

Physical Health Consequences of Sexual Assault Victims

Seree Teerapong MD*, Pisake Lumbiganon MD, MS**,
Sompop Limpongsanurak MD, MPH***, Venus Udomprasertgul MS***

* Department of Obstetrics and Gynecology, Police General Hospital, Bangkok, Thailand

** Department of Obstetrics and Gynecology, Faculty of Medicine, Khon Kaen University, Khon Kaen, Thailand

*** Department of Obstetrics and Gynecology, Faculty of Medicine, Chulalongkorn University, Bangkok, Thailand

Objective: To describe health consequences of sexual assault victims attending Police General Hospital, Thailand

Design: Descriptive study with prospective data collection

Setting: Police General Hospital, Bangkok, Thailand

Subjects: Sexual assault victims attending Police General Hospital between October 1, 2004 and September 30, 2005 were recruited. All subjects were actual sexual assault cases and came to Police General Hospital within 14 days.

Material and Method: Each recruited victim was interviewed, physically and forensic medically examined, and screened for sexual transmitted infections (STIs) at first visit, two-week follow-up visit, and three-month follow-up visits. Data were analyzed using descriptive statistics, including 95% confidence intervals.

Results: There were 377 victims. One of them was male and excluded from the analysis. Most victims were single, 68.8% aged 10-19 years. Non-genital injuries were reported in 32.4% (95% CI, 27.7%, 37.5%) of the victims and 91.0% of these injuries were mild. Only one patient was admitted in the hospital. Genital injuries were found in 43.4% (95% CI, 38.4%, 48.4%) of the victims. At the first visit, 2.9% (95% CI, 0.9%, 4.9%) and 1.1% (95% CI, -0.1%, 2.3%) were infected by *N. gonorrhoea* and *Trichomonas vaginalis* respectively. At the 2-week follow-up visit, 3.0% (95% CI, 0.7%, 5.3%) and 1.5% (95% CI, -0.2%, 3.2%) were infected by *N. gonorrhoea* and *Trichomonas vaginalis* respectively. The incidence of pregnancy resulted from sexual assault was 1.7% (95% CI, 0.1%, 3.3%).

Conclusion: Most sexual assault victims were teenagers. All physical injuries were of mild to moderate degree. Prevalence of STIs and incidence of pregnancy after sexual assault were very low.

Keywords: Crime victims, Genitalia, female, Pregnancy, Rape, Sexually transmitted diseases, Wounds and injuries

J Med Assoc Thai 2009; 92 (7): 885-90

Full text. e-Journal: <http://www.mat.or.th/journal>

Sexual assault is a violent crime that encompasses all types of forced or inappropriate sexual contact, either with or without penetration of the mouth, vagina, or anus. Rape is defined as 'forced sexual intercourse' that occurs because of physical force or psychological coercion. Rape involves vaginal, anal, or oral penetration by the offender. "Rape" definition also includes incidents in which penetration is with a foreign object, such as a bottle, or situations

in which the victim is unable to give consent because of intoxication or developmental disability^(1,2). Globally, at least 20% of women had been physically or sexually assaulted in their lifetime^(3,4). In Thailand, it was estimated that only 5% of the actual sexual assault incidents were reported⁽⁵⁾. The statistics and information about sexual assault are usually not collected and filed systematically unless it is to be used for specific research purposes^(5,6). Socioeconomic changes have played an important role in the Thai society and in a family unit. Parents have to work outside and spend less time with children relationships among family members have become more fragile. The family

Correspondence to: Teerapong S, Department of Obstetrics and Gynecology, Police General Hospital, Bangkok 10330, Thailand. Phone: 08-1318-8320, Fax: 0-2321-2937. E-mail: drseri@gmail.com, drseri2003@yahoo.com

well-being continues to be worrisome due to poverty caused by economic crisis and widespread uses of narcotics and drugs among the age groups of 15-24 years, resulting in deteriorating family bond, domestic violence, and increased sexual assault problems among the young.

Police General Hospital (PGH) is a 750-bed hospital, located in the central part of Bangkok and is the referral center of sexual assault victims. There are about 100 sexual assault cases attending PGH per month. There were no previous well-conducted reports on sexual assault in Thailand. The authors therefore conducted this descriptive study by using prospective data collection to assess health consequences of sexual assault victims attending services at Police General Hospital (PGH), Bangkok, Thailand.

Material and Method

Victims recruited in the present study were rape cases attending the PGH in Bangkok, Thailand between October 1, 2004 and September 30, 2005 who met the following criteria.

Inclusion criteria

1. Victims who were forced to have oral, vaginal or anal penetration by any part of the perpetrator's body or by an object, under conditions in which physical or psychological coercion was used or the victim was incapacitated and therefore did not consent to such an act. Rape cases also included all child sexual assault victims aged < 15 years whether they consented to have sexual act with perpetrators or not (under Thai laws).

2. Gave written informed consent for participating in this study.

Exclusion criteria

1. Victims who came to PGH more than 14 days after their sexual assault.

2. Victims who admitted that they were not raped, but had voluntary sexual intercourse.

In this project, at their first visit to PGH, the victims who came during office hours were taken to the emergency room for obtaining history and physical examination. Thereafter, they had to see general practitioners or gynecologists for a pelvic examination and had specimens collected for detecting *Neisseria gonorrhoea* (GC) by Gram stain and *Trichomonas vaginalis* (TV) by wet smear. Specimens from the vagina were also collected for detecting sperm and acid phosphatase. After completing physical examination, victims were escorted to the Health Promotion Center

for counseling, taking prophylactic treatment for HIV infection (if they had come to the PGH within 72 hours after the assault), and had blood taken for anti HIV, and Venereal Disease Research Laboratory (VDRL). Victims coming outside the office hours, they immediately had history of the rape taken, physical examination performed, and specimens collected. Victims received antibiotic treatment when they had signs and symptoms of infections, no antibiotic prophylaxis were given except for HIV as mentioned above. For preventing pregnancy, the authors followed the guideline of PGH. If victims were raped during the ovulation period and came to PGH within 72 hours, they all would be given emergency contraception. They were then scheduled for further appointment with the obstetric department and the Health Promotion Center for more physical examinations.

The counselors at the Health Promotion Center gave the victims emotional support and explained the objectives of the present study. Victims who agreed to participate would sign the consent forms. The counselors then interviewed the victims using the pre-tested data collection forms. Some victims went to the social worker department to get financial or other help. All victims were scheduled for another pelvic examination 2 weeks after their assault and for anti-HIV and VDRL tests 3 months later. The objectives of the two-week follow up visit were to check the victims for leucorrhoea, pelvic inflammatory diseases, and performed laboratory test for *Neisseria gonorrhoea* (GC) by Gram stain and *Trichomonas vaginalis* (TV) by wet smear. The counselors interviewed the victims again and recorded the information obtained at this follow-up visit. For victims who came 12 days or more after their sexual assault, they were scheduled to come back one week later for reexamination and for urine pregnancy test if they missed their period.

Data collection

The following data were collected: 1) demographic characteristics, behaviors and personalities of the victims; 2) demographic characteristics of the offenders; 3) data about the offender's relationship to the victim; offender's method of approach and control. 4) victim data on non-genital and genital trauma, laboratory tests and treatments provided during the first and the follow-up visits.

Classification of trauma

The severity of trauma was classified as, A. Mild: traumatic wounds and injured body expected to

heal well within 7 days, B. Moderate: traumatic wounds and injured body parts expected to heal well between 8 and 20 days, C. Severe: traumatic wounds and injured body parts expected to heal well over 20 days.

Statistical analysis

Statistical analysis was done using descriptive statistics including their 95% confidence intervals using computer statistical program SPSS/PC version 11.5.

This study was approved by the Ethics Committee of Faculty of Medicine, Chulalongkorn University, and the Ethics Committee of PGH.

Results

Between October 1, 2004 and September 30, 2005, there were 1,251 sexual assault victims

reported to PGH. Among the 1,242 victims who came to emergency room services, 1,089 victims came for follow-up visits, the other 153 victims were lost to follow-up. Nine hundred five of these 1,089 victims were rape cases. Of these 905 rape cases, 751 victims were eligible based on the inclusion and exclusion criteria. Among the 751 eligible victims, 377 victims agreed to participate. One male victim was excluded leaving 376 victims available for this study (Fig. 1).

Table 1 shows characteristics of the victims. Of the 376 victims, 85.9% were single and almost all lived in Bangkok. The majority of victims were in the 15-19 (37.2%), and 10-14 (31.6%) age groups. Almost half of the victims (45.4%) finished secondary school while about a quarter finished primary school (27.2%). Half of the victims were students (51.1%), 28.5% were employees, and 11.6% were unemployed. Most

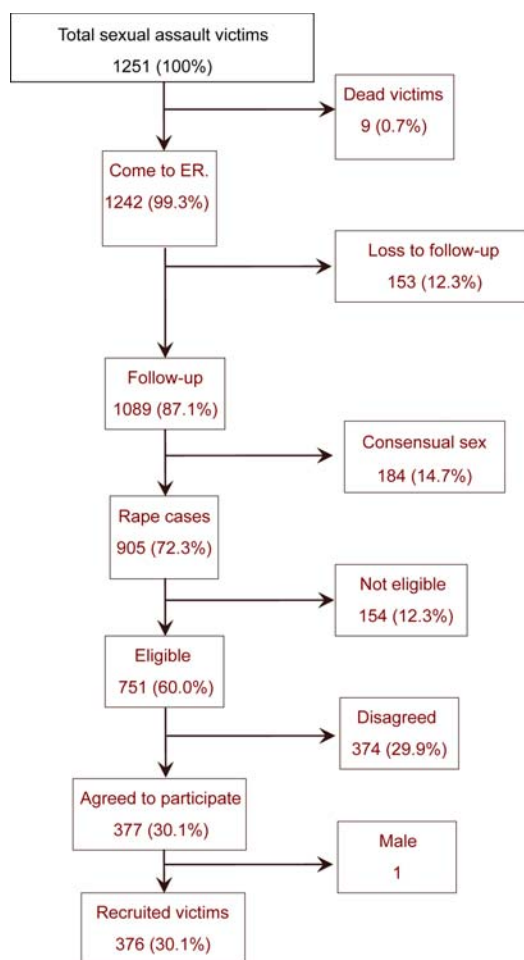


Fig. 1

Table 1. Characteristics of the victims

Characteristics	Number	Percentage
Age [n = 376]		
1-9 yrs	22	5.9
10-14 yrs	119	31.6
15-19 yrs	140	37.2
20-29 yrs	65	17.3
30-60 yrs	30	8.0
Marital status [n = 376]		
Single	323	85.9
Married	23	6.1
Dating/Cohabitated	18	4.8
Divorced/separated/Widow	12	3.2
Education by highest level completed [n = 368]		
Primary school (1-6 years)	100	27.2
Secondary school (7-9 years)	167	45.4
High school (10-12 years)	66	17.9
College/University (13 years and over)	35	9.5
Occupations [n = 372]		
Childhood (under 8 years)	17	4.5
Student	190	51.1
Employees	122	32.8
Unemployed	43	11.6
Living arrangements [n = 349]		
Alone	29	8.3
With parents	193	55.3
With relatives	76	21.8
With spouse	32	9.2
With others, partner, friend	19	5.4
Interval between event and attendance at PGH [n = 376]		
Within 72 hours	291	77.4
Between 72 hours and 7 days	55	14.6
Between 7 days and 14 days	30	8.0

victims lived with their parents or relatives, wore modest clothes, had no drug addiction or disabilities, and did not participate in nightlife. About three quarter (77.4%) came to the PGH within 72 hours of their assault. Most of the rapes had occurred in the perpetrator's residences (41.7%) and the victim's residences (21.8%).

Details of injuries of the victims are shown in Table 2. One hundred and forty three victims (38.0%, 95% CI, 33.1%, 42.9%) did not have physical injuries. Among the 233 victims (62.0%, 95% CI, 57.1%, 66.9%) who had physical injuries, 70 victims (18.6%, 95% CI, 14.7%, 22.5%) had non-genital injury only, 111 victims (29.5%, 95% CI, 24.9%, 34.1%) had genital injury only, and 52 victims (13.9%, 95% CI, 10.3%, 17.3%) had both non-genital and genital injuries. Among the 122 victims who had non-genital injuries, 111 victims had mild injury, while 11 victims had moderate injury. Injured area of the highest order was body part, both

in mild type (14.6%) and moderate type (2.1%). The other areas orderly injured in mild type and moderate type were neck (11.2%, 1.1%), upper extremities (11.7%, 0.5%), lower extremities (13.6%, 0.3%), face (7.7%, 1.1%), and head (4.8%, 0.5%). All 163 victims who had genital injuries had mild injuries. The area of genital organs injured were hymen 27.8%, labia minor 19%, labia major 9%, vagina 6.5%, and anal area 2.1%. The anal area of male victims was also minimally injured. All but one victim required only outpatient treatment. The only one victim was hospitalized for 3 days. This was a 23-year-old victim, who was raped and attacked by a stranger around 1 AM. She was moderately injured on her face, head, neck, and body. She was admitted for observation for other possible severe injuries, such as intracranial bleeding, and psychological support.

At the first visit, eight victims (2.9%, 95% CI, 0.9%, 4.9%) had N gonorrhoea infection and three victims (1.1%, 95% CI, -0.1%, 2.3%) had Trichomonas Vaginalis infection. All blood tests for VDRL at the initial visit were non-reactive. There was one victim with a positive anti-HIV test at her initial visit. Two hundred and fifty eight victims (68.9%) came to the two-week follow-up visit. Six victims were tested positive with Neisseria gonorrhoea (3.0%, 95% CI, 0.7%, 5.3%), three victims had Trichomonas Vaginalis (1.5%, 95% CI, -0.2%, 3.2%), and four victims had bacterial vaginosis (1.6%, 95% CI, 0.1%, 3.1%). There were no victims with pelvic inflammatory diseases. There were 160 victims coming for the follow-up visit at 3 months, all had negative tests for both VDRL and anti-HIV.

Five (1.4%) victims were found to be pregnant at their first visit. All five cases requested termination of pregnancy, because their pregnancies were so early and they were worried about HIV infection. Moreover, they felt disgusted that their pregnancy was dirtied by rape. At the two week follow-up visit, four victims out of 237 victims (1.7%, 95% CI, 0.1%, 3.3%) were pregnant. Termination of pregnancy was performed for all nine pregnant victims.

Discussion

About 62% of sexual assault victims had physical injuries, 19% had non-genital injury alone, 30% had genital injury alone, and 14% had both. Most of the injuries were mild to moderate degree. STI rates were very low, 3% for Neisseria gonorrhoea and 1.5% for Trichomonas vaginalis. Pregnancy rate was also very low (<2%).

Geist RF found non-genital injuries in 40 per cent of the victims but only four percent were serious,

Table 2. Type of injuries

Type of injuries	Number	Percentage
No injury [n = 376]	143	38.0
Both non-genital and genital injury [n = 376]	52	13.8
Non-genital injury only [n = 376]	70	18.6
Non-genital injured area		
Face [n = 376]	33	8.8
Mild	29	7.7
Moderate	4	1.1
Neck [n = 376]	46	12.3
Mild	42	11.2
Moderate	4	1.1
Head [n = 376]	20	5.3
Mild	18	4.8
Moderate	2	0.5
Body [n = 376]	63	16.7
Mild	55	14.6
Moderate	8	2.1
Upper extremities [n = 375]	46	12.2
Mild	44	11.7
Moderate	2	0.5
Lower extremities [n = 376]	52	13.9
Mild	51	13.6
Moderate	1	0.3
Genital injury only [n = 377]	111	29.5
Genital injured area		
Labia majora [n = 368]	33	9.0
Labia minora [n = 369]	70	19.0
Vagina [n = 370]	24	6.5
Hymen (new tears) [n = 370]	103	27.8
Anus [n = 330]	7	2.1

and less than one per cent required hospitalization. Genital injuries were found in about 50 percent of cases, but only one percent needed repair⁽⁷⁾. Riggs N found a higher incidence of both non-genital traumas (67%) and genital traumas (53%). Nevertheless, 20% of the victims did not have physical and genital injury⁽⁸⁾. Many studies reported similar findings about mild injuries of the victims, but sexual assault by a stranger was more associated with non-genital injuries and more likely to involve weapons or physical coercion⁽⁸⁻¹⁰⁾.

Reports on the risk of a sexually transmitted infection (STI) after sexual assault varied from 0% to 26.3% and the risk for HIV varied from 0.1% to 3%⁽¹⁰⁻¹²⁾. Although there are recommendations regarding STI prophylaxis for sexual assault victims, it is generally left to the discretion of the attending physicians to determine if a patient warrants HIV infection post-exposure prophylaxis (PEP). However, most pediatric infectious disease physicians, including at PGH initiated HIV PEP for rape victims in the absence of institutional policies⁽¹³⁾. From the results of the present study, the risk of STIs after rape was very low, immediate antibiotic prophylaxis may be not necessary if the victims could be followed-up at two weeks after the assault.

In the United States, the national rape-related pregnancy rate was 5.0% among victims of reproductive age (aged 12 to 45)⁽¹⁴⁾. A study conducted in Bangladesh in 2003 reported pregnancy rate of 2%⁽⁹⁾. The present report also revealed a similar low pregnancy rate.

The authors collected the data prospectively to ensure validity and completeness of the information. The authors calculated the sample size and managed to reach the target number of subjects to ensure the precision of the magnitude of the health consequences.

One important limitation of the present study is the methods used for detecting STI. WHO recommends that rape victims should be screened for gonorrhea and Chlamydia by cultures⁽¹⁰⁾. However, because of the resource constraint at PGH, the authors used only wet smear and Gram stain for detecting STI. This would underestimate the prevalence of STI. Because infection and pregnancy rates after sexual assault are relatively uncommon, the present study did not have enough subjects to give precise rates. One obvious limitation of the present study was the high rate of decline to participate. The authors could recruit only 50% of the total eligible subjects. However, the information related to the declined victims in terms of age, education, place of residence, occupation,

relationship to the offender, and the number of offenders did not differ from those who agreed to participate.

The present study can address only physical health consequences after sexual assault, which seems to be not serious. There is still a great lack of information about mental health consequences especially among child or adolescent victims. Future studies should aim at addressing this problem.

Acknowledgements

This research project was supported by a grant from the Thailand Research Fund/ Senior Research Scholar. The authors wish to thank Pol Maj Gen. *Jongjate Aojanepong* MD for his continuous support in conducting this project.

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ผลกระทบทางสุขภาพของผู้ถูกล่วงละเมิดทางเพศ

เสรี อธิพงษ์, ภิเศก ลุมพิกานนท์, สมภพ ลิ้มพงศานุรักษ์, วินัส อุดมประเสริฐกุล

วัตถุประสงค์: เพื่อศึกษาการบาดเจ็บทางร่างกายและอวัยวะเพศ การติดเชื้อทางเพศสัมพันธ์และการตั้งครรภ์ในผู้ถูกล่วงละเมิดทางเพศที่มารับบริการจากโรงพยาบาลตำรวจ

วิธีการศึกษา: การวิจัยเชิงพรรณนา แบบเก็บตัวอย่างไปข้างหน้า

สถานที่ทำการศึกษา: โรงพยาบาลตำรวจ

กลุ่มตัวอย่าง: ผู้ถูกล่วงละเมิดทางเพศที่มารับบริการจากโรงพยาบาลตำรวจ ตั้งแต่ 1 ตุลาคม พ.ศ. 2547 ถึง 30 กันยายน พ.ศ. 2548 ผู้ถูกล่วงละเมิดทางเพศเป็นกรณีที่เกิดขึ้นจริงและมาตรวจภายใน 14 วันนับจากวันที่เกิดเหตุ

วัตถุประสงค์และวิธีการ: ทำการเก็บข้อมูลต่าง ๆ ของกลุ่มตัวอย่าง โดยการสัมภาษณ์ ตรวจร่างกายทั่วไป ตรวจร่างกายทางนิติเวช และตรวจทางห้องปฏิบัติการเกี่ยวกับ โรคติดต่อทางเพศสัมพันธ์ นอกจากนี้ ยังนัดมาตรวจซ้ำอีกใน 2 สัปดาห์ และ 3 เดือนนับจากวันที่ถูกล่วงละเมิดทางเพศ นำผลที่ได้มาสรุปรายงานโดยใช้สถิติเชิงพรรณนา

ผลการศึกษา: กลุ่มตัวอย่างของการศึกษานี้มี 377 ราย โดยในรายที่เป็นผู้ชาย 1 ราย ไม่ได้ถูกนำมาวิเคราะห์ร่วมกับผู้ถูกล่วงละเมิดทางเพศส่วนใหญ่เป็นโสด ร้อยละ 68.8 มีอายุ 10-19 ปี พบบาดแผลจากการถูกทำร้ายทางร่างกาย ร้อยละ 32.4 (95% CI, 27.7%, 37.5%) และร้อยละ 91.0 เป็นการบาดเจ็บเล็กน้อย มี 1 ราย ที่ได้รับตัวไว้รักษาในโรงพยาบาล พบการบาดเจ็บที่อวัยวะเพศ ร้อยละ 43.4 (95% CI, 38.4%, 48.4%) จากการติดตาม พบการติดเชื้อหนองใน ร้อยละ 3.0 (95% CI, 0.7%, 5.3%) พยาธิในช่องคลอดร้อยละ 1.5 (95% CI, -0.2%, 3.2%) ตั้งครรภ์ร้อยละ 1.7% (95% CI, 0.1%, 3.3%)

สรุป: ผู้ถูกล่วงละเมิดทางเพศส่วนใหญ่เป็นวัยรุ่น การบาดเจ็บทางร่างกายทั้งหมดเป็นเพียงขั้นเล็กน้อยและปานกลาง ความชุกของการติดเชื้อทางเพศสัมพันธ์และการตั้งครรภ์ค่อนข้างต่ำ