ujian VDRL didapati reaktif dalam 0.5% daripada pesakit, dan tidak ada pesakit yang didapati positif jangkitan N.Gonorhoea. Seramai 15 pesakit (3.9%) telah disahkan mengandung, dengan majoriti pesakit berada dalam trimester ketiga (40%).

Seramai 61 mangsa (16%) menghidap masalah psikologi, dan Masalah Stress Akut merupakan jenis penyakit yang direkodkan paling tinggi (6.32%). 17 pesakit (28%) yang mengalami gangguan psikiatri telah diberikan rawatan, dan seterusnya menerima rawatan susulan di klinik Psikiatri.

Kesimpulan: Majoriti pesakit telah didera secara seksual oleh pemangsa yang dikenali, dan kebanyakannya mengalami lebih dari dua kecederaan genitalia. Prevalens kehamilan dan Jangkitan Penyakit Kelamin adalah rendah, manakala seramai 16% pesakit mengalami masalah psikiatri disebabkan oleh kesan daripada rogol.

INTRODUCTION OF THE STUDY

Violence against women has been showing a worrying trend over the years. One out of five women has been physically abused in their lifetime, and statistics have shown that at least 35% of women had been physically or sexually abused by either their partners or strangers.

Violence is defined as any act of gender bias that results in or likely result in physical, sexual or psychological harm or suffering to women whether occurring in public or private life. Rape is one of the example of violence among women that need to be seriously looked into. Latest statistic in published in 2015, from 2010-2013, Malaysia recorded a total number of 42,449 domestic violence, 31,685 rape cases and 24,939 cases of molest. On average, 3000 new rape cases reported each year, meaning that at least 8 new cases were reported each day. Majority of the reported cases were girls aged 16 or below.

ADOLESCENT

World Health Organization defines adolescent as the critical transitional period from childhood to adulthood, associated with major changes in both physiological and psychological aspects. Age for adolescent group is defined from 10-19 years old. They have lack capability of understanding difficult concepts or problems, less control in their health and sexual behaviour and poor judgement that affects decision making. As a result, many of adolescents get involve into substance abuse, unintended pregnancies, suffered from sexually transmitted diseases, and other health problems.

RAPE

According to WHO, sexual violence is defined as 'any sexual act, attempt to obtain sexual act, unwanted sexual comments or advances, or acts to traffic or otherwise directed, against a person's sexuality using coercion, by any person regardless of their relationship to the victim, in any setting, including but not limited to home and work'. It basically covers a wide ranges of activities, from forcible sexual acts to verbal pressure to involve in unwanted sexual activities.

Starting from 1st January 2013 the United States of America introduced a new definition of rape which was 'Penetration, no matter how slight, of the vagina or anus with any body part or object, or oral penetration by a sex organ of another person without the consent of the victim'.

In Malaysia, rape is defined as penile penetration of the vagina against the women's will or consent. According to the Laws of Malaysia Act 574, Penal Code 375, a man is said to commit rape who except in the case hereinafter has sexual intercourse with a woman under circumstances falling under any of the following:

a) against her will
b) without her consent
c) with her consent, when her consent has been obtained by putting her in fear or death or hurt herself or any other person, or obtained under a misconception of fact and the man knows or has reason to believe that the consent was given in consequence of such misconception.

Types of Rape:

a) **Diminished Capacity Rape**: when one person forces sexual penetration on another person who cannot consent to sexual act, due to limited physical or intellectual ability

b) **Age Related Rape**: also known as statutory rape as specified in federal and state law. Sexual action with a person below a minimum age is considered illegal in all cases, even if consented (incapable of giving consent). In Malaysia, the age is 16 (Laws of Malaysia Act 574 Penal Code 375, 2006) , whilst other countries take 12 as the age to define statutory rape.

c) **Incest:** A type of rape dictated by the relationship between two parties whom are closely related (in other words: family)

d) **Partner Rape (marital rape):** Rape involving a person's partner

- Battering rape: involves both rape and sexual violence
- Force Only rape: involves the imposition of power and control over another

e) **Acquaintance Rape:** also known as 'date rape' as the two people involved may be in social relationship at the time

f) **Aggravated Rape:** a type of rape which involves:

- Forced sex acts by threats or serious body injury
- Forced sex involving an unconscious of drugged victim
- Sex acts with children under age (below the age of 16 or 12 according to the countries.

PHYSICAL AND PSYCHOLOGICAL IMPACT OF RAPE

Sexual violence may result in both health and psychological consequences. Apart from the physical injuries sustained by the victims, other health issues such as infective diseases, sexual transmitted disease need to be examined as well. Unwanted pregnancies post major psychological impact on the victims, having to deal with both physical changes and stigma about the perception by the community. Most of the adolescents resort to substance abuse, to help dealing with stress and trauma encountered following the incident. Some also need to be followed up regularly by the psychiatrist, needing medical treatment.

LITERATURE REVIEW

According to the national statistics published by Women's Aid Organization (WAO) the number of violence against women has been showing increasing trend. From year 2005-2014, 28,471 cases of rape had been reported and on average 3000 rape cases were documented every year. 4,514 cases (16%) were brought to court (16%), and only 756 (2%) perpetrators proven guilty.

Table 1: Frequency of violence among women year 2000-2013, from Royal Malaysia Police and Ministry of Women, Family and Community Development via Women's Aid Organization Malaysia.

Police reports	Domestic violence	Rape	Incest	Outrage of modesty (molestation)	Sexual harassment at workplace
2000	3468	1217	213	1234	112
2001	3107	1386	246	1393	86
2002	2755	1431	306	1522	84
2003	2555	1479	254	1399	82
2004	3101	1760	334	1661	119
2005	3093	1931	295	1746	102
2006	3264	2454	332	1349	101
2007	3765	3098	360	2243	195
2008	3769	3409	334	2131	Unavailable
2009	3643	3626	385	2110	Unavailable

2010	3173	3595	Unavailable	2054	Unavailable
2011	3277	3301	342	1941	Unavailable
2012	3488	2998	302	1803	Unavailable
2013	2767	2767	249	1730	Unavailable

Sexual abuse of children is different from adult sexual abuse and need to be managed in its own way (Heger A, 2000). WHO defines child sexual abuse as "the involvement of a child in sexual activity that he or she does not fully comprehend , is unable to give consent to, or for which the child is not developmentally prepared and cannot give consent, or that violates the laws or social taboos of society. It is evidenced by the activity between a child and an adult or another child who by age or development is in a relationship of responsibility, trust or power, the activity being intended to gratify or satisfy the needs of the other person.

Children rarely disclose sexual abuse, due to few reasons. In majority of the cases, physical violence is rarely involved, as the perpetrator tries to manipulate and hide the evidence. The assailant is usually a known/ trusted care giver, and in most cases, the sexual abuse has been occurring for many weeks/ years. Incest has been reported to occur in ~ 1/3rd of the cases.

Examination of a rape victims involves many departments such as the Police department, Accident and Emergency, Obstetrics and Gynaecology. Detailed history taking, together with general physical and genital examination are performed to gather information and evidences. In other countries, forensic departments are directly involved in managing rape cases.

Proving a rape in court remains a big challenge. Majority of the cases occurred in the absence of eye witness. It is difficult to put the blame on the assailant due to the lack of evidence.

Despite of an established local protocol in managing rape cases, many victims choose to hide the incidents. Most of the patients come after 72 hours of the assault, making evidence collection and examination less helpful. Apart from stigma and embarrassment, the victims are also worried of the attitudes of the medical staffs towards them.

All Women Society Malaysia (AWAM) conducted a study in 1998-1999 looking into the rape incidences, available protocols and involvement of medical personnel in managing rape cases in Malaysia. Few factors that had been identified leading to under reporting of rape cases were:

- Some of the cases e.g rape with murder were classified under homicide alone instead of rape
- The survivors were afraid of being blamed for, stigma, and some were forced by the family to marry the rapist. Many of the survivors of incestuous rape didn't come forward and some were even pregnant when the report was made.
- The procedure of the reporting and getting medical evidences was so complicated, involving many departments such as Emergency and Accident, Obstetrics and Gynaecology, Pediatrics, Forensic, and the police department. With the introduction of One Stop Crisis Centre to the system, the process became more practical and smooth, without compromising the confidentiality of the case.

2.2 EXAMINATION OF A RAPE VICTIM

As in other patients, examination starts with a detailed history taking. For children, consent need to be obtained from the parents/ care takers. History taking in children can be very challenging, and needs a lot of patience. Sometimes, they may present with other complaints, and with careful interpretation and detailed history taking, some of these presentations may lead to findings suggestive of sexual abuse (Finkel MA 2002).

Table 2: Physical and behavioral indicator of child sexual abuse

PHYSICAL INDICATORS	BEHAVIORAL INDICATORS
Unexplained genital injury	Depressive symptoms, social withdrawal
Recurrent vulvovaginitis	Acute traumatic response : irritability and clingy behaviour
Vaginal discharge	Sleep disturbance
Anal complaints (fissure, pain, bleeding)	Eating disorders
Pain on urination	Problems at school
STI	Poor self esteem
Pregnancy	Inappropriate sexualized behaviour

The child's position during examination is important. If there is any hymen abnormalities detected during examination in dorsal position, the child need to be examined in knee chest position to exclude gravitational effect on these tissues.

Understanding of normal anatomy and physiological changes of the external genitalia development is important to be able to correctly identify any injury before final diagnosis of sexual abuse is made.

Table 3: Changes of anatomy of external genital according to age

Pre-pubescent	Flat labia majora and thin labia minora as compared to adult The clitoris is hidden by the labia majora The labia minora extend only part way down from the anterior commissure and do not reach the midpoint posteriorly The hymenal orifice edge is usually regular, smooth and translucent and sensitive to touch Mucous membrane of the vagina are thin, pink and atrophic
Near pubescent or early childhood	External genitalia begin to show signs of estrogen The mons pubis thickens Labia majora fills out, the labia minora become more rounded and extend towards the posterior fourchette Hymen thickens and the opening increase in size Vagina elongates and mucosa thickens
Post-pubescent	Labia minora meets at posterior fourchette posteriorly Mons pubis covered by pubic hair Hymen thickens, develop folds and has increased elasticity and decreased pain sensitivity Mucous production begins Vaginal lengthens 10 cm and mucosa is thick and moist

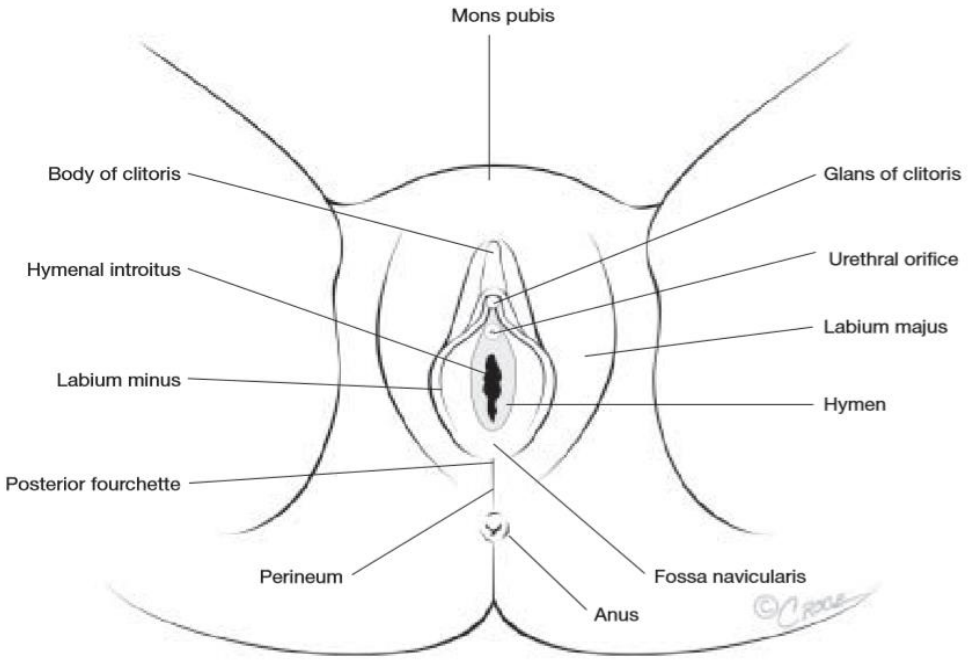

Figure 1: Normal anatomy of female external genitalia.

Types of hymen also varies according to age. Examples are:

i) Imperforate: no hymenal opening

ii) Cresentic: posterior rim of hymen with attachement at approximately 11 and 1 o'clock positions (half moon shape)

iii) Annular: tissue that surrounds 360^{o} (circular shape)

iv) Sleeve-like: an annular shape but with a vertically displaced orrifice

v) Septate: 2 or 3 large openings in the hymenal membrane

vi) Cribiform: small multiple openings in the hymenal membrane.

vii) Fimbriated: redundant tissue that folds over itself similar to ribbon around opening.

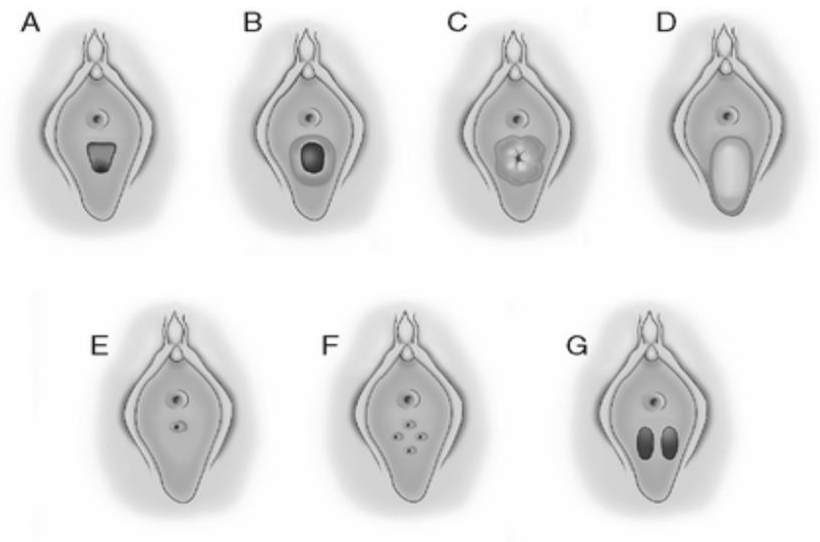

Figure 2: Types of hymen commonly seen in pre-pubertal girls

Source: Netter FH. Atlas of Human Anatomy, 5th Edition.

A: Posterior crescentic B: Annular hymen

C: Fimbriated hymen D: Imperforated hymen

E: Microperforate hymen F: Cribiform hymen

G: Septate hymen

The best time for genital examination is within 24-48 hours, due to the rapid healing of tissues at this area. Forensic examination has 2 main objectives which are to examine and provide treatment for the patients and the other objective is to collect evidence. Over the years, with advancing technologies and medical facilities, the examination of rape victims has evolved from visual examination to the use of colposcopy and staining techniques. The additional benefits of using colposcopy is the magnification of the injuries which might be missed during visual inspection and photographic capability.

To increase the sensitivity of detecting genital injury, staining techniques had been added to the colposcopic examination. Examples of staining agents used are Gention violet, Lugol's iodine, toluidine blue, fluorescein and combination of these agents. In United States of America, all rape victims will be examined by forensic specialists, and colposcopic examination has become a standard.

Genital injury prevalence is defined as the proportion of females with an occurrence of any anogenital injury following sexual assault. It varies, according to the techniques used. Genital injury frequency is defined as the number of genital injury found during genital examination.

Rachel B Baker et al (2008) conducted a retrospective review of 243 patients with sexual assault, aged 14-29 years old, presented in June 2003-Dec 2005. In this study, patients were divided into 2 groups: adolescents (14-21 years old) and young adults (22-29 years old). Overall genital injury prevalence reported was 62.8%. Adolescent group had 65.7% genital injury prevalence whilst the prevalence in the young adult group was 58.5%. Adolescents sustained more genital injury frequency as compared to young adults. Overall, vagina and hymen were the commonest site of genital injury (25.15%), followed by labia minor in adolescents (15.7%) and posterior fourchette in young adults (18.1%).

Sachs and Chu et al (2002) reported a prevalence of 81% in 209 sexual victims, and another report by Jones, Rossman et a (2003) documented similar prevalence rate of 83% in a study conducted among 209 rape survivors.

Grossing et al (2003) looked into sexual assaults and found most common locations for genital injury in female teenagers are posterior fourchette, labia minora, hymen and fossa navicularis. Examinations of 161 patients revealed 20% had vulvo vaginal injuries, 11% had hymenal injuries, and 7% had anal injuries.

Jones et al (2003) found out 78% of the victims had one of the four locations mentioned above, whereas adult women suffered less injury to hymen and greater injury to the peri anal area.

A recent study by Lincoln C et al (2013) demonstrated a statistically significant difference in genital injury prevalence in women with non-consented as compared to consented vaginal penetration. Women with non-consented vaginal penetration were 19.5 times more likely to sustain at least than those penetrated consensually (OR 19.53, CI (6.03, 63.24). Those with finger penetration had 4.2 times higher risk to have more than one genital injury. Abrasions and bruises were seen exclusively in the non-consented group.

Swabs will be taken to look for sperms indicating vaginal penetration. Low sperm-semen positivity most of the times are due to the delayed presenting for examination, vaginal douching, bathe after the sexual assault and the use of condoms. Thus, another approach has been introduced; looking at the presence of Y chromosome in the vaginal swabs/ specimen.

Silbea et al (2002) introduced the utility and reliability of PCR amplification using Y chromosomal STR polymorphisms in specimens from sexual assault survivors.

The Y chromosome was detected in 28.8% of swabs in sperm negative specimen, and even in patients who presented more than 48 hours of assault, the Y-STR is still present in 30% of cases.

2.3 PREGNANCY AND EMERGENCY CONTRACEPTION

One of the complications that may arise following sexual abuse is unwanted pregnancy. Few factors have been identified associated with increasing trend of teenage pregnancies in South East Asia. These include socio economic status, educational level, cultural factors, and family structure (Archaya et al, 2014). Teenage pregnancies were encountered in 52% of those with lower socio economic status (Shresta S, 2002). Low educational level has also been identified to be one of the important factors.

Teenage pregnancies are associated with lots of obstetric and perinatal complications. Obstetric complications include increase risk of miscarriage, anaemia, pregnancy induced hypertension, preterm deliveries and etc. Examples of perinatal complications are still birth, low birth weight, complications of preterm, and birth asphyxia (Goonewardena 2005, Ganatra 2002, Sharma A 2001).

Emergency contraception is an option and treatment prescribed for patients presented within 72 hours of sexual abuse with intention to prevent unwanted pregnancies. There are a few options available such as oral contraceptive pills, progesterone only pills, intrauterine device, and anti-progestins.

Prevention of pregnancy is thought to be due to delayed ovulation (Trussell J 2007, Gemzell 2010). The commonly prescribed emergency contraception method for children and adolescents are combined contraceptive pills and progestins. Levonogestrel (LNG) 1.5mg taken within 120 hours of unprotected sexual intercourse is the most widely used method, and prevent pregnancy through an effect on follicular development, resulting in delayed or prevention of ovulation. Failure rate of Levonogestrel is 2-3% (Glasier et al 2010).

Yuzpe regime((200mcg ethinyl oestradiol + 1mg levonogestrel) is associated with more side effects (Cheng L 2012), it is rarely recommended as emergency contraception as compared to Levonogestrel 1.5mg alone. However, being readily accessible, some centres still prefer combination of these hormones as one the method of emergency contraception.

2.4 INFECTIVE DISEASES FOLLOWING RAPE

2.4.1 Sexually Transmitted Illness

Latest findings suggest that young people aged 15–24 years acquire half of all new STIs (Satterwhite CL, 2013) and that 1 in 4 sexually active adolescent females have an STI, such as chlamydia or human papillomavirus (HPV) (Forhan SE, 2009). Adolescents who are sexually active, aged 15–19 years and young adults aged 20–24 years are at higher risk of acquiring STDs due to few factors such as behavioral, biological, and cultural reasons.

Examples of STIs include primary and secondary syphilis, chlamydia, gonorrhea and Herpes Simplex Virus (HSV) infection. Investigations for STI for children should only be carried out in symptomatic child (vaginal discharge, pruritus or pain), the assailant tested positive for

STI, high prevalence of STI in the community (Finkel MA 2002). In pre pubertal children, the swabs should be taken from the vaginal orifice. Cervical specimens should only be done in adolescents (if required). Terrapong et al (2009) reviewed 377 rape victims and found 2.9% of sexual transmitted disease among the rape victims during the first presentation, and 3.0% during the 2nd week of follow up.

Table 4: WHO recommended STI treatment regimens for children and adolescents.

STI	MEDICATION	ADMINISTRATION ROUTE AND DOSAGE
Gonorrhoea	Ceftriaxone or Cefixime	125mg IM in a single dose 400mg orally in a single dose or for children under 12 years , 8mg/kg body weight orally in a single dose
Chlamydia	Doxycycline or Azithromycin	100mg orally twice a day for 7 days if body weight > 45kg , or 2.2 mg /kg body weight orally twice a day for 7 days if body weight < 45kg 1gm orally in a single dose
Trichomonas and bacterial vaginosis	Metronidazole	2g orally in a single dose or 1 g orally every 12 hours for 1 day
Syphilis	Benzathine penicillin G or Tetracycline	2.4 million IU IM in a single dose 500mg orally twice a day for 14 days

2.4.2 Human Immunodeficiency Virus (HIV)

Another serious and debilitating health consequences following rape. In general, the incidence of HIV after isolated sexual contact with an HIV positive person is estimated to be approximately 1 to 2 cases per 1000 after vaginal penetration and 1 to 3 cases per 100 anal penetration. In countries such as Republic of Congo, Sudan, Somalia, Sierra Leone where mass rape have been reported, the incidence of HIV was documented as 5 infections per 100,000 females per year. Under extreme condition, 10,000 women and girls could be infected per year in Republic of Congo and 20,000 women and girls in Uganda. Mass rape would increase the incidence of HIV by 7%.

Even though the CDC does not have any guidelines for HIV prophylaxis in cases of sexual assault when the HIV status of the assailant is unknown, the decisions should be made individually, taking into account the estimated risk of infection in the perpetrator, the nature of assault, and the preference of the patient. Many local and international guidelines recommended the usage of post exposure HIV prophylaxis (PEP) in patients with sexual assault in countries with high prevalence of HIV. It has been proven to be effective, however to maintain grid adherence to PEP is still challenging.

2.5 PSYCHOLOGICAL IMPACT

The commonest psychological impact following rapes are post-traumatic stress disorder (PTSD), substance abuse, mood disturbance, eating and sexual disorders. Acute Stress Disorders (ASD) as compared to Post Traumatic Stress Disorder (PTSD) have similar presentation and criteria of diagnosis, but only applicable during the first month following the event (Richard A. Bryant 2012). Subsequently, if the symptoms persist, the diagnosis is PTSD. ASD has been advocated as one of the predictor for PTSD.

Linda O et al (2002) in her study on 899 women who were sexually abused, concluded that 211 survivors were diagnosed with major psychiatric disorders: 26% having mood disorders, 14% had thought disorders, and another 14% involved in substance abuse. Few factors contributed to these statistics were the nature of sexual assault such as those convicted by strangers ($p<0.001$), occurred outdoors ($p<0.01$), involving 2 or more assailants ($p=0.02$), assaulted with weapons ($p=0.04$), anal contact ($p=0.03$) and body trauma ($p=0.01$).

D.R. Ackerman et al (2006) performed a study on 812 patients with sexual assault who were given psychiatric follow up rape. In his study, there were few factors that contributed to the compliance follow up. Only 35.5% attended follow up as instructed while majority chose to decline it. Young age (OR 2.70), assault at home (OR 1.90), amnesia (OR 1.80), alcohol use (OR=1.55), genital trauma (OR = 1.55) and receipt of post examination medications (OR=1.87) were associated with greater follow up. Meanwhile, psychiatric diagnosis (OR=0.34), homelessness (OR=0.30), assault by intimate partner (OR=0.47) and cocaine use (OR=0.29) were associated with less follow up.

OBJECTIVES OF THE STUDY

General Objective

To analyze the demographic data of statutory rape from year 2005-2014.

Specific Objectives:

1. To study on the genital injury prevalence, frequency and anatomical locations encountered in statutory rape

2. To identify the physical and psychological impact of rape.
    - Physical impact such following rape such as
        - sexually transmitted disease and HIV
        - pregnancy
    - Psychological impact to the patients following sexual abuse
        - Mood or Stress disorders
        - Substance abuse
        - Eating disorders
        - Sexual disorders

METHODOLOGY

All adolescents with statutory rape aged 10-15 years old who were referred to HUSM from 2005-2014 were included in this study. A minimum age of 10 years old was selected, as this group of children were capable of giving reliable history. After a rape took place, the patient / guardian will lodge a police report. Patient is then brought to casualty by the police officer for further assessment and examination. The patient will be attended by casualty medical officer, and subsequently will be referred to the respective teams: Obstetrics and Gynaecology, Psychiatric and Paediatric department. The consent is taken from the parents/ guardian prior to examination. History taking, followed by physical examination, and all important findings will be documented and few investigations will be sent for further investigations. HUSM, as many other hospitals in Malaysia, follows standard protocol set by the Health Ministry of Malaysia for examination of rape victims.

General examination will be performed by the Casualty Medical Officer, and all the findings will be recorded and body samples will be taken for further assessment. The patient then will be attended by O&G medical officer, and further examination of the genitalia will be performed, looking into any evidence of vaginal penetration - mainly by visual inspection.

For the description of types of injury, the "T E A R S" classification (**T**ears, **E**cchymosis, **A**brasion, **R**edness, **S**welling) is used. For acute cases (within 72 hours of presentation), a few samples will be taken for any evidence of sexual transmitted disease, and vaginal swab sent to look for any evidence of sperm and vaginal infection.

Sexually transmitted Illness (STI) prophylaxis and treatment will be prescribed accordingly, following full assessment of the patients. Majority of the acute cases, will be given emergency contraception after detailed assessment. In HUSM, Nordette is the only contraceptive pills available, and emergency contraception will be given according to Yuzpe regime.

If pregnancy is diagnosed during the examination, further examination such as ultrasound will be done to determine the viability of the pregnancy, and subsequent follow up will be given accordingly.

All patients will also be referred to Psychiatric Medical Officer oncall, for psychological evaluation, and further follow up will be given to the patients. All victims aged 15 and less will be admitted and referred to social welfare department. Prior to discharge, patients will be given an appointment with the SCAN (Sexual, Child Abuse and Neglect) team for further follow up and treatment.

3.1 (a): **Inclusion criteria**:

All adolescents aged 10-15 years old with statutory rape presented to HUSM from 2005-2014

3.1 (b): **Exclusion criteria**:

Incomplete data/ records

Limitation: Limitation of this study includes any defect in documentation such as incomplete or any missing data.

3.2 Sample Size calculation:

a) *Prevalence of genital injury:*

As this is a prevalence study, the following simple formula (Daniel, 1999) was used:

$$n = \frac{Z^2 P (1-P)}{d^2}$$

n = sample size

Z = statistic for a level of confidence

P = expected prevalence or proportion

d = precision

Values used for this study: **Teerapong, Seree, et al. "Physical health consequences of sexual assault victims." Medical journal of the Medical Association of Thailand 92.7 (2009): 885**

Z= 1.96 (For the level of confidence of 95%, which is conventional, Z value is 1.96)

P= 43.4% (0.43)

d= 5% (0.05)

Thus, estimated sample size = 377

b) *Prevalence of pregnancy*

Values used for this study: **Teerapong, Seree, et al. "Physical health consequences of sexual assault victims."** ***Medical journal of the Medical Association of Thailand*** **92.7 (2009): 885**

Z= 1.96 (For the level of confidence of 95%, which is conventional, Z value is 1.96)

P= 1.7% (0.017)

d= 5% (0.05)

Thus, estimated sample size = 25 patients

c) *Prevalence of STI*

Values used for this study**: Teerapong, Seree, et al. "Physical health consequences of sexual assault victims."** ***Medical journal of the Medical Association of Thailand*** **92.7 (2009): 885**

Z= 1.96 (For the level of confidence of 95%, which is conventional, Z value is 1.96)

P= 4.5% (0.045)

d= 5% (0.05)

Thus, estimated sample size = 66 patients

This is a retrospective study of 380 patients with sexual assault examined at HUSM since Jan 2005- Dec 2014. The cases were selected randomly (by selecting based on odd number on the name list which contains 616 cases of statutory rape, treated in HUSM from year 2005-2014), and the cases with incomplete documentation were excluded.

Patient's profile such as age, medical illness, and previous sexual exposure will be recorded. The assailant's profile e.g age, relationship with the patient, and number of assailant will be taken into account. Detailed history of the sexual assault including time, place, characteristics whether any resistance, or involvement of any weapon, and types of penetration were documented. Findings of physical examination; types and number of anogenital injury, and laboratory results were traced and written down. Psychiatric medical officer's review and documentation were looked into, and final diagnosis and treatment prescribed to the patients were noted.

All the information were retrieved from the case notes and data were entered in the SPSS, which subsequently been analyzed. For this descriptive analysis, the categorical data were analyzed using the chi-square tests. A probability value of <0 .05 was chosen to be the significant statistical level.