

## CHAPTER III

### RESEARCH DESIGN AND METHODOLOGY



#### 3.1 RESEARCH QUESTIONS

##### 3.1.1 PRIMARY RESEARCH QUESTION

What are health consequences of sexual assault victims attending Police General Hospital?

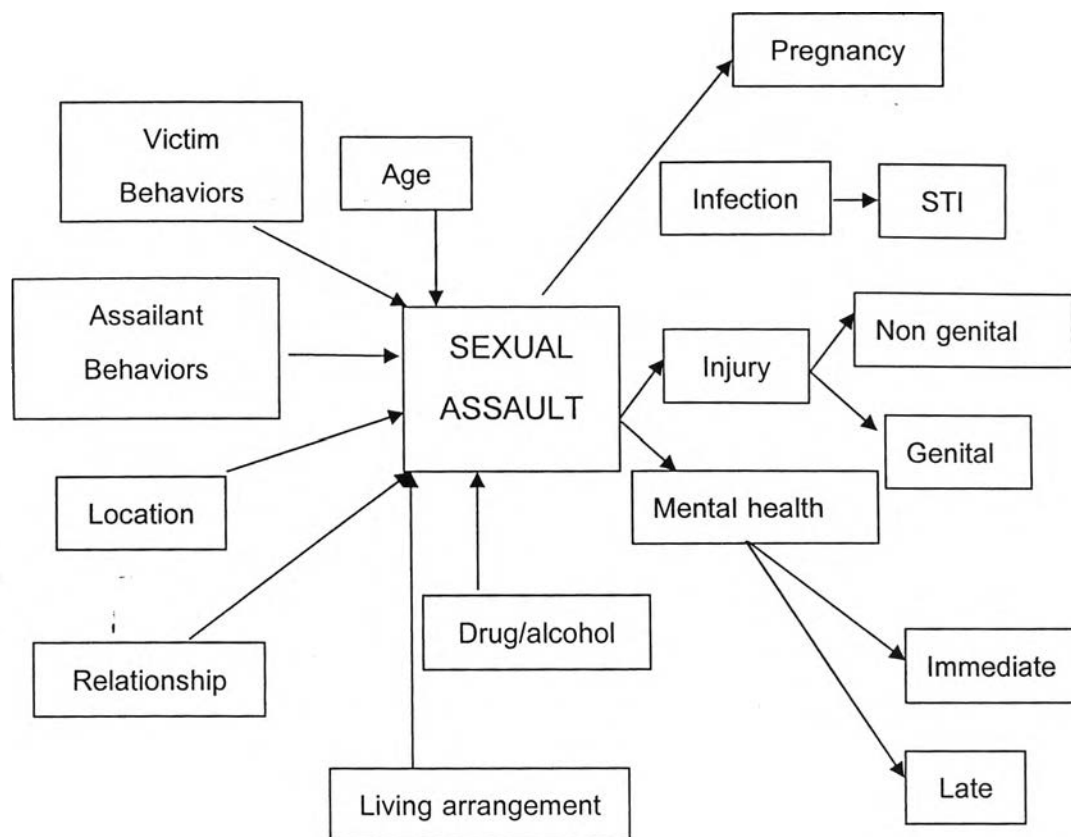
##### 3.1.2 SECONDARY RESEARCH QUESTION

What are the characteristics of sexual assault victims attending Police General Hospital?

#### RESEACH OBJECTIVES

1. To assess physical and genital injuries in sexual assault victims.
2. To assess sexual transmitted infections in sexual assault victims.
3. To assess characteristics of sexual assault

Figure 1 Conceptual framework



Key words: Health consequences, sexual assault, rape, victim

#### OPERATIONAL DEFINITIONS

- Sexual assault is a comprehensive term that includes multiple types of forced or inappropriate sexual activity. Sexual assault includes situations in which there is sexual contact with or without penetration that occurs because of physical force or psychological coercion. This includes touching of a person's "sexual or intimate parts or the intentional touching of the clothing covering those intimate parts" [1,4,37].

- 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. This 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]. Rape can be divided into

1. **Real rape** is defined as, " any sexual act, attempt, to obtain a sexual act, unwanted sexual comments or advances, or act to traffic women's sexuality, using coercion, threats of harm, or physical force, by any person regardless of relationship to the victims, in any setting, including but not limited to home and work [1,2,4,14]. " The criteria of real rape are the rapes that occur in these situations:

a) raped by a stranger, multiple assailants, a member of family or extended family

b) raped by blitz method or under control of offenders by using drug, alcohol, weapons, binding, threaten of harm

c) the victims resist by verbal or physical,... if not resist but they can't help themselves in case of mental defect, handicapped, age older than 60 years or age under 15 years whatever they consent or not.

d) young child victims (1 - 10 years) with very suggestive sexual assault histories especially the details of offender sexual acts from the victims and additional histories from their parents, relatives, including other evidences, such as semen on their clothing, the confessions of offenders, with or without positive physical findings on external genitalia of the victims.

2. **False rape** defined as "a ...deliberate lie by the alleged victim accusing a man of a rape that did not occur. It may also be a fantasy report that the female believes is true" [2]. The criteria of false rape are the rapes that occur in these situations:

a) a victim recant the complaint by verbal written in the medical record

b) Investigation reveals allegation to be false

- Sexual assault victims in this study are the real cases who are sexually assaulted or raped by one perpetrator or more. It is very important that sexual assault victims are not the cases with false rape allegations, but they always include all child sexual assault victims (age <15 years) whatever they consent to have sexual act with perpetrators or not. Sexual assault victims were divided into 3 categories: Category1 is

defined as the victims attending PGH within time interval 72 hours after sexual assault. Category2 is defined as the victims attending PGH with time interval over 72 hours but less than 7 days after sexual assault. Category3 is defined as the victims attending PGH with time interval over 7 days after sexual assault.

- **Child:** a sexual assault victim or someone aged between 1 and 14, which are divided into young child victim aged 1 – 10 and older child victim aged 11 – 14.

- **Adolescent :** a sexual assault victim or someone aged between 15 and 19.

- **Health consequences** are defined as physical trauma, infection, and pregnancy of victims after sexual assault.

- **Physical injury:** a wound or damage to part of a victim's body caused by an offender's attack

- 1.1 Non – genital injury: wounds or physical damage recorded in the medical record of PGH, caused by an offender's attack during sexual assault to a victim's body , which can be divided into face, head, neck, body part, upper extremities, and lower extremities injury.

- 1.2 Genital injury: a wound or wounds caused by an offender's attack during sexual assault or rape to a victim's genital organs recorded in the medical record of PGH.

- **Severity of non-genital and genital injury:**

- a) Mild: traumatic wounds and body parts injured are expected to heal well within 7 days

- b) Moderate: traumatic wounds and body parts injured are expected to heal well between 8 and 20 days

- c) Severe: traumatic wounds and body parts injured are expected to heal well over 20 days.

- **Infection:** is defined as a sexually transmitted infection (STI) generally transmitted by a sexual contact during sexual assault or rape. STIs can be caused by bacteria, such as Neisseria gonorrhoeae, virus, such as HIV, protozoa, such as Trichomonas vaginalis; and treponemes such as treponema pallidum, which causes syphilis.

- Gonorrhea (GC) refers to the clinical syndromes caused by the Gram-negative intracellular diplococcus. In this study, it is identified only by Gram stain.

- Trichomonas vaginalis (TV) : Trichomoniasis, caused by the protozoan Trichomonas vaginalis, is a common cause of vaginitis in female victims. Vaginal discharge caused by T. vaginalis may be purulent and malodorous, and women may also complain of external dysuria, itching, genital irritation, or dyspareunia. In this study, it is identified only by wet smear.

- Syphilis: syphilis is caused by the spirochete treponema pallidum. The incubation period varies from 10 days to 3 months. Thus early syphilis is not frequently diagnosed at the initial patient evaluation after the sexual assault. In this study, it's diagnosed by blood check up for VDRL at first visit and 3 months later.

- Human immunodeficiency virus (HIV): a virus that causes AIDS(Acquired Immune Deficiency Syndrome). Antibodies can typically be detected in the blood 3-6 weeks after infection. In this study, HIV is diagnosed by seroconversion of HIV antibodies in blood check up from the initial visit and 3 months later.

- Bacterial vaginosis: bacterial vaginosis is the most common cause of vaginitis in women and is frequently found in women after sexual assault. In this study, it' diagnosed by clinically attendant malodorous discharge without Gonorrhea and Trichomonas vaginalis on pelvic examination at 2 week follow-up.

- Pelvic Inflammatory disease (PID) describes any combination of endometritis, salpingitis, and pelvic peritonitis with or without tubo-ovarian abscess, caused by sexual assault and diagnosed by pelvic examination at 2 week follow-up. The diagnosis of PID is based on a triad of symptoms and signs, including pelvic pain, cervical motion tenderness, adnexal tenderness, and the presence of fever [63].

- Pregnancy: is defined as a condition of a female victim being pregnant diagnosed by urine pregnancy test at first visit or 2 weeks after the assault (a follow-up). Being positive test at first visit, the pregnancy is resulted before rape. While being positive test at a 2 week follow-up, the pregnancy is resulted from rape.

### 3.2 RESEARCH DESIGN

Descriptive study (prospective data collection)

### 3.3 RESEARCH METHODOLOGY

#### POPULATION AND SAMPLING METHOD

TARGET POPULATION : sexual assault victims who came to PGH between 1 October 2004 and 30 September 2005.

#### 3.3.1 SAMPLE SIZE

The formula for sample size estimation in this study is the formula for population proportion of single group.

$$n = \frac{Z_{\alpha/2}^2 PQ}{d^2}$$

n = sample size in single group

d = acceptable error = 0.05

z = critical value, for 95% confidence level ( $\alpha = 0.05$ )

$\alpha$  = type I error probability = 0.05       $Z_{\alpha/2} = 1.96$

p = prevalence of genital trauma among sexual assaults = 0.32 [10]

q = 1 - p = 0.68

n = sample size in single group = 334

#### Inclusion criteria

1. Real rape cases (lack of consent for sexual contact with the assailant).
2. Attended Police General hospital between 1 Oct 2004 and 30 Sep 2005.
3. Gave written informed consent for participating in this study.

### Exclusion criteria

1. Victims who attended for medical examination at PGH over 14 days after the sexual assault.
2. Suspected false rape cases.

## 3.4 DATA COLLECTION

### 3.4.1 MANEUVER

#### 3.4.1.1 PREPARATORY PERIOD

a) After the proposal was approved by the Ethics Committee of Faculty of Medicine, Chulalongorn University, and the Ethics Committee of PGH. I brought the recommendation from both Ethics Committee to consult Director of PGH, Head of the Department of Outpatient Service, Head of the Department of Obstetrics & Gynecology, for preparation of places, tools and assistants.

b) Prepared assistants (nurses and medical officers) who took part in assisting the process of pre-test, interviewing the victims and collecting data. The assistants, who interviewed victims, had experience of psychological counseling or finished master's degree in Psychology. The interviews were done in a private room at the Health Promotion Centre. The information of every victim was kept secretly.

#### 3.4.1.2 STUDY AND DATA COLLECTION PERIOD

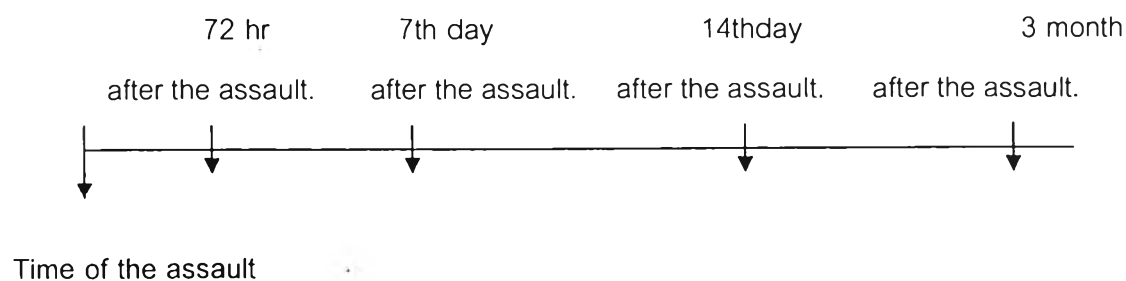
When the victims came to PGH at first visit, they were taken to the emergency room for history of the events and physical examination. Thereafter they had to see a gynecologist for pelvic examination and investigation for *Neisseria gonorrhoeae* (GC) and *Trichomonas vaginalis*(TV) by Gram stain and wet smear. Moreover, the specimens in vagina were also collected for checking sperms and acid phosphatase. Outside working hours, they were examined and collected specimens by medical practitioners at emergency room. After physical examination , they went to Health Promotion Center for counseling , taking prophylactic treatment for HIV infection (in case of having sexual

intercourse within 72 hours after the assault ), and blood checking for antiHIV, VDRL. The counselors gave the victims mental support and took other important information. Some victims went to social worker department to get financial or other helps. All victims were scheduled about 2 weeks after the assault for repetition of pelvic examination and 3 months later for blood check of antiHIV and VDRL. At 2 weeks follow up, the objectives were to check the victims over for luecorrhea, pelvic inflamatory disease, and labolatory test for Neisseria gonorrhoeae (GC) by Gram stain and Trihomonas vaginalis (TV) by wet smear. For the victims attending at first visit over 12<sup>th</sup> day after sexual assault, they were appointed to come back 1 week later for reexamination and urine pregnancy test in case of missing period.

The processes of data collection were

- a) Enrolled the victims who fulfilled the eligible criteria and signed the informed consent.
- b) Collected general information, comforted, counseled and scheduled the victims to follow up.
- c) Collected blood sample for antiHIV, VDRL: urine sample for pregnancy test at first and follow - up visit. .

Figure 2. Follow up Plan for interview, physical examination and laboratory test for victims in this study



All victims were classified by interviewing, observation, physical examination and data collection from case record form. (in the Appendix A)



### 3.5 DATA ANALYSIS

In this study, the victims' data were analyzed by computer statistical program SPSS/PC version 11.5 as Data Analysis Plan.

Table1. Data Analysis Plan

Outcomes	Variables	Scale	Statistics
1.Primary outcomes			
1.1 Injury	Non - genital injuries	nominal	%, 95%CI
	Genital injuries	nominal	%,95%CI
1.2 Infection		nominal	%,95%CI
	GC	nominal	%
	TV	nominal	%
	Syphilis	nominal	%
	HIV	nominal	%
	PID	nominal	%
1.3 Pregnancy		nominal	%,95%CI
2.Secondary outcomes			
2.1 Victim Characteristics	Age	interval	%,min,max, $\bar{X}$
	Education	interval	%,min,max, $\bar{X}$
	Living arrangement	nominal	%
	Occupation	nominal	%
	Victim behaviors/ personality - Often participate in the night life - Cloth dressing - Alcoholic - Drug addict - Mental retardation - Physical disability	nominal, ordinal	%

Table2. Data Analysis Plan (Continued)

Outcomes	Variables	Scale	Statistics
	Location of the assault	nominal	%
	Relationship to the offender	nominal	%
	Alcohol use	nominal	%
	Drug use	nominal	%
2.2 Offender Characteristics	Age	interval	%,min,max,X
	Education	nominal	%
	Number of the assailant	interval	%,min,max,X
	Alcohol use	nominal	%
	Drug use	nominal	%
	Weapon use	nominal	%
2.3 Sexual act			
	Sequence of contact and penetration	nominal	%,
	Insemination in vagina	nominal	%
	Condom use	nominal	%
	Oral sexual intercourse	nominal	%
	Anal sexual intercourse	nominal	%
	Foreign objects	nominal	%

### 3.6 ETHICAL CONSIDERATION

1. The research proposal was approved by the Ethical Committee of Faculty of Medicine ,Chulalongkorn University and PGH.

2. The details of this study were clearly described and answered when questions arose from the participants.

3. Every participant signed the informed consent and was completely free to withdraw from the study without any prejudice to her further treatment.

### 3.7 LIMITATIONS

1. Some victims or their relatives might not cooperate in this study.
2. Some victims could not answer the questions or give information.
3. There were no complete services and investigations for the sexual assault victims who came to PGH outside office hours or on official holidays. So some victims had to come again on the next official days and some victims could not come because of their personal reasons.
4. For the first 99 cases of this study, antibiotics prophylaxis was still prescribed for every victim because of routine practice in the protocol at PGH. Moreover, Gram stain and wet smear procedures were not done. After analysis of data collected, these problems were corrected. Though antibiotics prophylaxis was not routinely prescribed after the first 99 cases, but some physicians had prescribed some antibiotics for some victims, such as: rapes caused by multiple offenders, strangers, the offenders with suspected history of STIs or HIV infection...etc.
5. There are limitations in doing culture for microbiology in PGH, therefore routine culture was not performed.

### 3.8 OBSTACLES

1. Sexual assault is a sensitive issue that the research study must be carefully conducted because it does affect feeling of the victims and some victims did not want to talk about the events.
2. Some victims could not answer the inquiries because of physical injuries, and/or psychologic shock.
3. Nine victims died and therefore could not give any information.

### 3.9 BENEFITS OF THE STUDY

The data from this study give the most valid information about the physical health of sexual assault victims who come to PGH. This will allow responsible persons to adjust the services accordingly.