

**MALE PERCEPTION AND FAMILY PLANNING PRACTICE:
A CASE STUDY IN KHAOCHAKAN DISTRICT, SAKAEO
PROVINCE, THAILAND**



**A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF
THE REQUIREMENTS FOR THE DEGREE OF
MASTER OF PRIMARY HEALTH CARE MANAGEMENT
FACULTY OF GRADUATE STUDIES
MAHIDOL UNIVERSITY**

2004

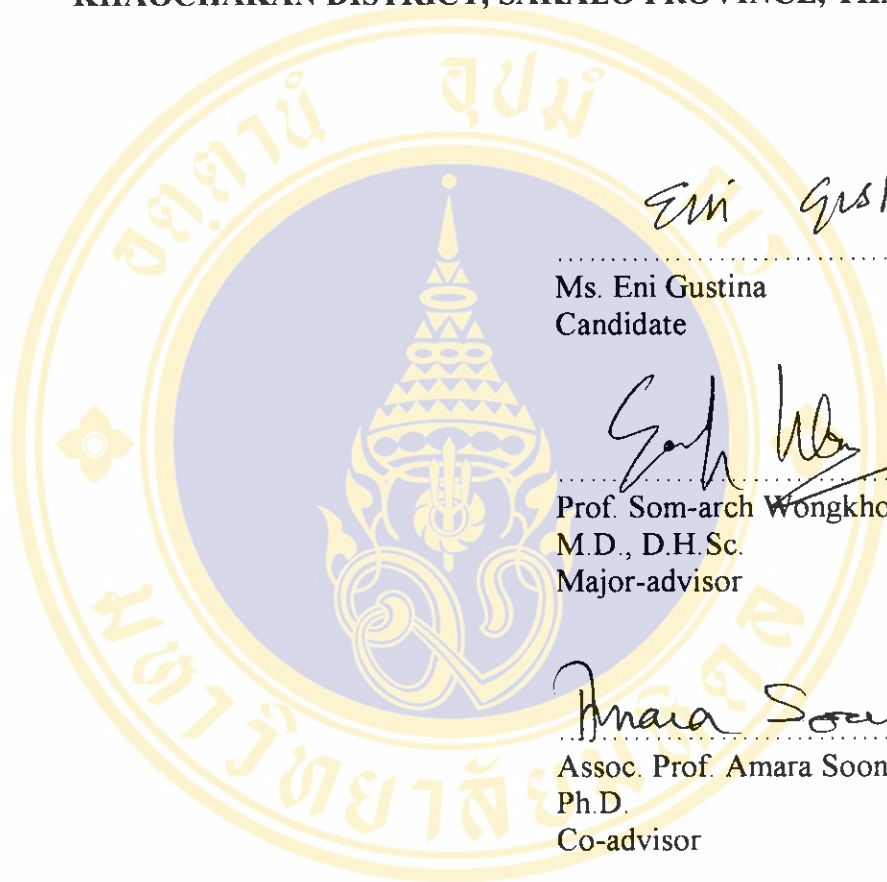
ISBN 974-04-4343-5

COPYRIGHT OF MAHIDOL UNIVERSITY

Copyright by Mahidol University

Thesis
entitled

**MALE PERCEPTION AND FAMILY PLANNING: A CASE STUDY IN
KHAOCHAKAN DISTRICT, SAKAEO PROVINCE, THAILAND**



Eni Gustina

Ms. Eni Gustina
Candidate

Som-arch Wongkhomthong

Prof. Som-arch Wongkhomthong
M.D., D.H.Sc.
Major-advisor

Amara Soonthorndhada

Assoc. Prof. Amara Soonthorndhada
Ph.D.
Co-advisor

Kanittha Chamroonsawasdi

Asst. Prof. Kanittha Chamroonsawasdi
Ph.D.
Co-advisor

Rassmidara Hoonsawat

Assoc. Prof. Rassmidara Hoonsawat
Ph.D.
Dean
Faculty of Graduate Studies

Boonyong Keiwbarnka

Assoc. Prof. Boonyong Keiwbarnka
Dr.P.H.
Chair
Master of Primary Health Care Management
ASEAN Institute for Health Development

Thesis
entitled

**MALE PERCEPTION AND FAMILY PLANNING: A CASE STUDY IN
KHAOCHAKAN DISTRICT, SAKAEO PROVINCE, THAILAND**

was submitted to the Faculty of Graduate Studies, Mahidol University
for the degree of Master of Primary Health Care Management

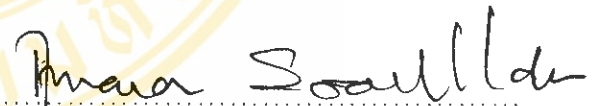
on
March 16, 2004



Ms. Eni Gustina
Candidate



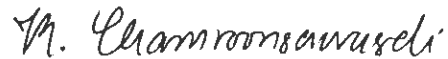
Prof. Som-arch Wongkhomthong
M.D., D.H.Sc.
Chair



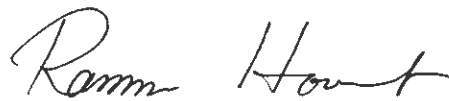
Assoc. Prof. Amara Soonthorndhada
Ph.D.
Member



Asst. Prof. Suwat Srisorrachatr
Ph.D.
Member



Asst. Prof. Kanittha Chamroonsawasdi
Ph.D.
Member



Assoc. Prof. Rassmidara Hoonsawat
Ph.D.
Dean
Faculty of Graduate Studies
Mahidol University



Assoc. Prof. Boonyong Keiwkarnka
Dr.P.H.
Director
ASEAN Institute for Health Development
Mahidol University

ACKNOWLEDGEMENT

I wish to express my deep and sincere gratitude to my Major Advisor, Professor Dr. Som-arch Wongkhomthong, for his guidance and professional expertise. In spite of his busy schedule, he spared time to give attention and encouragement during the entire period of the study. I would also like to express appreciation and gratefulness to my co-advisor, Associate Professor Dr. Amara Soonthorndhada for her guidance, tremendous support and professional help in organizing and clarifying my thesis. I am also grateful to my co-advisor Assistant Professor Dr. Kanittha Chamroonsawasdi for her valuable suggestions and support from beginning to the end of my research.

My thanks also go to the Sakaeo province Health Office, especially Head of Khaochakan District for his support and allowing me to do this research, the team of interviewers and Miss Wucharin for her coordination in data collection process and to all the respondents in Khaochakan district, who trusted to share their knowledge and opinion.

I am also very thankful to the Government of Indonesia especially Head of Health Office Karawang District, and JICA/DTEC for giving me this opportunity to participate in the MPH course at the ASEAN Institute for Health Development, Mahidol University, Thailand.

My heartfelt thanks to all my lecturers, AIHD staff and my colleagues, especially Dr Imran Hameed and Dr Charun for helping me in this course. I will always remember the kindness, which I received from AIHD and ASEAN House staff during my stay in Thailand, throughout my life.

Most of all, I am thankful to my family, especially Mr Harwandono, Mr Ega Barata Kusuma and Miss Priskatindea who gave me moral support and encouragement during my study. And lastly, I wish to dedicate this thesis to my late father Mr A. Rifai Hamid and my mother Nursidah for their eternal love and faith in me.

Eni Gustina

**MALE PERCEPTION IN FAMILY PLANNING PRACTICE: A CASE STUDY IN
KHAOCHAKAN DISTRICT, SAKAEO PROVINCE, THAILAND**

ENI GUSTINA 4637957 ADPM/M

M.P.H.M (PRIMARY HEALTH CARE MANAGEMENT)

THESIS ADVISORS: SOM ARCH WONGKHOMTHONG, M.D., D.H.Sc.,
AMARA SOONTHORNDHADA, Ph.D., KANITTHA CHAMROONSAWASDI,
Ph.D.

ABSTRACT

According to the Health for All in the 21st century program of the World Health Organization, gender issues are important to improve women's health. Male contraception is cheaper and safe from complications. The husband is the head of the family so his decision-making is important for the couple's choice of contraception method. Therefore it is important to understand male perceptions in order to address the problems involved in implementation of male contraception. In this study to determine the factors related to family planning practices and investigate the relationship between predisposing factors, enabling factors, and reinforcing factors and family planning practice, a cross-sectional survey was conducted in Khaochakan District, Sakaeo Province, Thailand during January 2004. One hundred and ninety husbands in four villages were selected by cluster sampling technique and interviewed by structured questionnaire.

This study revealed a contraceptive prevalence rate of about 95% among the respondents, while the prevalence of vasectomy was about 2%. The older husbands tended to use permanent methods, as did the older wives. The couples desiring children tended to use temporary methods. The couples living near the source of family planning services tended to use temporary methods, while couples living far from the sources of service used permanent methods.

Based on the result of this study, it is important to campaign for the permanent contraception method among young couples in order to improve the family planning program.

**KEY WORDS: MALE PERCEPTION, FAMILY PLANNING, PERMANENT
CONTRACEPTIVE METHODS**

79 P. ISBN: 974-04-4343-5

CONTENTS

	Page
ACKNOWLEDGEMENT.....	iii
ABSTRACT.....	iv
LIST OF TABLES.....	vii
LIST OF FIGURES.....	viii
LIST OF ABBREVIATION.....	ix
CHAPTER	
I INTRODUCTION	
1.1. Rationale and justification of study.....	1
1.2. Research question.....	3
1.3. Research objective.....	3
1.3.1 General objective.....	3
1.3.2. Specific objective.....	3
1.4. Hypothesis.....	4
1.5. Conceptual framework.....	5
1.6. Operational definition.....	6
II LITERATURE REVIEW	
2.1. General literature review of study.....	9
2.2. Family planning.....	10
2.3. Equity and trend of use contraceptive.....	12
2.4. Practicing of contraceptive among men.....	14
2.5. Theory Precede-Proceed Model.....	15
2.6. Factors relating to male perception for family planing practice.....	20
2.6.1. Predisposing factors.....	20
2.6.2. Enabling factors.....	25
2.6.3. Reinforcing factors.....	26
III RESEARCH METHODOLOGY	
3.1. Research design.....	28
3.2. Study population and area of study.....	28
3.3. Sample size estimation.....	28
3.4. Sampling technique.....	29
3.5. Research instrument.....	31
3.6. Validity and reliability test.....	32
3.7. Data collection procedure.....	35
3.8. Data analysis.....	35
IV RESULTS	
Results.....	36

CONTENTS (Cont)

		Page
V	DISCUSSION	
	Discussion.....	54
VI	CONCLUSION AND RECOMMENDATION	
	6.1. Conclusion.....	60
	6.2. Recommendation.....	62
	REFERENCE.....	64
	APPENDIX	
	A. Questionnaire.....	70
	B. Activities of husband in family planning practice.....	76
	C. Reliability test	77
	Map of Sakaeo Province Thailand	78
	BIOGRAPHY.....	79

LIST OF TABLES

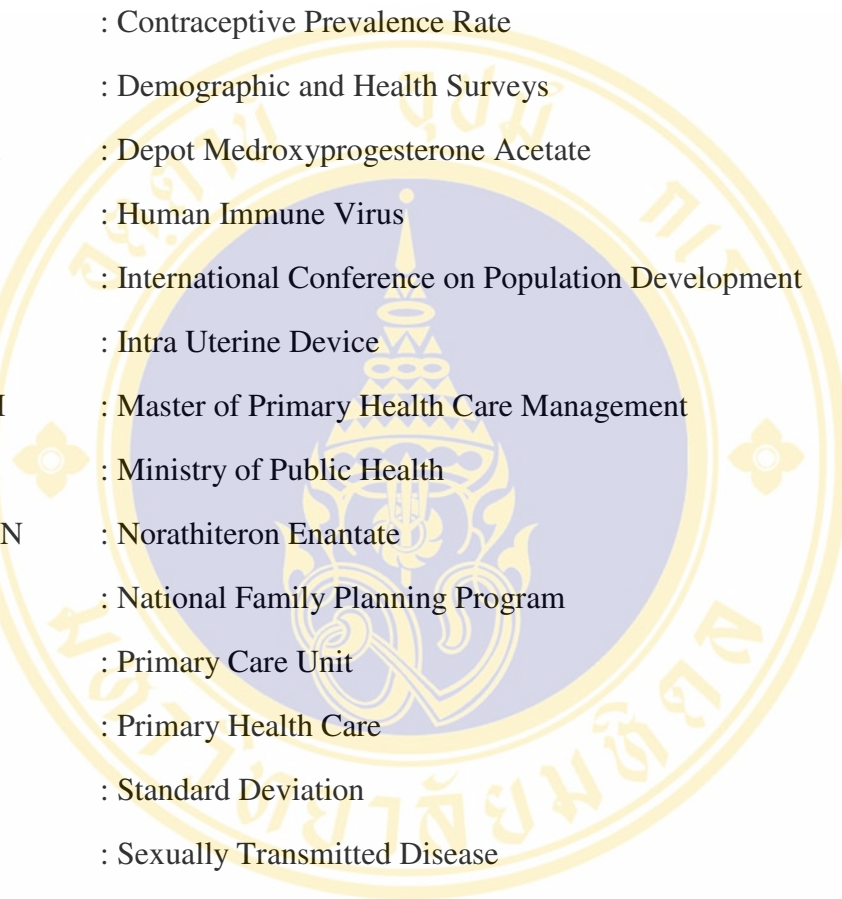
TABLE	Page
1 Contraceptive prevalence rate in Thailand 2001.....	2
2 Number of sampling from each village.....	32
3 Male perception in family planning.....	37
4 Category of male perception in family planning.....	38
5 Socio-economic characteristic of respondents.....	39
6 Knowledge of respondents about family planning.....	40
7 Level of knowledge of family planning in respondents.....	41
8 Desire for additional children.....	42
9 Accessibility and availability of family planning.....	43
10 Availability of family planning.....	45
11 Spousal communication in the respondents.....	46
12 Personal communication in the respondents.....	47
13 Mass media communication in the respondents	48
14 Contraceptive use by predisposing factors.....	50
15 Contraceptive use by enabling factors.....	51
16 Contraceptive use by reinforcing factors.....	53
17 Activities of husband on family planning practice.....	76
18 Reliability test	77

LIST OF FIGURES

FIGURE	Page
1 Conceptual frame work.....	5
2 The Precede-proceed model for health promotion and evaluation.....	19
3 Sampling technique.....	31



LIST OF ABBREVIATION



AIDS	: Acquired Immune Deficiency Syndrome
CPR	: Contraceptive Prevalence Rate
DHS	: Demographic and Health Surveys
DMPA	: Depot Medroxyprogesterone Acetate
HIV	: Human Immune Virus
ICPD	: International Conference on Population Development
IUD	: Intra Uterine Device
MPHM	: Master of Primary Health Care Management
MOPH	: Ministry of Public Health
NET-EN	: Norathiteron Enantate
NFFP	: National Family Planning Program
PCU	: Primary Care Unit
PHC	: Primary Health Care
SD	: Standard Deviation
STD	: Sexually Transmitted Disease
UNFPA	: United Nation Population Fund
VHVs	: Village Health Volunteers
VHWs	: Village health Workers
WHO	: World Health Organization

CHAPTER I

INTRODUCTION

1.1 Rationale and justification of study

The history of demography of Thailand depicts that the country has undergone a rapid increase in the rate of population growth during the twentieth century (1). The key to control population growth was the initiation of voluntary family planning program, officially adopted in 1970 (2). The success story of Thailand, therefore, in the dramatic reduction of its fertility starting in 1970's to the recent years is primarily a result of reducing the fertility rate among the married couples through the National Family Planning Program (NFPP) (3).

The growth rate decreased from 3 percent in 1970 to 2.5 percent in 1976, 1.7 percent in 1986 and 1.5 percent in 2001. The success of NFPP also can be seen in the increase of the contraceptive prevalence rate from 14.8 percent in 1970 to 79.2 percent in 2001 (4, 5).

Four major components were identified behind the extraordinary change in the fertility behavior of Thai population (6):

- (a) Economic change took place in conjunction with societal change in the Kingdom;
- (b) Thai cultural setting, with its Buddhist attitudes responded positively to ward the family planning program;
- (c) There was an existence of latent demand for effective and acceptable means to control fertility among the Thai couples, even before modern contraceptives were readily available; and
- (d) The success of national family planning program resulted in a massive increase in awareness of and accessibility to modern contraceptive methods.

Meanwhile the provision of knowledge of family planning contraceptive supplies allows couples to achieve their reproductive goals (7).

The National Family Planning Program now focuses on improving the quality and cost effectiveness of contraceptive use. This has meant encouraging a shift to more effective permanent methods such as female sterilization and male sterilization (8).

One major problem in reducing the population growth rate depends on the married couple's decision of whether or not to adopt birth control. Even when they adopt birth control by using contraceptive method, the birth rate among those pregnancies depends on types of contraceptive method used either a permanent factor or a non permanent method. Such a decision is inextricably related to many factors such as: social, economic, demographic, psychosocial, knowledge, communication and services (9). Therefore, it is necessary that factors influencing the acceptance of family planning, especially the use of male contraceptive such as vasectomy and condom, will be investigated through this research.

It is not only concerned with biological differences between women and men, or with women's reproductive role, but also acknowledge the effects of socially, culturally and behaviorally determined relationship, role and responsibilities of men and women, especially on individual, family and community health as a whole (10).

Both methods of male contraceptive are very simple and low risk from complications as well as economical (8, 9). Condoms, for instance, are simple to use, safe, effective, cheap, and easy to distribute and need no medical supervision. Furthermore, in addition to preventing pregnancy, they provide protection against sexually transmitted diseases, including HIV/AIDS (11).

Table 1 Contraceptive prevalence rate in Thailand 2001.

Method of contraception	Percentage usage
Vasectomy	1.2
Condom	1.7
Pill	26.8
Injection	22.6
Tubectomy	22.0
IUD	3.1
Norplant	1.5
Other	1.3
Total	79.2

Source: Reproductive Health in Thailand, MOPH 2001

As a permanent family planning method, vasectomy is a far simpler, cheaper and safer alternative than tubectomy, yet there are more female sterilizations in the world. The reasons are probably linked to both lack of motivation among men as well as the greater orientation of family planning programs to female methods of contraception (11).

This study proposes to investigate the factors affecting the male perception in family planning programmes in Thailand, especially in Khaochakan District, which has a relatively high male vasectomy rate (1.5%). The permanent method of contraception adopted by the men signifies their commitment to family planning in their households. Therefore by studying the factors affecting the husbands to adopt family planning in this district will help us understand the relationship between male perception and various factors related with it.

1.2 Research Question

What are factors related to family planning practice?

1.3 Research Objective

1.3.1 General Objective

To determine the factors related to male perception in choosing family planning practice.

1.3.2 Specific objectives

1. To identify the kinds of family planning practice in the study population.
2. To determine types of family planning practice.
3. To determine the relationship between predisposing factors, enabling factors, reinforcing factors and family planning practice.
 - 3.1. Predisposing factors consist of socio-demographic characteristics, knowledge, desire for additional children and sex preference of child.
 - 3.2. Enabling factors consist of availability and accessibility of family planning services.
 - 3.3 Reinforcing factors consist of spousal, personal and mass media communication.

1.4 Conceptual framework

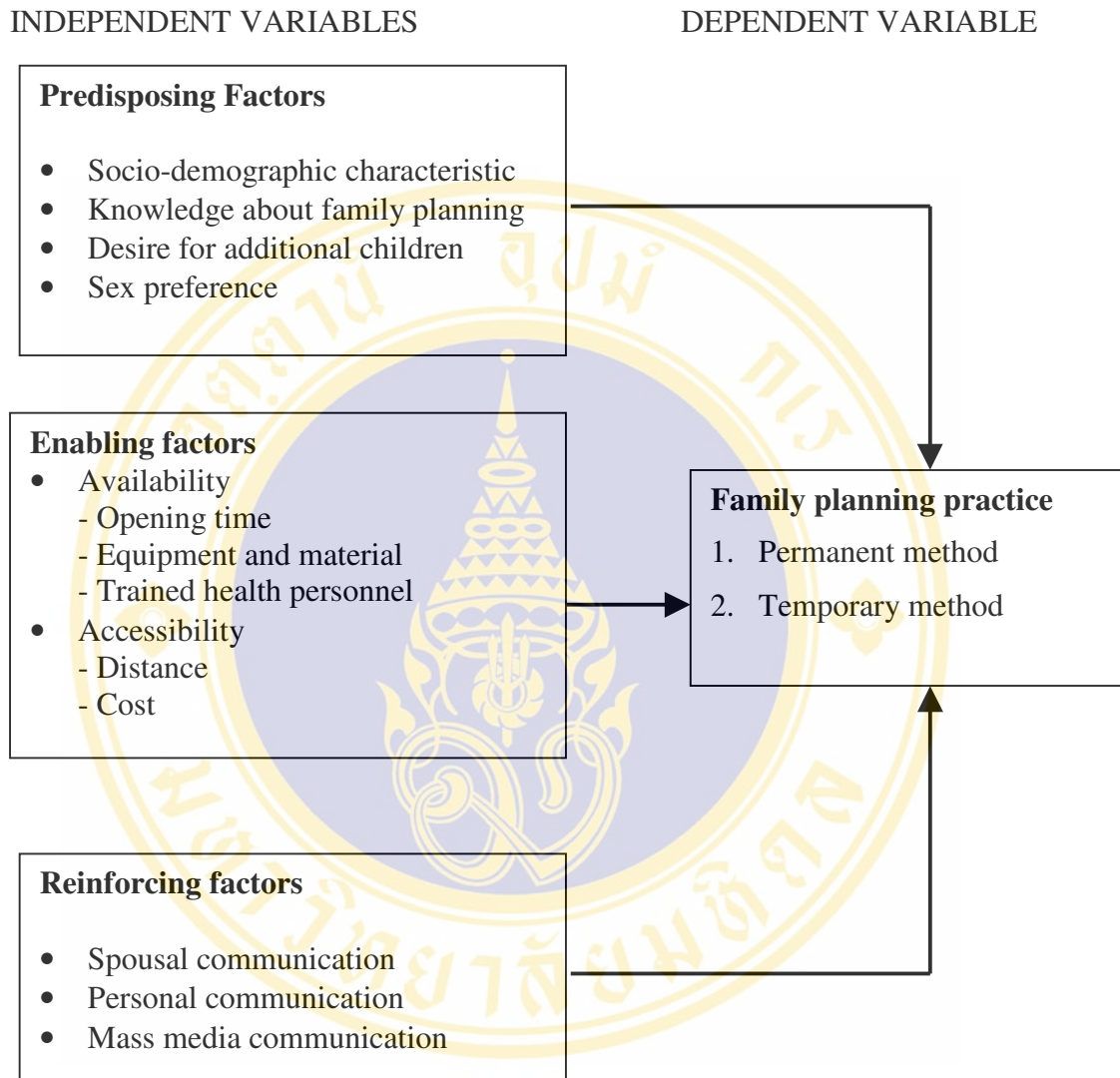


Figure 1: Conceptual framework

1.5 Operational Definition

Family Planning practice.

This refers to the activities taken by each respondent to use contraceptive for his own family as a family planning practice. This are classified in two categories

Permanent method: Husband undergone vasectomy or support their spouse for tubectomy

Temporary method: Husband using condom or supports their spouse for using temporary contraceptive

Husband's of married women in reproductive age

Males, who are married to women in reproductive age from 15 to 49 years old and currently living with their spouse. They are divided into 4 groups according to their ages as:

- less than 30 years,
- 30 – 39 years,
- 40 – 49 years,
- 50 years or older

Family income

It is measured by the total monthly income of family from all sources. This is classified into three groups:

- Earning less than 5,000 Baht/month
- Earning between 5,000 Baht to 10,000 baht/month
- Earning more than 10,000 Baht/month

Knowledge on family planning

Was referred to understanding and practical skill of the knowledge of husbands regarding the meaning of contraceptive methods, how to use and side effects of contraceptive.

Desire for additional children

Regards to the agreement between the couple, whether they desire to have more children in the future or not.

Sex preference

Refers to desired sex of children, whether they want a son and a daughter, or two children with the same sex.

Availability of family planning

The perception of respondent, whether the contraceptive services are available or not, in terms of;

1. Opening time

Refers to opening time of family planning service or facility.

2. Equipment

Refers to the equipment required for family planning service

3. Trained health personal

Refers to the presence of skilled and trained staff to provide or give family planning service to the clients.

Accessibility of family planning

The perception of respondent, whether he can access the family planning services and is composed of;

1. Distance

Refers to the distance from residence of the contraceptive acceptors to the place of family planning service, measured in kilometers.

2. Cost

Refers to how much cost the clients have to pay for family planning service and cost for transportation to get to the family planning service facility

Spousal communication

Refers to communication between husband and his wife on family planning, and decision to use contraceptives.

Personal communication

Refers to personal contact of family planning information from health personnel, friends, family members or village health volunteers, with husband having a direct impact on promoting family planning and support for family planning practice.

Mass media communication

Refers to mass media sources, to give information on family planning, composed of; radio, television, newspaper, and magazine. It means the exposure and access to information about family planning, which tended to stimulate personal contact and promote adoption of family planning practice.

CHAPTER II

LITERATURE REVIEW

2.1 Overview of birth control

At the present time population growth is a global problem. Population trends are an integral part of our common future. On 12 October 1999, many countries observed the day of six billion. It was a day to reflect on what a world population of 6 billion would mean, now and in the future; while population growth rate continue to decline, numbers are still increasing owing mainly to the effect of population momentum. It was a day to recognize that individual lives and health come first, and that paying close attention to population issue (12) can help poverty, food and water shortages and other problems of under development

According to Suzanne Belton(13); in developing countries, every years about 550,000 women die during pregnancy or childbirth and about 14.5 million babies and children under five years of age die from malnutrition; birth spacing can lead to anemia, maternal malnutrition and low birth weight babies. If the women are too young or too old when they get pregnancy, they and their baby's health and life can be danger (14).

Contraception is the medical technology of family planning, which saves the lives of women and children, improves the health of women and children and benefits families and communities. In this sense, using contraceptive is a strategy that women themselves can adopt to protect their own health (15,16).

World wide, at the present time, policy makers recognize the importance of contraceptive use to women's health. Family planning program are an important

measure contributing to the goal of reducing global population growth rate and promoting health for all in coming years (16)

2.2 Family Planning

Two central elements in Primary Health Care (PHC) are its focus on preventive management of illness, infection and nutrition deficiency and its reliance on auxiliary health workers and community perception. PHC does not require dramatic changes in community infrastructure, but concentrates instead on improving community practice in certain areas considered critical to preventive health care (health and nutrition education, mother and child health, family planning, water and sanitation, immunization, essential drugs and treatment of common diseases and injuries)(11).

Family planning is an essential element of primary health care and plays a significant role in health and socio-economic development (17).

Family planning needs for reproductive health care and family planning has helped reduce fertility rate and slow population growth around.

Contraception is the medical technology of family planning, which saves the lives of women and children, improves the health of women and children and benefits families and communities. In this sense, using contraceptive is a strategy that women themselves can adopt to protect their own health (15,16).

In particular, contraceptive methods are distinguished on “traditional” or “non supply” methods such as rhythm and withdrawal that do not require access to family planning services. Clinical and supply methods include contraceptive sterilization, intra-uterine devices (IUDs), hormonal methods (oral pills, injectables, norplant), condom and vaginal barrier methods (diaphragm, cervical cap and spermicidal foams, jellies, creams or sponges). These methods are generally considered to be more effective at preventing pregnancy than traditional methods (8).

According to effectiveness contraceptive methods divided into two groups, non-permanent methods and permanent methods. Non-permanent methods have two mechanisms, mechanical mechanism such as condom, vaginal barrier methods and intra-uterine devices. Hormonal mechanism methods have pills, injectable, Norplant. The hormonal methods contain combination of synthetic hormone estrogen and progesterone.

To use pills, women take daily and the hormone acts to inhibit ovulation, alter the endometrial lining, and impair sperm passage into the uterus by thickening the cervical mucus. The effectiveness of oral contraceptives is dependent upon the woman's ability to take a pill every day, low-dose pills cause fewer side effects than higher-dose pills while maintaining a high rate of effectiveness.

Injectable contraceptives are highly effective. Two kinds that have been approved for use in a large number of countries are DMPA (depot medroxy progesterone acetate) and NET-EN (norgestrel enanthate). Both DMPA and NET-EN produce amenorrhea in many users. This effect is seen as a disadvantage by women who consider regular bleeding a sign of health and use menstruation as an indicator that they are not pregnant.

Norplant, a subdermal implant system that provides up to 5 years of contraceptive protection, consists of 6 silicone rubber capsules, each containing 36 mg of levonorgestrel. These capsules are inserted under the skin of the woman's arm, where they release a small amount of levonorgestrel daily. Since 2000, there have also been Norplant implants that provide up to 3 years of contraceptive protection by 2 silicone rubber capsules.

Barrier methods include condoms, spermicides, diaphragm. These methods act by mechanically preventing sperm from entering the uterus. Although use-effectiveness rates are lower for barrier methods than for hormonal or surgical methods. The major benefit to users is the absence of long-term side effects and

complications. In addition, the use of condoms and to some extent other barrier methods reduce the risk of Sexual Transmitted Disease (STD).

Although sterilization procedures are available for both men and women at a global level female sterilization procedures far out number their male counter parts-vasectomy users-by nearly 5 to 1. Female sterilization involves a surgical occlusion of the fallopian tubes so that the egg and sperm cannot meet. Two approaches are commonly used to gain access to the fallopian tubes:

- 1) Mini laparotomy, which involves pulling the fallopian tubes through a small abdominal incision.
- 2) Laparoscopy, which involves inserting a laparoscope into the abdomen.

Both approaches are highly effective, with failure rates of 1 per 100 per one year.

Male sterilization, or vasectomy is simple, safer and usually less expensive than female sterilization. The vasectomy procedure involves a minor outpatient surgery done under local anesthesia. One or two small incisions are made in the scrotum and vasa deferentia are cut and tied or otherwise occluded to prevent the passage of sperm. Vasectomy is highly effective, with a failure rate 0.1 – 0.5 % in the first year.

2.3 Equity and trend of use Contraceptive

In 1994, the International Conference on Population in Cairo, Egypt. The ICPD Programme of Action stated that development and human (and, specifically women's) rights are interdependent, and that reproductive rights are included in human rights that are already recognized in international law (18).

Speaking of women, the Programme of Action is quite specific:

“Advancing gender equality and equity and the empowerment of women, and the elimination of all kinds of violence against women, and ensuring women's ability

to control their own fertility, are cornerstones of population and development related programmes. The full and equal perception of women in civil, cultural, economic, political, and social life at the national, regional and international levels and eradication of all forms of discrimination on grounds of sex, are priority objectives of the international community”(19).

In most countries, family planning seems primarily a woman's affair. This is certainly relate to the biological fact that it women who bear children. As it is, they are the ones who suffer most excessive child bearing. Thus they are generally more conscious of the need to regulate and limit pregnancies. Therefore, family planning program services have been directed primarily to the need of women, both for their own health and the health of their children (20).

Man have traditionally had considerable involvement in fertility and family planning decision making, and in actual contraceptives and organized family planning programmes however, priority was given to the provision of contraception for women, and family decision making about family planning (21,22).

Currently, within family planning programmes, male involvement is often viewed negatively, and men's opposition or indifference to family planning is often identified as a major constraint to programmed development and implementation.

Organized family planning programmes seldom recognize the positive, supportive role of men in family planning. Many women throughout the world use contraceptive method based on joint a decision made whit their husband . Moreover considerable numbers of men are using a method of family planning (22).

It is therefore important to recognize that men throughout the world are involved in family planning in various ways such as (20):

Using contraceptive when pregnancy is not desired (either male method, or not supporting and agreeing to the partner's use of female method)

Actively or passively disapproving or discouraging contraceptive use by themselves or their wife/partner.

Deciding not to decide about contraceptive use, either through a lack of knowledge about contraceptive, or a refusal or inability or reluctance to take responsibility for the consequences of their sexuality.

Men's support for women's empowerment is something to be welcomed by everyone in the field. But men are responsible for and remain at the root of many of women's reproductive health problems. As long as his continues to be true, and as a fundamental principle of human rights and equality, it also remains crucial that women have control over their own sexuality, their bodies and their health (23).

2.4 Practicing of contraceptive among men

Use of the two modern male contraceptives methods-the condom and vasectomy- is low compared with use of other methods, but it is slowly increase in some countries. In most countries traditional methods that require male cooperation-withdrawal and abstinence-also are little used (10).

Worldwide, condom and vasectomy are among the least used of all contraceptive method. Among surveyed married women in developing countries, approximately 4% report using condom, and 4% vasectomy. If China excluded from the vasectomy estimates, the percentage of women in developing counties relying on this method is just 3% (10,24).

Condoms are the major method of family planning in Japan, where 46% of all married couple use them. Condom use is widespread in Eastern Europe and former Soviet Union. In Slovakia 21% of married couple rely on condoms for family planning, in Lithuania 18% and in the Czech Republic, 17%. In US 13% of married couple rely on condom, in New Zealand, 12%, in Canada 10%. In Latin America and

Caribbean condom use is highest in Jamaica, at 17% of married couple, and in Costa Rica at 16% (10).

In Asia and the Pacific, condom use is highest in Korea, where one in every 10 married couple relies on the method. About 6% use condoms in Malaysia, and 4% in Bangladesh and Vietnam (10).

Vasectomy is popular in only a few countries. Among developing countries with recent surveys of married women, vasectomy is widely used only in Korea, at 12%, China at 10%, Nepal at 15% and India at 4%. Also about 6% of respondent reported reliance on vasectomy in Thailand in 1987, and about 4% in Sri Lanka in 1982. No survey has been conducted in these two countries since. Among developed countries, use of vasectomy is widespread in New Zealand, at 18% of married couple, Canada at 16%, the US at 13% and the Nederland at 11% (10).

Nevertheless, many researches had been conducted in this field on women's situation and lessen concerning the men, especially the role of male in family decision making process on practicing family planning.

2.5 The theory of Precede-Proceed Model

Currently, the best known and most often used model for health promotion programming is the Precede-Proceed model. Lawrence Green developed the Precede model and Kreuter to help health educators to evaluate all factors involved in planning a community wide health program. The precede model was named the Precede-Proceed model because its acts with the implementation and evaluation of the program. The precede model is an acronym for predisposing, reinforcing, and enabling constructs in educational/ecological diagnosis and evaluation (25).

Precede-Proceed is a model in which all students should become very familiar. It is considered "the model" by most people in the health profession and has been the basic for many professional projects at the national level. Precede-Proceed model is

well received because it is theoretically grounded and comprehensive in nature; it combines a series of phase in the planning, implementation, and evaluation process.

Precede-Proceed was developed over the course of about 15 to 20 years. The Precede framework was received in the early 1970s and evolved as a planning model during the late 1970s. The identification of priorities and setting of objectives in the Precede phases provide the objectives and criteria for policy, implementation, and evaluation in Proceed phases.

The Proceed framework was developed in the 1980s and is essentially an elaboration and extension of the administrative diagnosis step of Precede, which was the final and least developed link in the Precede framework. It was influenced by the perception of Green and Kreuter in national policy initiatives and development of community health promotion programs such as Planned Approach to Community Health.

Through the basic component of the Precede-Proceed model have stayed the same over the years, the model has been revised and update as the practice of health promotion has advanced. For example, as precede was used in the 1980s, it became apparent that the model needed to be expanded and thus the addition of the Proceed. One subtle change to the most recent presentation of the model and replacing it with assessment. Though Green & Kreuter still feel diagnosis to be the appropriate denotation, this change came as the result of many of the users of the model feeling uncomfortable with the term diagnosis, associating the model with clinical procedures. It also suggest that all assessments must start with or fond a problem, which is not also the case. As Green and Kreuter (1999) point out, in assets-based approach to community assessment, planners build on the strengths of the community.

The Nine Phases of PRECEDE-PROCEED

As can be seen in figure 2. Precede-Proceed is composed of nine phases or steps. At first glance, the model seems overly complicated, but on close examination,

the continuous series of steps reveals a very logical sequence for health promotion programming. The underlying approach of this model is to begin by identifying the desired outcome, to determine what causes it, and finally to design an intervention aimed at reaching the desired outcome. In other words, PRECEDE-PROCEED begins with known, an intervention can be designed to deal with them.

Phase 1 in the model is called social assessment and seeks to subjectively define the quality of life (problems and priorities) of those in the target population. The designers of this model suggest that this be best accomplished by involving individuals in the target population in a self-study of their own needs and aspirations. Some of the social indicators of quality of life include absenteeism, alienation, crime, discrimination, happiness, illegitimacy, riots, self-esteem, unemployment, and welfare.

Phase 2, epidemiological assessment, is the step in which the planners use data to identify and rank the health goals or problems that may contribute to the needs identified in phase 1. Those data might include disability, discomfort, fertility, fitness, morbidity, mortality, and physiological risk factors and their dimensions (distribution, duration, functional level, incidence, intensity, longevity, and prevalence). It is important to note that ranking the health problems in this phase is critical, because there are rarely, if ever, enough resources to deal with all or multiple problems. Also, this phase of the model is used to plan health programs.

Phase 3, behavioral and environmental assessment, involves determining and prioritizing the behavioral and environmental risk factors or risk conditions that might be linked to the health problems selected in phase 2, the behavioral factors could be the behavior or actions of individuals, groups, or communities. Behavioral indicators include such things as compliance, consumption pattern, coping, preventive actions, self-care, and utilization. These indicators can be expressed in the dimensions of frequency, persistence, promptness, quality, and range. Environmental factors are those determinants outside an individual that can be modified to support behavior, health, and quality of life. Example for environmental indicators include economic,

physical, services, and social, and their dimensions (access, affordability, and equity). Not that in figure 2, arrows connect both of the boxes in phase 3 with phase 1 and 2. The arrows from phase 3 to phase 1 represent the skipping of phase 2 if the models is applied to something other than a health problem.

Phase 4, educational and ecological assessment, identifies and classifies the literally hundreds of factors that have the potential to influence a given behavior into three categories: predisposing, reinforcing, and enabling. Predisposing factors include knowledge and many effective traits such as a person' attitude, value, beliefs, and perceptions. These factors can facilitate or hinder a person's motivation to change and can be altered through direct communication. Barriers or vehicles created mainly by societal forces or system make up enabling factors, which include access to health care facilities, availability of resources, referrals to appropriate providers, enactment of rules or laws, and the development of skill. These factors thus include all those that make possible a change in behavior on in the environment that people want. Reinforcing factors comprise the different types of feedback and rewards that those in the target population receive after behavior change, which may either encourage or discourage the continuation of the behavior. Reinforcing behavior can be delivered by, but not limited to, family, friends, peers, teacher, self, and others ho control rewards. Social benefits such as recognition; physical benefits such as economic benefits or avoidance of cost; imagined or vicarious rewards such as improved appearance, self –respect, or association with an admired person who demonstrates the behavior-all reinforces behavior. As with the previous phase, planners must set priorities. The prioritized factors identified in this phase become the focus of the intervention that will be planed.

Phase 5 consists of an administrative and policy assessment, in which planners determine if the capabilities and resources are available to develop and implement the program. It is between Phase 5 and 6 that PRECEDE (the assessment portion of the model) ends and PROCEED (implementation and evaluation) begins. However, there is not a clean break between the two phases; they really run together, and planners can move back and forth between them.

The four final phases of the model – Phase 6,7,8, and 9-make up the Proceed portion. In phase 6-implementation – with appropriate resources in hand, planners select the methods and strategies of the intervention and implementation begins. Phase 7, 8, and 9 focus on the evaluation, process, impact, and outcome, respectively, and are based on the earlier phase of the model, when objectives were outlined in the assessment process. Whether all three of these final phases are used depends on the evaluation requirements of the program. Obviously, the resources needed to conduct of evaluation of impact (Phase 8) and outcome (Phase 9) are much greater than those needed to conduct process evaluation (Phase 7).

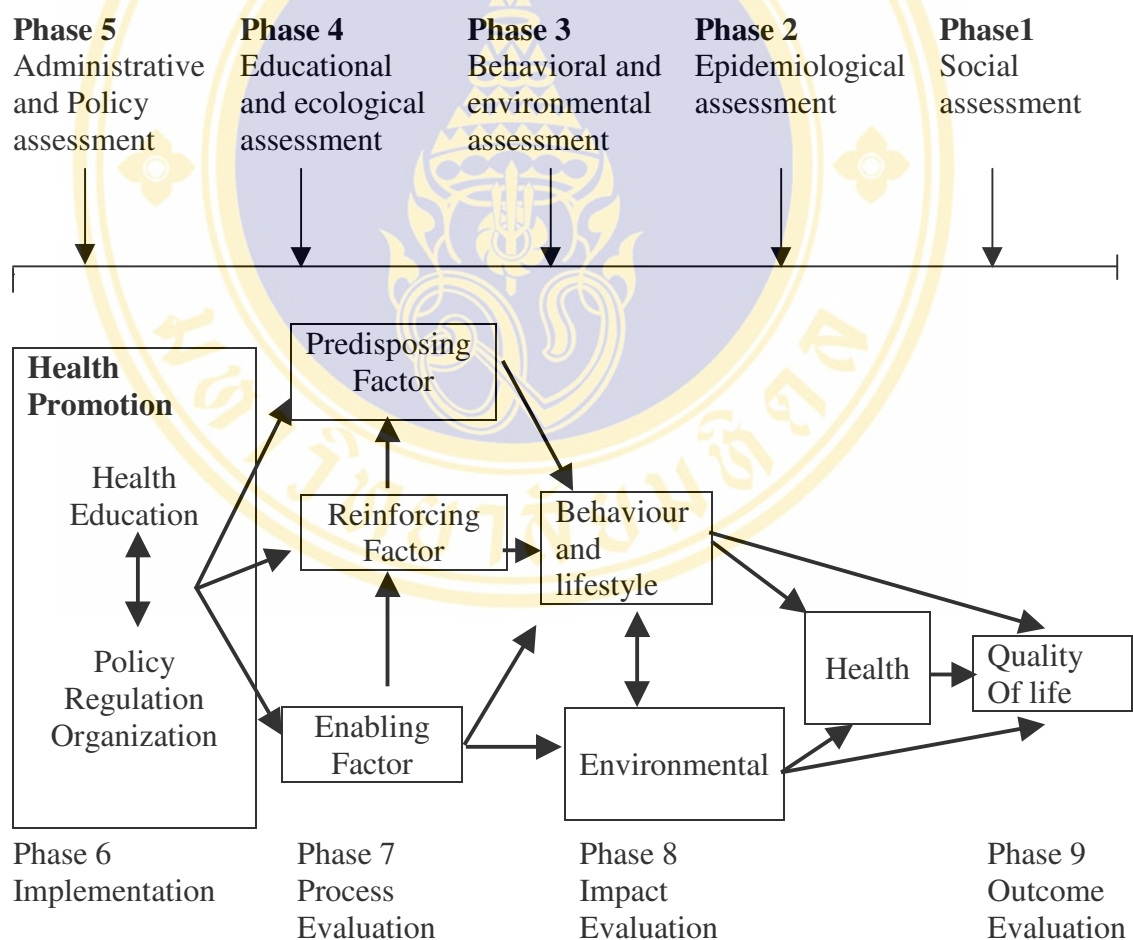


Figure 2: The PRECEDE-PROCEED Model for Health Promotion Planning and Evaluation

Sources: from Health Promotion Planning; An Educational and Ecological Approach, by Lawrence W. Green and Marshall W. Kreuter, 1999

From all of the phase, this study focus only at phase 4 or educational and ecological assessment and phase 3 or behavioral and life style. Phase 4 was independent variables and will be related to phase 3 was dependent variable. According to phase 4 will be doing some programs to achieving healthy.

2.6 Factors related to male perception for family planning practice

2.6.1 Predisposing factors

1 Socio-demographic factors

Age

It is found in many studies that there is relationship between the increase in socio-economic level and decision making to use contraceptive (16). One study by Allan Guttmacher Institute in Egypt (1995) showed that contraceptive use varied widely by age, residence, parity and education. The proportion of women using a method rose from 16% among women those age 35-39, but then declined among older women (17).

According to a recent study by Suzanne B in Istanbul, age and parity were significantly related whit women's contraceptive choice. The prevalence of permanent methods rose whit age, from no use among women 15-24 years to 6.3 % among those aged 35 or older (13).

Khalifa A. Mona had shown that among young men, the decision not to use contraceptive in the family was made more often by the husband and wife together (28).

According one study by Luechai Chulasai in Chiangmai Thailand, the younger husbands (20-29 Years) tended to make the major decision on the practice of birth control alone, while among older ones, husband and wives together were the decision makers (22).

Education

The better their education, the more likely couple was to use contraceptive. This result is obtained in most counties. A study from Bangladesh found that increase education was also the most important factor having a positive effect on contraceptive use for young couple (29).

A study by Virasack B in Lao PDR showed that: 61.2% of married women who had no education used contraceptive and 84.1% of married women who had education in secondary school or higher were using contraceptives. There was a significant relationship between the education and contraceptive use (30).

In case of husband, among Sudanese men, the husband's education was a major factor in determining ever use of family planning (28). There was a strong positive correlation between approval of family planning and education. A greater proportion of the husband with an elementary education or lower, as compared to the more educated men, were responsible for making a deliberate decision to not practice family planning. Among men with secondary education or higher, the decision was made often by husband and wife together.

In Chiangmai, Thailand, it was found that education of husband did not seem to be a significant factor in decision making process for family planning practice (22).

Occupation

In more advanced developing countries and in industrial nations, the relationship between women's employment and contraceptive use was stronger and more consistent. Employment outside the home led to higher level of contraceptive use.

There seems to be a relationship between contraceptive use and women's occupation. Many studies have indicated that employed women were more likely to use contraceptives than those women who were not employed were. For example a study in Bangladesh showed that in 1993/1994, the proportion of married women of

reproductive age with unmet need for any family planning method was 19% for housewives while it was 15.5% for other occupation than housewife (31).

Other study in Lao PDR indicated that among contraceptive user are 38% farmer, are 10.3% government employees, are 14.7% housewives and 37% are private employed (30).

Religion

Leoprapai B shown in his contraceptive prevalence survey report that a substantial difference in the percentage of couple practicing contraception among Buddhists (72.6%) and Muslims (41.1%), was still prevailing at 31 percentage points. In addition, another study in Thailand found that 98.4% of married couple practicing permanent contraceptive are Buddhist. The percentage similar in the non-permanent contraception group, 98.3% is Buddhism. Over all 98.4% of married couple in Thailand are Buddhist (32).

Family Income

In the current economic recession, family throughout the world are experiencing increasing financial difficulties with a traditional responsibility for family finances in many cultures, men are especially sensitive to the economic advantages of family planning. Modernization, urbanization, increasing pressure on resources and worldwide trend to wards the nuclear family, along with raised expectations are contributing to family financial insecurity. Many men are therefore recognizing to a greater or lesser degree the economic benefits of spacing or limiting their children (31).

A study in Ratchabury, Thailand showed that the acceptance of female sterilization by families having an income more than 5000 baht (22.5%) is significantly different from the rate of acceptance of families having income lower than 5000 baht (13.4%) (32).

2 Knowledge of Contraceptive

Conceptually, knowledge and attitude are essential for individuals to use or not use family planning method. A man must have at least some knowledge about certain contraceptive methods and the source where he can obtain service before he can acquire it. Without such knowledge, it is almost important factor that determines whether a family will decide to limit childbearing. If a man does not know that effectiveness, failure and side effect of contraceptive methods exist, or how to obtain them, he will not believe he can choose about future childbearing. Knowledge thus plays an importance and practice of contraception (8).

3 Desire for additional children

From national surveys conducted as part of the Demographic and Health Surveys (DHS) between 1990 and 1996 (33), found that another important predictor of contraceptive behavior is husband's fertility intention, that is, whether he desires to have more children. The agreement or disagreement on fertility intention between couples has an important implication on contraceptive use. The use of modern methods is highest when spouses agree not to have any more children expectedly, the use of modern methods is lowest when spouse agree to have additional children.

The pattern on direction of contraceptive use is not easy to predict when couples disagree on their fertility intentions. Result of the study showed an opposing direction: in some counties, contraceptive use is higher when only the husband wants no more children but in some countries, too, contraceptive use is higher when only the wife wanted no more children.

Ex (1993) reported that a husband's fertility preference has an effect on his own contraceptive attitude. A husband who no longer wanted additional child or children is more likely to approve of family planning than husband who still want additional children. Ex also found out that a husband's contraceptive attitude is highly related with his wife's contraceptive attitude but in contrast, a husband's fertility preference is not affected by his wife's fertility preference.

There was a positive relationship between family planning practice and number of living children. Pitaktepsomhat, P and Prachuabmob, V (34) found that it is likely that eligible women who have more living children will accept contraception more easily than fewer children.

Among married women aged 15-44 who had two living children, nearly 65 percent wanted no more, 55 percent of those with no son wanted no more, and 85 percent of women with two sons wanted no more, but 72 percent of those with a son and a daughter want no additional children.

4 Sex preference

Through analyzing Demographic Health Survey Data, in 1997 from 57 countries, Arnold (31) showed that a son preference remains strong in South Asia Countries. In that area, Bangladesh have highest ratio of preference for sons over daughters. However, by analyzing data from a cohort study in Pakistan, Hussain and others showed that the sex of serving children is strongly related with subsequent fertility and contraceptive behavior. As argued by Rahman and Davanzo (35), contraceptive use is likely to be influenced most strongly by sex preference for deliberate control of fertility.

Stash Sharon studied Ideal Family Size and Sex Composition and preferences among Wives and Husbands in Nepal. She concluded that situations where a husband's preferences for sons are stronger than his wife, husbands may be more willing to accept large. In addition, family with a son and a daughter were more likely to practice contraceptive than family with two children with the same sex.

2.6.2 Enabling factors

Availability

According to the National Family Planning Program in Thailand (41) and former studies on accessibility to family planning service, very easy to get non permanent contraceptive method, those for the prevent communicable disease

HIV/AIDS Thai policy to use one hundred percent condom. For the Permanent contraceptive methods such as tubectomy and vasectomy service, they can get at district hospital.

Thailand health system committed to the health for all strategy and primary health care. Most of villages have health center or primary care unit, which can do family planning service by health personal.

Accessibility

Kamuaansilpa revealed that a couple had to travel approximately 20 minutes to get contraceptive with temporary method (pills) and about one hour for sterilization. Other temporary methods also took about less than half an hour to obtain service. Traveling time for IUDs and Vasectomy was slightly less than one hour. In general, the accessibility to service measured preliminarily by travel time seems to be fairly favorable in Thailand (36).

Kamuansilpa P et.al also revealed that the extent of fee use of contraceptive was not high, except for vasectomy of which about 68 percent was performed free of charge. Among user of IUDs and female sterilization, only slightly more than half did not pay for service. Still the minority of users received free pills, condoms and injections (36).

But now, until Government has 30 policy couple who decide to use contraceptive method can take family planning service at health center, Primary Care Unit (PCU) or to get permanent method they come to District Hospital.

Acsadi, in his monograph (44) quotes Polgar as cultural belief's dominate family planning practices. The range of family planning varies from infanticide practices in developing countries to abortion in industrial nations. However, traditionally, family planning has been the belief of almost all cultures and nations. When researcher have field study in the community also have rumors if the husband have had vasectomy become to less of power and interested of sex.

2.6.3 Reinforcing factors

Spousal communication

Communication factors are the exposure and access to information about family planning, especially male contraceptive method (37), through Spousal communication, personal source; parents, peers, VHCs/VHVs, health personal and mass media sources; radio, television, news paper, magazine, village loudspeaker, etc which may influence levels of male perception in family planning.

Couple or spousal communication can be a crucial step toward increasing men's perception in reproductive health. Since men, as well as women, play key role in reproductive health, communication is necessary for making responsible, healthy decision. Communications enable husbands and wives to know each other's attitudes toward family planning and contraceptive use. It allows them to voice their concerns about reproductive health issues, such as worries about undesired pregnancies or STDs. Communication also can encourage shared decision-making and more equitable gender roles (38).

Many couple rarely discusses fertility and family planning. Several studies suggest that spousal communication about family planning usually begin only after the birth of one or two children (39).

Personal source communication

A study on husband-wife communication and practice of family planning found that the combination effort of family planning program, either through personal contact or media or both had a direct impact in promoting family. Personal who had the most contact to be adopters. On the other hand those who have more, tended not to be adopters.

Mass media source communication

The finding also indicated that direct effect of mass media was much smaller than that of personal contact. However, mass media contacts tended to stimulate

personal contact (40). However, mass media contacts tended to stimulate personal contacts, promote adoption. Consequently, husband-wife communication should be stimulated by personal contact with family planning personal, by mass media message for family planning and by informal discussion with friends, neighbors and relatives.

In Thailand, it was found that the private personal communication between husband and wives, relative, medical personal was he major means of communicating information about family planning (41).



CHAPTER III

RESEARCH METHODOLOGY

3.1 Research Design

This study was a cross-sectional study involving the study survey of socio-demographic factors, knowledge, desire for additional children, sex preference factors, and availability and accessibility and communication factors, which influence the male perception in family planning practice. The study was conducted from January 12th to 30th, 2004 in four villages in Khaochakan district, Sakeao province, Thailand.

3.2 Study population and area of study

The target population in this study was married men, who had wife's in reproductive age between 15 – 49 years old and were currently living with their spouses.

Study Area

Khaochakan District, Sakeao Province was purposively selected as the study site. It was considered for the study, based on data of the National Family Planning Program in Thailand in 2001, which showed the coverage of Sakeao Province for family planning equal to 87.64%, and was higher than the national average of 79.2%. The vasectomy rate in Khaochakan District was 1.5%, which was higher compared to the average 1.2% for all of Sakeao Province (42).

Khaochakan District was located 18 km from the provincial city of Sakeao, which was situated in the eastern of Thailand around 248 km from Bangkok. The total area was about 77,431 square kilometers. Geographical boundaries connected it to the following: in the north it was adjacent to Muang District, Sakeao province; to the south it was adjacent to Wungnamyen District; to the east with Wattanakorn

District; and in the west with Sanamchaikhet, Chachoengsao Province and Muang District. Khaochakan District consisted of 4 Tambons (Sub District). In 2003, it had a population of 67,593 people in 2003. Most of local people's occupations were agriculture, government service and business.

3.3 Sample size estimation

The required sample size estimation in this study was based on the following formula (43):

$$n = \frac{z_{\alpha/2}^2 p(1-p)}{d^2}$$

n = Estimated sample size

z = The standard normal deviate set at 5 % significant level (1.96)

P = Anticipated proportion of husbands who have wives' in reproductive age estimated at 13 % or P is = 0.13

d = Degree of accuracy set at 5 % or d is = 0.05

$$\begin{aligned} n &= \frac{z_{\alpha/2}^2 p(1-p)}{d^2} \\ &= \frac{(1.96)^2 (0.13)(0.87)}{(0.05)^2} \end{aligned}$$

$$= 173 \text{ persons}$$

$$\text{Adjusted} = (173 + 10\%) = 173 + 17 = 190 \text{ persons}$$

This study required at least 173 subjects. Because bias can occur such as respondents provide their answers without knowledge of true answers (response bias), respondents fails to respond to the survey because several reasons (non response bias) or interviewers could be potential for respondents' to be influenced to give inaccurate or untrue answers (interviewer error). So the sample size added to 10% to be

considered among these problems, than the sample size in this study was equal 190 respondents.

3.4 Sampling technique

To obtain the required sample, purposive sampling technique was used to select the sample. The study subjects were selected in four stages.

- In the first stage, the district was chosen purposively due to the high prevalence of practicing contraceptive among men, such as Khaochakan district, which had a high prevalence of male contraceptive practice.
- For the second stage, two target sub districts were selected from four sub districts in Sakaeo province using computer process by random data from the Minitab program. The selected sub districts were; Prapoeng sub district and Khaochakan sub district.
- In the third stage, cluster sampling was done, also using computer process, by random data from the Minitab program. In Prapoeng sub district, two villages were selected from 11 villages, while two villages were also selected from 16 villages in Khaochakan sub district.
- In the last stage, purposive selection sampling technique was used to select 190 subjects from married men whose wife's were in reproductive age and were currently living with their spouses.

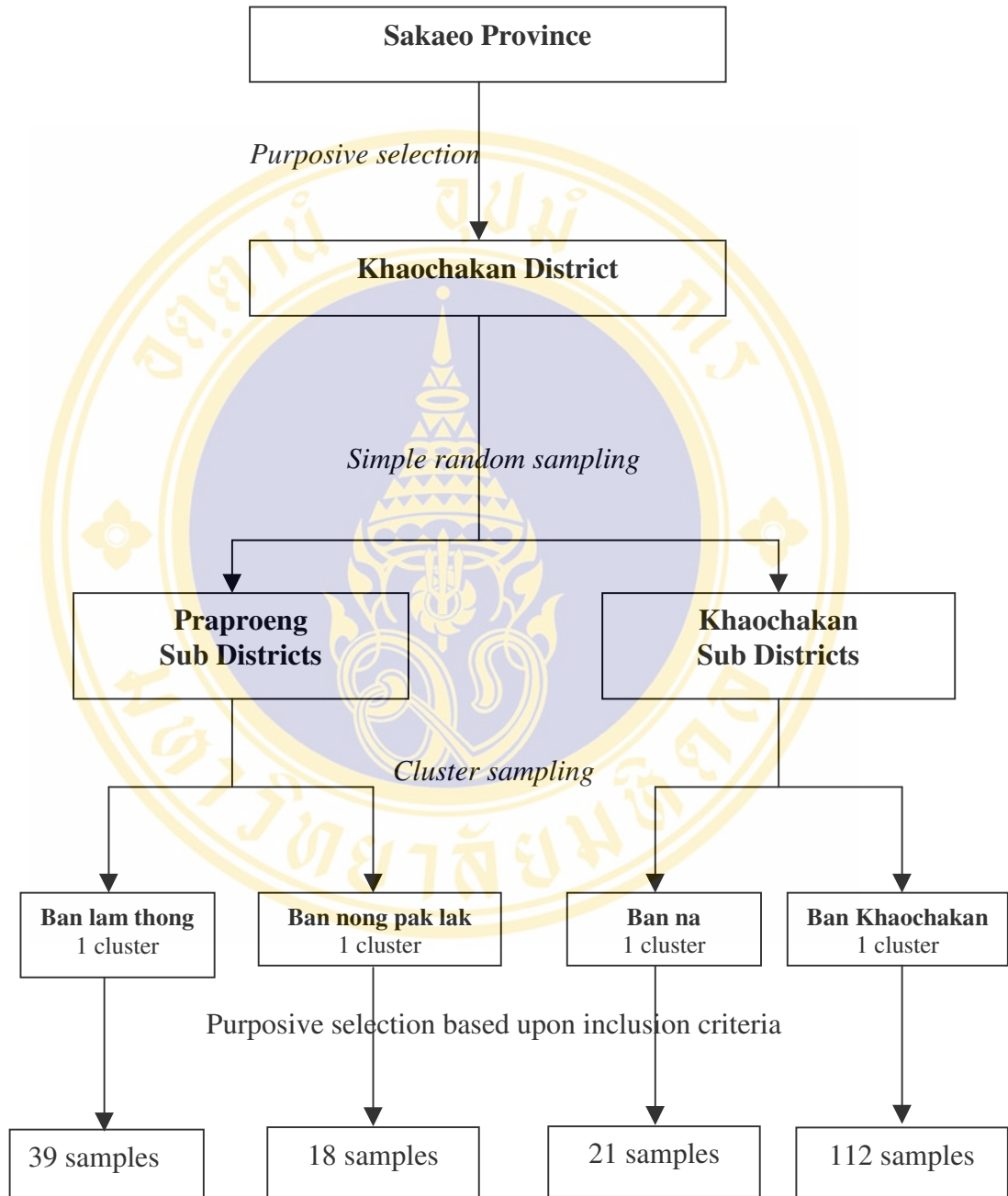


Figure 3: Sampling Technique

Table 2 Number of samples from each village.

Villages	Number of males	Number of sample selected
Ban lam thong	302	21
Ban nong pak lak	1,640	112
Ban na	574	39
Ban Khaochakan	228	18
Total	2,744	190

Source: Annual Report of Sakaeo Province 2003

3.5 Research instrument

The data was collected using a structured questionnaire filled in a face to face interview. The questionnaire was divided into 4 parts as follows:

3.5.1 Predisposing factors

1. Socio demographic factors composed of;

Age, Education, Occupation, Religion and Family monthly income.

2. Knowledge;

There were 15 questions from question number 15 to 29, about family planing, how to use and side effects of contraceptives. To measure knowledge, each correct answer was given one score and incorrect answer a score of 0. For descriptive analysis, knowledge level was classified into three groups based on Bloom's cut off point for knowledge (25), in which cut-off points were determined by 60% and 80% of full marks. In this study 60% and 80% of the full mark were 9 and 12, therefore the cut-off points was classified as follows:

High: total score 13 - 15

Moderate: total score 9 – 12

Low: total score 0 - 8

Afterwards, frequencies and percentages of levels were obtained

3. Desire for additional children:

There were 2 questions to know whether couples still desired to have additional children in the future or not. The values were categorized into three groups; yes, no and don't know.

4. Sex preference:

This variable had 5 questions, the values were divided into two groups; yes and no.

3.5.2 Enabling factors

Availability:

There were 5 questions to know the perception of respondents to use family planning services and divided into two groups; easy and difficult, based upon the convenience of the service.

Accessibility:

There were 3 questions to measure accessibility of family planning services, such as; whether husband knew the place to get family planning services or not, perceptions of husband in terms of travelling time, provider's performance and cost of family planning services.

3.5.3 Reinforcing factors

Communication factors were composed of the exposure and accessibility to information about family planning, especially male contraceptive methods. Through personal spousal communication, personal source such as parents, peers, Village Health Workers, Village Health Volunteers, health personnel and mass media sources; radio, television, news paper, magazine, village loudspeaker, etc which might have influenced levels of male perception in family planning.

3.5.4 Male perception

Which contained methods of contraceptive practices used by the couple and husband's role in family planning.

3.6 Validity and reliability test of the instrument

Before processing data collection, the researcher submitted the questionnaire to thesis advisors in order to check content validity. Then questionnaire was adapted in according to comments and suggestions of the thesis advisors and was proceeded to questionnaire pre testing. Approximately 30 husbands who had wives' in reproductive age in Ban Kwat village, a rural area at Salaya were interviewed for the pretest.

After pretest, the reliability test of the knowledge part was analyzed by Kruder Richardson KR-20 method. The reliability was obtained at $KR-20 = 0.588$ (Appendix C).

3.7 Data collection Procedure

The questionnaire was translated into Thai language. Data collection of this study was conducted by using an interview questionnaire by Thai interviewers.

Following steps were taken:

- Contacted the provincial Head Office, District Head Office and Sub District Headman to introduce the proposal and collaboration requested.
- Contacted the head of village and head of Public Health Center and asked for their help.
- In order to obtain the accurate data, the interviewers were selected from the health personnel (nurses and head of the health center) of Khoachakan district Hospital and were trained about the objectives and technique of interviewing and meaning of each question in the questionnaire for uniform understanding. This training was done by the researcher.

- Questionnaires were distributed among the health personnel to interview the respondents under the researcher's supervision.

3.8 Data analysis

After collecting data, editing and recording of data from respondents was done in the field. Then data was entered into computer by using Minitab program. This research was considered as a cross-sectional study and thus the result were presented as following:

- Frequency and percentage distribution that was calculated for all variables
- Significance of the relationship between the independent variables of interest and dependent variables was tested by Chi-Square test. Level of statistical significance was at $\alpha = 0.05$

CHAPTER IV

RESULTS

One hundred and ninety husbands who had wives in reproductive age group, 15-49 years old from four villages in Khaochakan district of Sakaeo province were interviewed between January 12th and 30th, 2004.

The results of this study are presented by descriptive statistics using frequency and percentage distribution. Chi square test was used to test the relationship between dependent and some independent variables of interest. The level of significance for all relationships was set up at a p-value of less than 0.05.

The predisposing factors such as socio-demographic characteristics, knowledge about family planning, desire for additional children and sex preference were described. The enabling factors such as availability and accessibility were described, and reinforcing factors as source of communication were also presented. The relationship between the predisposing factors, enabling factors and reinforcing factors and male perception on family planning practice were analyzed.

The results are presented into 7 parts as follows;

Part I: Male perception in family planning

Part II: Predisposing factors

Part III: Enabling factors

Part IV: Reinforcing factors

Part V: Relationship between male perception and predisposing factors

Part VI: Relationship between male perception and enabling factors

Part VII: Relationship between male perception and reinforcing factors

4.1 Male perception in family planning

In this study, criteria of male perception were according to kind of contraceptive that the couple used to prevent pregnancy. Table 3 describes the kind of contraceptive method that the couple used. A total number of one hundred and ninety respondents participated. Only 2.2% of them had vasectomy performed, 3.7% of them used condoms, 89.5% of the respondents were using others methods of contraception while 4.7% respondents did not use any contraception.

Table 3 Male perception in family planning.

Method of contraceptive	Frequency n = 190	Percentage %
Husbands using		
Vasectomy	4	2.2
Condom	7	3.7
Wives using		
Pills	84	44.2
Tubectomy	42	22.1
Injectable	35	18.4
Norplant	5	2.6
IUD	4	2.1
Not using any contraceptive	9	4.7

Based on these results, the number of males having undergone vasectomy (high perception) were only four and number of couples who were not using contraceptive (no perception) was nine. As this number of non users was small, by statistical analysis approximation, it would probably be invalid.

For statistical analysis, relationship between independent variable and dependent variable were modified. The remaining respondents were then divided into two groups; one that used permanent contraceptive method and another that used temporary methods of contraception or were not using any contraceptive.

Table 4 Category of male perception in family planning.

Methods of contraceptive	Frequency n = 190	Percentage %
Permanent methods	46	24.2
Temporary methods	144	75.8

Table 4 showed the level of male perception based on contraceptive that the couple used. The couples that used permanent methods were placed in high perception category were almost one quarter (24.2%) and those with low perception were more than three-quarters (75.8%).

4.2 Predisposing factors

The characteristics studied under the predisposing factors were; socio demographic characteristics, knowledge of family planning, and desire for additional children.

4.2.1 Socio demographic characteristics

Table 5 describes the socio- demographic characteristics of the respondents. A total number of one hundred and ninety respondents were interviewed. Almost half (46.8%) of the respondents were between 30 to 39 years, followed by 41.1% who were 40 to 49 years old, while 8.4% were less than 30 years old and 3.7% were over 50 years of age. The mean age was 38.5 years (SD.= \pm 7.3) with a minimum age of 19 and a maximum age of 69 years.

The age distribution of the wives showed nearly half (47.9%) of them ranged from 30 to 39 years old, while about a quarter (25.3%) of the respondents were less than 30 years and another quarter (26.8%) between 40 and 49 years of age. The mean age of the wives was 34.7 years (SD = \pm 12.7) Min 17, Max 48

Table 5 Socio demographic characteristics of respondents

Socio demographic characteristic	Frequency n = 190	Percentage %
Age groups (years)		
< 30	16	8.4
30 – 39	89	46.8
40 – 49	78	41.1
>50	7	3.7
Mean 38.5 (SD = 7.3) Min 19, Max 69		
Age of wife (years)		
< 30	48	25.3
30 – 39	91	47.9
40 – 49	51	26.8
Mean 34.7 (SD = 12.7) Min 17, Max 48		
Education level		
Illiterate	6	3.2
Primary school	132	69.5
Secondary school	41	21.6
College	11	5.7
Occupation		
Farmer	139	73.2
Laborer	28	14.7
Government officer	12	6.3
Trader	11	5.8
Family income (baht/month)		
< 5,000	93	48.9
5,000 – 10,000	66	34.8
> 10,000	31	16.3
Mean 8,426 (SD = 12,729 Min 1000, Max 110,000)		
Religion		
Buddhism	189	99.5
Catholic	1	0.5

The educational level of the respondents showed that majority (69.5%) had primary education, 21.6% had secondary, 5.7% higher education, while only 3.2% were illiterate. Majority (73.2%) of the respondents were farmers, followed by 14.7% laborers, 6.3% government officers and 5.8% traders.

Almost half (48.9%) of the respondents belonged to the lower income group having a monthly income of less than 5,000 Baht, while one-third (34.7%) had an income of between 5,000 and 10, 000 Baht, while the rest (16.3%) had an income of over 10,000 Baht. The mean income was 8,4 Baht (SD \pm 12,7) per month. Almost all the respondents (99.5%) were Buddhists, and only one Catholic person responded.

4.2.2 Knowledge on family planning

Table 6 shows the responses to the questions about the knowledge of family planning among the respondent husbands'. The correct responses recorded showed that the knowledge ranged from a minimum of 35.3% to a maximum of 96.3%. Concerning the knowledge items in table 6 it showed most of the respondents knew about family planning. They had good knowledge of how to use pill contraceptive, side effects of the pill and injectable methods. They also had good knowledge about using condoms, surgery time and scar of vasectomy. The correct answers given by the respondents ranged between 71.1% to 96.3%.

For the questions that related with the side effects of vasectomy and negative information concerning vasectomy, about half (50%) of respondents gave correct answers. That for the question 'Vasectomy can make one lose interest in sex' and 'Vasectomy will make one weak' nearly similar opinions of respondents was seen, that is 53.1% and 51.6% correct answers. Also question that said "if man had vasectomy, he can not work hard" and "vasectomy can cause castration for man", the respondents gave 50.0% and 42.1% correct answers. This meant that about half of them believed in the negative information about vasectomy or rumors.

Regarding the beneficial effect of family planning on women's health, only about one-third of respondents (35.3%) gave correct answers while almost two-thirds (64.7%) gave incorrect replies. It meant that the respondents did not know the family planning was related and important for women's health.

Table 6 Knowledge of Family Planning in respondents.

Knowledge items	Correct answer	
	n=190	%
1. There are many ways that couples can use to prevent pregnancy	183	96.3
2. Women should take oral pills every day to avoid pregnancy	182	95.8
3. Condom is simply a contraceptive for male	182	95.8
4. Condom is the convenient method to prevent pregnancy	173	91.1
5. The time for performing vasectomy is short	156	82.1
6. The incision and scar of vasectomy surgery is often large	145	76.3
7. Condoms can prevent 100 % sexually transmitted infections and HIV/AIDS	144	75.8
8. Vasectomy is a fairly simple operation	143	75.7
9. Pills and injectable will make abnormal bleeding in women	135	71.1
10. Vasectomy will make one lose interest in sex	101	53.1
11. Vasectomy will make the man weak	98	51.6
12. Condom causes irritation for man	97	51.1
13. If man has a vasectomy, he can't work hard	95	50.0
14. Vasectomy can cause castration of man	80	42.1
15. Family planning is important for health of women	67	35.3

Table 7 shows the level of knowledge about family planning in the husbands' interviewed, grouped into high, moderate and low. The respondents having more than 80% correct answers were considered to have high level of knowledge, those scoring between 60% to 80% were considered as having moderate knowledge and those securing less than 60% were labeled as having low level of knowledge, based upon Bloom's cut off point (25). Where 60% and 80% of the total scores corresponded to 9 and 12 scores respectively.

Less than half (43.2%) of the respondents appeared to have moderate knowledge about Family Planning, while one-third (34.2%) showed high levels and about a quarter (22.6%) displayed low level of knowledge. The mean was 10.4 (SD \pm 2.3) minimum 6 and maximum 14.

Table 7 Level of knowledge scores on family planning.

Level of knowledge score on family planning	Number n = 190	%
Knowledge of family planning		
High (> 12 score)	65	34.2
Moderate (9 – 12 score)	82	43.2
Low (< 9 score)	43	22.6
Mean = 10.4 (SD ± 2.3 Min 6, Max 14)		

4.2.3 Desire for additional children

Table 8 describes the respondents desired to have additional children. A large number (71.6%) of respondents had 2 to 3 children, while the rest (20%) had one child and 8.4% had more than 3 children. The median was 2, minimum 0 and maximum 6. The desire of having additional children was described positively by a quarter (25.8%) only. A large majority of 71.1% were not interested in having more children, while a small number of respondents (3.1%) were uncertain.

4.2.4 Sex preference

Regarding the sex preference, 63 husbands responded. Out of which 41.3% were desirous of having a son, while 58.7% wanted a daughter. Helping with household chores was the reason for the preference of a daughter stated by almost 60% of the respondents, while nearly a quarter (23%) wanted a son to take care of the family.

Table 8 Desire for additional children in respondents.

Characteristic	Frequency n = 190	Percentage %
Number of living children		
≤ 1	38	20.0
2 – 3	136	71.6
> 3	16	8.4
Median = 2, Q1 = 2, Q3 = 3		
Desire for additional children		
Yes	49	25.8
No	135	71.1
Unsure	6	3.1
Sex preference		
	n=63	
Son	26	41.3
Daughter	37	58.7
Reason for sex preference		
Daughter preference: n=37		
Help in house hold chores	22	59.5
Easy to takes care	11	29.7
Take care of family	4	10.8
Son preference: n=26		
Take care of family	6	23.1
Help with house expenses	6	23.1
Help father in his work	5	19.2
Continue the family clan	4	15.4
Leadership	2	7.7
Don't like girls	2	7.7
Easy to take care	1	3.8

4.3 Enabling factors

4.3.1 Accessibility of family planning services

Table 9 shows the accessibility of family planning services as perceived by the respondent husbands'. Almost all (99%) of the respondents knew where the family planning service was available. Two-thirds of respondents (67.0%) went to the health center for family planning services, about one third (30%) availed the services from a

hospital, while only 1% went to the primary care unit for this service and 2% went to drug stores.

Table 9 Accessibility of family planning services.

Accessibility of family planning services	n = 190	
	Number	%
Know the place to get contraceptive services		
Yes	188	98.9
No	2	1.1
Main source of contraceptive service	n = 188	
Health center	126	67.0
Government hospital	56	29.8
Drug store	4	2.1
Primary care unit	2	1.1
Distance from residence to service center (km)	n = 188	
< 2	56	29.8
2 – 5	27	14.4
> 5	105	55.8
Mean = 10.5 (SD ± 11.6) Min = 0 Max = 50		
Travelling time to family planning service (minutes)	n = 188	
< 15	72	38.3
15 – 30	93	49.5
> 30	23	12.2
Mean = 25.0 (SD ± 27.6) Min = 0 Max = 180		
Convenience for travelling to family planning services	n = 188	
Difficult	18	9.6
Not difficult	170	90.4
Cost for contraceptive service (baht)	n = 188	
<30	180	95.8
30 – 50	4	2.1
> 50	4	2.1
Median = 20 Q1 = 20 Q3 = 30		
Cost for transportation (baht)	n = 188	
< 30	132	70.2
30 – 50	35	18.6
>50	21	11.2
Median = 20 Q1 = 20 Q3 = 40		

Of the one hundred and eighty eight respondents, over half (55.8%) lived more than 5 Km away from the family planning service, while about one third (30%) lived less than 2 Km from a service source. Almost half (49.5%), of husbands had to travel

for 15 to 30 minutes to reach a FP service, while 38.3% could reach within 15 minutes and 12.2% required over half an hour to get to a FP service. The cost of contraceptive was less than 30 baht for 95.8%, while it was more than 30 baht for 4.2%. The travel cost to get the FP service was less than 30 baht for 70.2% while it was more than 30 baht for 29.8% of respondents.

4.3.2 Availability of Family Planning services

Table 10 showed the majority (86.7%) of the respondents had the perception that there was adequate number of family planning service providers. Likewise a large number (96.3%) believed that the service providers were skilled.

Table 10 Availability of family planning services.

Availability of family planning services	n = 188	
	Number	%
Perception about providers		
Enough number of providers	163	86.7
Not enough number of providers	25	13.3
Skill of family planning service providers		
Skilled	181	96.3
Unskilled	7	3.7
Knowledge of service availability time		
Know	65	34.6
Don't know	114	60.6
Unsure	9	4.8
Convenience to get service		
Convenient	178	94.6
Inconvenient	10	5.4

More than half (60.6%) of the respondents were not sure of the time of availability of the family planning services, while more than one third (34.6%) of the respondents knew the timing of the service's availability. Most of the respondents (94.6%), found the family planning service to be convenient to approach, only a negligible number (5.4%) thought that the service was not conveniently located.

4.4 Reinforcing factors

4.4.1 Spousal communication

Table 11 shows the family planning communication with the spouse. 61.1% of the respondents confirmed that they received information about family planning from their wives, while 39% denied it. Whereas 57.3%, or more than half, were convinced by their wives to use contraceptive. A quarter or 24.7% of respondents were not convinced to use contraceptives, by their wives’.

Table 11 Spousal communication in the respondents

Spousal Communication	Number n = 190	%
Learnt of family planning service from wife		
Yes	116	61.1
No	74	38.9
Convinced wife to use contraceptive		
Effective	109	57.4
Not effective	47	24.7
Unsure	34	17.9

Personal communication

Table 12 shows the various sources of information of family planning through personal communication. Almost half 49.5% of the respondents received information on family planning from friends, while 50.5% said that they did not learn about family planning from friends. 42.1% of the respondents were convinced by their friends, while one third (33.2%) could not be prevailed upon by their friends to use contraception.

More than three-quarters (75.3%) of the respondents learnt about family planning from the Village Health Volunteers (VHV). A similar proportion of the respondents (75.8%) were effectively convinced by the persuasion of the VHVs to use

contraception, while only a few (6.8%) were not convinced by the VHVs. A large number (84.2%) of husbands learnt about Family Planning from Health Workers and (89.5%) were effectively convinced by the health workers while only 2.1% were not convinced to use contraception by the Health Workers.

Table 12 Personal communication in the respondents.

Personal Communication	Number n=190	%
Learnt of family planning service from friends		
Yes	94	49.5
No	96	50.5
Convinced to use contraceptives by friends		
Effective	80	42.1
Not effective	63	33.2
Unsure	47	24.7
Learnt of family planning service from Village Health Volunteer		
Yes	143	75.3
No	47	24.7
Convinced to use contraceptives by Village Health Volunteer		
Effective	144	75.8
Not effective	13	6.8
Unsure	33	17.4
Learnt of family planning service from Health Worker		
Yes	160	84.2
No	30	15.8
Convinced to use contraceptives by Health Worker		
Effective	170	89.5
Not effective	4	2.1
Unsure	16	8.4

4.4.3 Mass media communication

Table 13 describes the family planning communication through mass media. Majority (80%) of respondents learnt of family planning through the radio, and a similar number (80%) found it to be effective to explain family planning to them.

Most of them (89.5%) learnt of family planning through the television and majority, (87.9%) were convinced about contraception through television.

Table 13 Mass media communication in the respondents.

Mass media communication	n = 190	
	Number	%
Learnt of family planning service from radio		
Yes	152	80.0
No	38	20.0
Convinced to use contraceptives by radio		
Effective	152	80.0
Not effective	6	3.2
Unsure	32	16.8
Learnt of family planning service from Television		
Yes	170	89.5
No	20	10.5
Convinced to use contraceptives by Television		
Effective	167	87.9
Not effective	8	4.2
Unsure	15	7.9
Learnt of family planning service from Newspaper		
Yes	93	48.9
No	97	51.1
Convinced to use contraceptives by Newspaper		
Effective	127	66.8
Not effective	19	10.0
Unsure	44	23.2
Learnt of family planning service from Magazine		
Yes	72	62.1
No	118	37.9
Convinced to use contraceptives by Magazine		
Effective	112	58.9
Not effective	19	10.0
Unsure	59	31.1

Almost half (48.9%) of the husbands learnt of family planning through newspapers. Two thirds (66.8%) found the newspaper messages to be effective, while only 10% found them to be ineffective in convincing them to use contraception. Majority (62.1%) of the respondents learnt about family planning through magazines. Similarly more than half (58.9%) of the respondents found the magazines effective while 10% found them inadequate in convincing them to use contraceptive services.

4.5 Relationship between contraception use in FP and predisposing factors

Table 14 studies the relationship between male perception in family planning and the predisposing factors. A statistically significant relationship was found between husband's age and their perception in family planning. Chi square was significant at a p-value of 0.014. This showed that the younger aged men preferred the use of temporary contraception compared to older men who had a higher percentage of vasectomy or permanent contraception performed.

The relationship between wife's age and permanent contraceptive methods was also statistically significant at a p-value of 0.001. This implied that 14.1% of women less than 35 years age, preferred permanent contraception compared to 35.1% of women who were more than 35 years old. This corresponded to the male tendency of using temporary measures in younger ages compared to higher proportion opting for permanent contraception in older age groups.

Desire for additional children also had a statistically significant relationship with permanent contraception at a p-value of less than 0.001. Which meant that those desirous of having more children preferred temporary contraception compared to those who were not interested in more children, and who opted for permanent measures.

All other variables like, education, occupation, income, knowledge about family planning, and sex preference, did not appear to bear any statistically significant relationship with permanent contraception.

Table 14 Contraceptive use by predisposing factors.

Predisposing factors	Contraceptive				χ^2 (df)	p-value
	Permanent		Temporary			
	n = 46	%	n = 144	%		
Husband's age (years)					6.054 (1)	0.014
≤ 40	21	18.1	95	81.9		
> 40	25	33.8	49	66.2		
Wife's age (years)					11.421 (1)	0.001
≤ 35	14	14.1	85	85.9		
> 35	32	35.2	59	64.8		
Education level					1.678 (1)	0.195
≤ primary	30	21.7	108	78.7		
≥ secondary	16	30.8	36	69.2		
Occupation					0.265 (1)	0.607
Farmers	35	25.2	104	74.8		
Others	11	21.6	40	78.4		
Family income (Baht)					4.540 (2)	0.103
< 5,000	25	23.2	83	76.8		
5,000 – 10,000	17	33.3	34	66.7		
> 10,000	4	12.9	27	87.1		
Knowledge about FP					3.125 (2)	0.210
High (score 13 – 15)	13	20.0	52	80.0		
Moderate (score 9 – 12)	25	30.5	57	69.5		
Low (score 0 – 8)	8	18.6	35	81.4		
Desire for additional children					18.480 (1)	0.001
Yes	2	4.0	48	96.0		
No	44	34.1	90	65.9		
Sex preference					0.008 (1)	0.929
Son	8	30.8	18	69.2		
Daughter	11	29.7	26	61.3		

4.6 Relationship between contraception use and enabling factors

Table 15 studies the relationship between permanent contraception and the enabling factors. A statistically significant relationship was found between source of service and type of contraception with a p value less than 0.001. This meant that contraception was more readily available at health centers than other places.

Table 15 Contraceptive use by enabling factors.

Enabling Factors	Contraceptive				χ^2 (df)	P value
	Permanent		Temporary			
	n = 45	%	n=143	%		
Source of service					30.376 (1)	0.001
Health center	15	11.9	111	88.1		
Others	30	48.4	32	51.6		
Distance to FP service (Km)					11.704 (2)	0.003
< 2	6	10.7	50	89.3		
2 – 5	4	14.8	23	85.2		
> 5	35	33.3	70	66.7		
Travelling time (min)					11.526 (2)	0.003
< 15	15	20.8	57	79.2		
15 – 30	18	19.3	75	79.7		
> 30	12	52.2	11	47.8		
Cost of contraceptive (baht)					6.613 (2)	0.037
< 15	3	8.6	32	91.4		
15 – 30	41	28.3	104	71.7		
> 30	1	12.5	7	87.5		
Cost of travel (baht)					29.814 (2)	0.001
< 15	4	11.4	31	88.6		
15 – 30	13	13.4	80	86.6		
> 30	28	50.0	25	50.0		

A significant relationship was found between distance from family planning service and type of contraception used (p value < 0.003). It is inferred that the farther the distance from the center, the higher percentage of people opted for permanent measures.

Travelling times to the family planning service and type of method of contraception also showed a significant relationship (p -value 0.003). People living closer to the source of FP service had a higher percentage of temporary method usage, compared to permanent measures which were common in people living at a longer travelling distance from the facility.

A significant relationship was found between the cost of contraceptive and type of family planning method used by the respondents (p -value 0.037).

A significant relationship was also established between cost of transportation and type of family planning measure used (p -value < 0.001). The lower cost of transportation prompted the user to adopt temporary measures, while the respondents due to higher costs of travel preferred permanent measures.

4.7 Relationship between contraception use and reinforcing factors

Table 16 shows the relationship between type of contraceptive used and the reinforcing factors. A significant relationship was established between the friend being the source of information and type of contraceptive used (p -value of 0.014). This implied that the friends were a source of positive conviction for the respondents to opt for permanent contraceptive measures.

Nearly one-third (31.9%) of the respondents received information about permanent methods of family planning from their friends, 28.5% from their wives' and about an equal number (26.6%) from the Village Health Volunteers and Health Workers.

In case of mass media, 27.9% learnt about permanent family planning methods through newspapers, while almost equal numbers (25%) received the knowledge through radio, television or magazines.

Table 16 Contraceptive use by reinforcing factors.

Source of information	Contraceptive				χ^2 (df)	p value
	Permanent		Temporary			
	n = 46	%	n= 144	%		
Wife					2.915 (1)	0.088
Yes	33	28.5	83	71.5		
No	13	17.6	61	82.4		
Friend					6.018 (1)	0.014
Yes	30	31.9	64	68.1		
No	16	16.7	80	83.3		
VHV					1.759 (1)	0.185
Yes	38	26.6	105	73.4		
No	8	17.1	39	82.9		
Health worker					1.881 (1)	0.170
Yes	42	26.2	118	73.8		
No	4	13.3	26	86.7		
Radio					0.115 (1)	0.735
Yes	36	23.6	116	76.4		
No	10	26.3	28	73.7		
Television					2.055 (1)	0.152
Yes	43	25.3	127	74.7		
No	2	10.5	17	89.5		
Newspaper					1.393 (1)	0.238
Yes	26	27.9	67	72.1		
No	20	20.6	72	79.4		
Magazine					0.039 (1)	0.843
Yes	18	25.0	54	75.0		
No	28	24.8	90	75.2		

CHAPTER V

DISCUSSION

The role of men in family planning practice in Khaochakan district, Sakaeo province in accordance with the findings from this present study is becoming important in the context of raising contraceptive practice among their spouses. It should also be noted that contraceptive prevalence rate for vasectomy in Khaochakan district was higher (2.2%) than prevalence rate in whole of Sakaeo province (1.5%) and higher than national prevalence rate of 1.2% (4). The acceptance of the husbands to undergo permanent surgical contraceptive procedure, clearly highlighted their commitment to family planning.

Apart from the decision to undergo vasectomy, the study also highlights the role of the males in family decision to practice contraception. It was found that more than half (50.53%) of respondents made decisions with their wives for using contraceptives (see appendix B). This was of great importance, especially in case of permanent contraceptive methods where, before the woman having tubectomy, a letter permitting the procedure from the husband was required.

5.1 Relationship between predisposing factors and contraceptive use

There was significant relationship between the age of husband and category of male perception in chosen contraceptive method. It was found that husband in the older age groups tended to have high perception. Similarly, wife's age also had significant relationship with male perception. Wives in the older groups tended to use permanent contraceptive methods. It was also believed that the older the husband and wife, the lesser were the chances of bearing more children, hence probably the greater use of the permanent family planning contraceptive methods. This is similar to another research by Andi Muhadir in Ratchaburi Thailand 1991, which found that

husband and wife ages, related with role in decision making to practice birth control (45).

Regarding the relationship between husband's educational level, and male perception, no statistical relationship was found. Different results were found by Mannan in Bangladesh 2002 (48). That indicated that more educated husband, possibly have greater understanding necessary to use the contraceptive methods. The better educated, are more likely to opt for sterilization. In spite of that the study noted that husband's who had higher education (secondary school or university level) were more likely to have lower number of children. In addition to this, husbands with high education tended to know that family planning was related with healthy women

As for the occupation was concerned, it was found that majority of respondents were farmers. In terms of occupation in this study, distribution of couples who used permanent and temporary contraceptive methods was nearly similar. There was no statistical relationship between husband's occupation and male perception in family planning. Shahjahan found significant relationship between occupation and contraceptive used in Pathumthani province Thailand 1998 (49)

The relationship between family income and male perception was significant. This is in contradiction with the research finding of Luechai in Chiang Mai Thailand in 1990, which stated that 88% of husbands, who approached for practicing birth control, did so because of economic reasons (22). In this study, respondents who had high income only few (14.3%) used permanent methods and among those had moderate income 34% of them use permanent methods.

Number of living children as a variable had significant relationship with male perception, and was found that those who had 2 or more children were using permanent contraceptive methods more than the group who had only 1 child. The mean number of living children was 2.2, minimum is 0 and maximum was 6 children. This supports a similar study by Youry in Cambodia 1996, which also revealed that spouses with high number of children practiced contraceptive more effectively than

those who had fewer children (47). This study revealed that number of living children influenced contraceptive use.

Considering the desire to have more children, the result of this study noted that most of respondents expressed that they didn't want to have any more children (71.1%). The desire of additional children was significantly related with contraceptive methods. It found that couples who did not want additional children 34.1% decided to use permanent contraceptive method, in contrast with the couples who still wanted additional children only 4.2% used permanent contraceptive method.

Regarding sex of children desired, two-thirds of the respondents in this study wanted specifically to have a boy or a girl in their family (66.8%) to balance the gender. Tran Van Phuong in 1996 also showed in his study that 62% of married couple who practiced permanent contraceptive at Ratchaburi Hospital of Thailand desired the sex balance in their children (32).

In terms of sex preference, more than half of respondents said that they were satisfied with either sex, where as in this study preference for girls (58.7%) was slightly higher than boys (41.3%) respectively. This study contrasts with the trend in most of South Asian countries, which had preference for sons rather than daughters (46).

The results revealed that knowledge of husbands of family planning was not significantly related with the contraceptive use. In another study by Lawoyin et al., in rural area of Nigeria in 2002, found similar results that knowledge was not sufficient enough to promote permanent contraceptive (50). Regarding the knowledge of husband in this study, it could be said that many of the husbands (43.6%) had a fair level of knowledge. One-third (33.7%) of them had a high knowledge level and the rest (22.7%) had a low level of knowledge, based on Bloom's cut of point classification of knowledge (25).

5.2 Relationship between enabling factors and contraceptive use

In this study it was found that the health center was the main source of contraceptive service for two thirds of the respondents (67.0%), whereas the other one third (33.0%) of respondents or their wives got family planning service from government hospitals, drug stores or primary care units. A significant relationship was found between the place of family planning service and contraceptive method that they used (p -value < 0.001).

Regarding distance from residence of respondent to the service center it was found that more than half (55.8) respondents living more than 5 kilometers, nearly one-third (29.8%) respondents lived less than 2 kilometers and those living between 2-5 kilometers from source of family planning service were (14.4%). A significant relationship was found between distance from residence of respondent to the service center and method of contraceptive used (p -value of < 0.001). Phetdham also found similar results in his study in Houaphanh Province, Lao PDR in 2003 (52).

In respect of traveling time, almost half (49.5%) of the respondents spent 15 to 30 minutes to get to a family planning service. Whereas about a quarter (25%) each of the respondents needed less than 15 minutes and more 30 minutes to reach a family planning service. There was significant relationship between traveling time and contraceptive method used. For permanent contraceptive method, most of the respondents had traveling time more than 30 minute (52.2%), probably because for permanent contraceptive service they had to go to the district hospital. On the other hand, traveling time less than 15 minute, in 79.2% cases for non permanent contraceptive method used.

In terms of perception in difficulty for respondent to get family planning service, in this studied it was found that there was no significant relationship with contraceptive methods used. Nearly similar distribution existed between those who had difficulty and those who did not find it difficult to choose contraceptive method.

There was significance relationship found between the cost of contraceptive and the method used (p-value 0.037). The other study by Phetdam in Lao PDR 2003 found no significant relationship between cost of contraceptive and contraceptive method (52). This probably can be attributed to the Universal Coverage Scheme and free contraceptive pills provided by the government.

A significant relationship was found between the cost of transportation and the methods of contraceptive used (p-value of < 0.001). Majority (88.6%) of respondents spending less than 30 Baht were inclined to use temporary contraception compared to 11.4% who opted for permanent methods. Similarly 50.8% of husbands having to spend over 30 Baht on transportation preferred permanent contraception compared to 11.4% of respondents having to spend 30 Baht or less on transportation.

5.3 Relationship between reinforcing factors and contraceptive use

The respondents who had received information about family planning that could have influenced the category of male perception in family planning practice were explored as shown in table 14. No statistical significance exists between information through spousal means and type of contraceptive used (p-value 0.088). Azimi and Atiya in their study in Malaysia 2003 found significant relationship between husband-wife communication on family planning and current practice contraceptive (51).

In case of information received from friends were investigated and it was found to be statistically significant (p-value 0.014). Over two-thirds (68.1%) opted to use temporary contraceptive methods while the rest (31.9%) preferred permanent methods, after being convinced by friends to use contraception. Amara, on his study in Buriram Province Thailand 1987 was found more than half respondents learned about vasectomy from their friends (37).

Receiving information from village health volunteers (VHVs) and health workers, is shown in the same table. It was found that the distribution was almost similar of those husbands who received information from VHVs (26.6%) and from

health worker (26.3%). However both of these sources of information were not significantly related with the male perception in family planning (p-values of 0.185 and 0.130). Andi M also finding the same result on his study in Ratchaburi Thailand 1991.

Regarding information from mass media sources shown in table 14. The information received from radio 23.7%, and through the television 25.3% was almost similarly distributed. No significant relationship was found between either information received from radio or television and method of contraception used (p-values 0.735 and 0.152). These findings correspond to similar results found by research by Andi Muhadir in Ratchaburi province Thailand in 1991 (45).

Concerning the information from newspapers and magazines, the table showed almost similar distribution between husbands who ever had information from newspapers (27.9%) and magazines (25.0%). There was no significant relationship with p-value 0.238 for information from newspaper and 0.843 for information from magazine.

CHAPTER VI

CONCLUSION AND RECOMMENDATION

6.1 Conclusion

The success of family planning program in Thailand, can be assessed by the growth rate which has decreased from 3 percent in 1970, to 1.1 percent in 2001. Now the focus is on improving the quality and cost effectiveness of contraceptive use. This has meant encouraging a shift to more effective permanent methods such as female and male sterilization.

This study has tried to investigate the factors affecting the male perception in family planning programmes in Thailand, especially in Khaochakan District, which has a relatively high male vasectomy rate (1.5%). Therefore by studying the factors affecting the husbands decision to adopt permanent methods of family planning in this district will help us understand the relationship between male perception and various factors related with it.

This cross sectional study was conducted at four villages in Khaochakan district of Sakaeo province. In order to determine the kinds of family planning practice in the study population, to determine husband perception in choosing permanent family planning methods and to determine relationship between; socio-demographic factors, knowledge, desire for additional children, accessibility for family planning service, availability, spousal communication, personal communication, mass media communication and male perception in family planning practice.

Based on the findings and resulting interpretation, the following conclusion was drawn:

According to kinds of contraceptives used, male perception in Khaochakan district is higher than the percentage of male perception in contraceptive practice in

Thailand (4). However, it is still quite low in absolute terms. To achieve the goal for health for all by 2020, it is imperative that the male perception should be improved, to effectively curtail the rapid growth in population worldwide. The study conducted revealed that 2.2% of males in the Khaochakan district had undergone vasectomy as a permanent contraceptive measure, while 97.8% couples still used other methods.

This study revealed that socio economic factors such as age of husband, age of wife, desire for additional children had a significant relationship with the contraceptive method that the respondent couples used. On the other hand educational level, occupation, family income, knowledge about family planning and sex preference did not have any significant relationship with method of contraception used.

For the knowledge that related with the side effects of vasectomy and negative information concerning vasectomy, about half (50%) of respondents gave correct answers. This meant that about half of them believed in the negative information or rumors. Regarding the beneficial effect of family planning on women's health, only one-third of respondents gave correct answer while two-thirds gave incorrect replies.

In the enabling factors concerning the accessibility and availability to get family planning service compared to the type of method used. Significant relationship was found between the source of service, distance to family planning service, traveling time, cost of contraceptive, cost of transportation and the method of contraceptive employed by the respondents.

In the reinforcing factors, concerning the source of information and conviction to use the family planning method mostly there was no significant relationship found. Only information acquired from friends showed significant relationship with the choice of method for family planning used. Probably the respondents trusted their friend's experience and were ready to follow them. However, no significant relationship was found between information gathered from wife, VHV, Health

Workers, Mass Media like Radio, Television, Newspapers and Magazines, and the method of contraception used.

In conclusion, it can be said that age of couples, knowledge about negative aspects and rumors about vasectomy play an important role in choice of contraception by males. The distance, cost of travel and cost of contraception too influence the decision of males in choosing a contraceptive method. Lastly, friends influence the men in opting for vasectomy, more then other means of information sharing.

6.2 Recommendation

Based upon the results of this study toward the male perception in family planning practice in the Khaochakan District, Sakaeo Province, following recommendations are offered:

6.2.1 Recommendations for action

In order for men to help shoulder their responsibility in family planning, it is recommended that:

1. Concerning the results of this study the prevalence of permanent methods is still quite low. Younger couples prefer temporary methods over permanent. Those couples, who have no desire for more children should be motivated through intensive information campaigns to consider permanent methods as a choice for contraception
2. According to the results about knowledge of side effect and negative information about vasectomy, in the husbands, it is recommended that appropriate education should be given to all males in order to make them understand the true picture about vasectomy.
3. As accessibility factors like distance, cost of travel and contraceptives appear to influence the males in choosing contraceptive method. It is

recommended that outreach programs should be conducted by the National Family Planning Program to provide easy access to contraceptives for the population.

4. As friends play an important role in influencing men in deciding the method of contraceptive. It is recommended that family planning support groups should be established in the villages, tambons and district levels. Where the community can be advised and motivated by the people who have had vasectomy and can become role models.
5. Health personnel can give information in pre counseling to couples wishing family planning.

It is assumed that the above steps would greatly improve the knowledge, attitude and practice of males in actively participating in family planning programs in the area.

6.2.2 Recommendation for further study

For further study, following recommendations are suggested:

- 1 A cohort study in specific community needs to be conducted to evaluate the influence and the effect of related factors on the acceptance of husbands in practicing contraceptive, compared with husbands who do not use contraceptive.
- 2 A study on male perception in family planning using qualitative research method should be conducted in order to have more understanding on the perception process

REFERENCES

1. Chamrathirong A. The need for another revolution after the reproductive revolution in Thailand. *J Popul Stud* 1998 July; 7(1); 1-16.
2. Ministry of Public Health, Mahidol University. Thailand population monograph 1993. Bangkok. 1994.
3. Ratanawichit.S.. The effect of women's status and roman catholicism on fertility of catholic women in Thailand [M.A. Thesis in Population and Reproductive Health Research]. Nakhon Pathom: Faculty of Graduate Studies, Mahidol University; 2002.
4. Ministry of Public Health. Health statistic of Thailand 2002: health reproductive in Thailand. [Online]. 2003. Available from: [http:// www.moph.go.th:infohealth.html](http://www.moph.go.th:infohealth.html) [Accessed 2003 Sept 23].
5. Chamrathirong A, Stephen EH. Determinant of contraceptive method choice in Thailand. Nakhom Pathorn: Institute or Population and Social Research, Mahidol University, Thailand. 1987.
6. Knodel J, Chamrathirong A, Debalvalya. Thailand's reproductive rapid fertility decline in a third world setting. Madison: The University of Wincosin Press 1987.
7. Guest P. Fertility Preference in Thailand. *Warasan Prachakon Lae Sangkhom.* 1999 Jul;8(1):1-19.
8. United Nation Organization. Levels and trend of contraceptive use assessed in 1998, Department of Economic and Social Affairs. New York: Population Division United Nation; 2000.
9. World Health Organization. Technical and managerial guidelines for vasectomy service, Geneva: The Organization; 1988.
10. Megan D. Reproductive health: new perspective on men's perception. *Population Report Series Journal* 1998; (46): 2-14.

11. .Naila K. From fertility reduction to reproductive choice: gender perspectives on family planning: discussion paper at Institute of Development Studies. Ottawa, March 1992. (Unpublished)
12. Frankenberg E. Sikoki B, Suriastini W. Contraceptive use in a changing service environment: evidence from Indonesia during the economic crisis. *Stud Fam Plann* 2003; 34(2):103-16.
13. Suzane.B. Contraception: the first step health messenger. Philadelphia: Lippincott; 2000.
14. Indonesia. Ministry of Health, Republic of Indonesia. Strategic planning national, making pregnancy safer (MPS) in Ministry of Health Republic of Indonesia. Jakarta: The Ministry; 2001.
15. World Health Organization. Female sterilization. Geneva: The Organization; 1992.
16. "-----". Filiphina: Region Officer for Western Pacific. Socio economic and health indicators. Manila: The Organization; 1995.
17. International Family Planning Perspective: Level of fertility has declined steadily in Egypt, but unwanted childbearing remains common. New York: The Allan Guttmacher Institute; 1997.
18. United Nation Population Fund. Hopes and realities, closing the gap between women's and their reproductive experience. New York: UNFPA; 1997.
19. Ministry of Health Republic of Indonesia; Gender identity. Jakarta: Ministry of health republic of Indonesia; 2000.
20. United Nations Fund for Population Activities. Right, empowerment and development, right to choose, reproductive right and development health. New York: UNFPA; 1997.
21. International Planned Parenthood Federation. Male involvement in family planning; report of IPPF Staff consultation maternal child health population dynamic library. London: John Hopkins's School of Hygiene; 1997.
22. Chulasai L. The roles of husbands and fathers in family planning in rural Chiang mai, Thailand Chiang Mai: Chiang Mai University; 1990.

23. Forster R. Where are all the men, a conceptual analysis of the role of men in family formation. *J Fam Issues* 2002 July; 23(5): 579-600.
24. Frykman J. Space for a man: the transformation of masculinity in 20th century culture. *Reprod Health Matters* 1997; 9: 11-14.
25. Marge B. Men. *Reprod Health Matter* 1996 Nov; (8): 7-10.
26. Lawrence W, Green, Marshall W, Kreuter. The preceed-proceed model for health promotion planning and evaluation. an educational and ecological approach. *Josep E. Burn*: 1994; 66-72.
27. International Family Planning Perspective. Fearing side effects, many Turkish women choose traditional contraceptives. New York: The Allan Guttmacher Institute; 1997.
28. Khalifa AM. Attitudes of urban Sudanese men toward family planning. *Stud Fam Plann*, 1998 Aug; 19(4): 7-12.
29. Islam M. Contraceptive among adolescent, in Bangladesh. *Asia Pac Popul J* 1995; 10 (1): 21-38.
30. Virasack B Contraceptive use among rural married women in Xiengngeun District, Luangprabang Province, Lao PDR [M.P.H.M. Thesis in Primary Health Care Management]. Nakorn Pathom: Faculty of Graduate Studies, Mahidol University, 1999.
31. Barkat-e-K, Nikhil C, Dewan Md. MR. Unmet contraceptive need in Bangladesh: evidence from 1993/94 and 1996/97 Demographic and Health Surveys. , *Asia Pac Popul J* 1999; 14(2): 37-49.
32. Phuong TV. Factors related to the married women practicing permanent contraceptive method in Ranchaburi hospital, Thailand. [M.P.H.M Thesis in Primary Health Care Management]. Nakorn Pathom: Faculty of Graduate Studies, Mahidol University. 1996.
33. Bankole, A, Susheela S. Couple's fertility and contraceptive decision making in development countries: hearing the man's voice. *Int Family Plann Perspect* 1998 March; 6(1): 2-25.
34. Pichit P, Vicid P. Fertility and Family planning among rural and urban women in Thailand. Bangkok; n.p.1974.

35. EngenderHealth (AVSC International). Western Hemisphere Region, Literature Review for the Symposium on male perception in sexual and reproductive health: new paradigms. Oaxaca, Mexico 1998 October.
36. Bayu W. Determinant factors of acceptance of tubectomy in Ratchaburi Province Thailand [M.P.H.M.Thesis in Primary Health Care Management]. Nakhom Pathom; Faculty of Graduate Studies, Mahidol University; 1995.
37. Soonthorndhada A. The effect of informal communication on vasectomy practices in rural areas of Thailand. Nakhon Pathom: Institute for Population and Social Research , Mahidol University 1987.
38. Couple communication, Communication programs [Online], Population Report Series J, Number 46. Available from:
<http://yahoo.com:infohealth.org/j.46chap5/shtml>. [Accessed 2003 November 8].
39. Extent of couple communication about family planning [Online], Population report series J, number 46. Available from:
<http://yahoo.com:infohealth.org/j.46chap5/shtml>. [Accessed 2003 November 8].
40. Saha A., Shattock F., Moustafa T. Epidemiology in primary health care Anjali Saha. New Delhi: Interprint; 1989.
41. Office of Prime Minister. National Statistics Office. Report of the survey of knowledge, attitude and family planning practice in southern region of Thailand. Bangkok: The Office; 1994.
42. Annual report of Health Sakaeo Province, Thailand 2002. Sakaeo: The Office. 2003.
43. Lwanga SK, Lemeshow S. Sample size determinant in health studies. Geneva: WHO; 1991.
44. Acsadi GT. Traditional birth control methods in Yorubaland. in culture, natality and family planning. Chapel Hill: Univ of North Carolina; 1976.
45. Muhadir A. Factor affecting male perception in family planning in Ratchaburi Province, Thailand [M.P.H.M.Thesis in Primary Health Care Management]. Nakhon Pathom: Faculty of Graduate Studies, Mahidol University; 1991.

46. Khan MA, Parren A. Influence of son preference on contraceptive use in Bangladesh. *Asia Pac J* 2000; 15 (3): 43-55.
47. Youry SE. Knowledge attitude and practice of family planning among women reproductive age in Sangker District, Battamrang Province, Combodia [M.P.H.M.Thesis in Primary Health Care Management]. Nakhom Pathom: Faculty of Graduate Studies , Mahidol University; 1996.
48. Mannan HR. Factors in contraceptive choice in Bangladesh: goal, competence, evaluation and access. *Contraception* 2002 May; 65(5): 357-64.
49. Shahjahan M. Factors affecting of contraceptive use among the thai muslim men in vilage 12 and 13, sub district Klongsong, District Klongluang, Pathumthani Province Thailand [M.P.H.M. Thesis in Primary Health Care Management]. Nakhom Pathom: Faculty of Graduate Studies, Mahidol University; 1998.
50. Lawoyin, et al. Family planning in rural Nigeria: a study among men. *Afr J Med Sei* 2002 Jun; 31(2):159-62.
51. Azimi YN, Atiya AS. Husband-wife communication and family planning practice among Malay married couple in Mukim Rusila Terengganu, Malaysia. *Med J Malaysia* 2003 Jun; 58(2):218-28.
52. Vanhnolrath P. Family planning practice among married women of reproductive age in Samneua Municipality, Houaphanh province, Lao PDR [M.P.H.M. Thesis in Primary Health Care Management]. Nakhom Pathom: Faculty of Graduate Studies, Mahidol University; 2003.



APPENDIX A

QUESTIONNAIRE

THE ROLE OF MALE PERCEPTION IN FAMILY PLANNING PRACTICE, A
CASE STUDY IN KHAOCHAKAN DICTRICT, SAKAEO PROVINCE,
THAILAND

Identification:

House Number : _____
 Village : _____
 Sub District : _____
 Name of Interviewer : _____
 Date of Interview : _____

Part 1 Predisposing factors

1.1 Socioeconomic factors

Please fill in the blank and put tick [✓] in an appropriate box to mark the answer to the question

1. How old are you _____ Years
2. How old is your wife _____ Years

3. What kind contraceptive do you currently use?

1. Vasectomy
 2. Condom
 3. Others (specify) _____

4. What is the level of your education?

1. Below primary school (illiterate)
 2. Primary School
 3. Secondary School
 4. Higher (college/university/higher) Specify _____

14. If no, what gender do you want?

1. Male more than female (reason _____)

2. Female more than male. (reason _____)

1.4 Knowledge

Please put tick [✓] in an appropriate box for each statement

No	Statement	True	False
15	There are many ways and methods that couple can use to prevent pregnancy		
16	Women missing one day take pill contraceptive can be pregnant		
17	Pills and Injectables will make abnormal bleeding to women		
18	Condom is the convenience method to prevent pregnancy		
19	Condom is a simply contraceptive for male		
20	Vasectomy is a fairly simple operation		
21	Vasectomy can cause castration in man		
22	If a man has vasectomy, he can't work hard		
23	Condom has will make irritation for man		
24	Condom can prevent 100% for sexual transmitted infections and HIV/AIDS		
25	The incision and scar of vasectomy surgery is often large		
26	The time of vasectomy surgery is often short		
27	Vasectomy will make you lose interest in sex		
28	Vasectomy will make you weak		
29	Family planning is important only for women health		

Part 2 Enabling factors

2.1 Accessibility of family planning services

30. Do you know the place where to get family planning service?

1. No (skip to question number 37) 2. Yes

31. If yes, what is the name of place which most possible to you?

1. Government Hospital 4 Health center
 2. Primary Care Unit 5 Drug store
 3. Private Hospital or clinic 6. Others(specify) _____

32. How far from your house to this place? _____ (Kilometer)

33. How long does it take from your place to get the family planning service?
 _____ minutes _____ Hours

34. It is difficult to get there?

1. Yes (reason _____) 2. No

35. How much do you pay for contraceptive per visited? _____ Baht

36. How much do you pay for transport to go to family planning service per trip?
 _____ Baht

2.2 Availability of family planning services

37. What do you perceive about number of the provider in family planning services

1. Enough 2. Not enough

38. What do you perceive about the provider performance in Family Planning service?

1. They are skilled 2. They are unskilled

39. Are the places of family planning service open at the working time every days?

1. Yes 2. No 3. Not sure

40. It is convenient for you to get family planning service?

[] 1. Yes (reason _____)

[] 2. No (reason _____)

Part 3 Reinforcing factor

3.1 Have you heard any information about Family Planning?

	Source of information from:	Yes	No
41	Your wife		
42	Your friends		
43	Village Health Volunteers		
44	Health Personnel/Workers		
45	Radio		
46	Television		
47	Newspaper		
48	Magazine		

How will you assess the following source of information for you to use contraceptives?

No	Source of information from:	Effective	Not effective	Don't know
49	Your wife			
50	Your friends			
51	Village Health Volunteers			
52	Health Personnel			
53	Radio			
54	Television			
55	Newspaper			
56	Magazine			

Part 4 Male Perception

57. Who decides to use contraceptive in your family?

[] 1. You

[] 2. Your wife

[] 3. Both

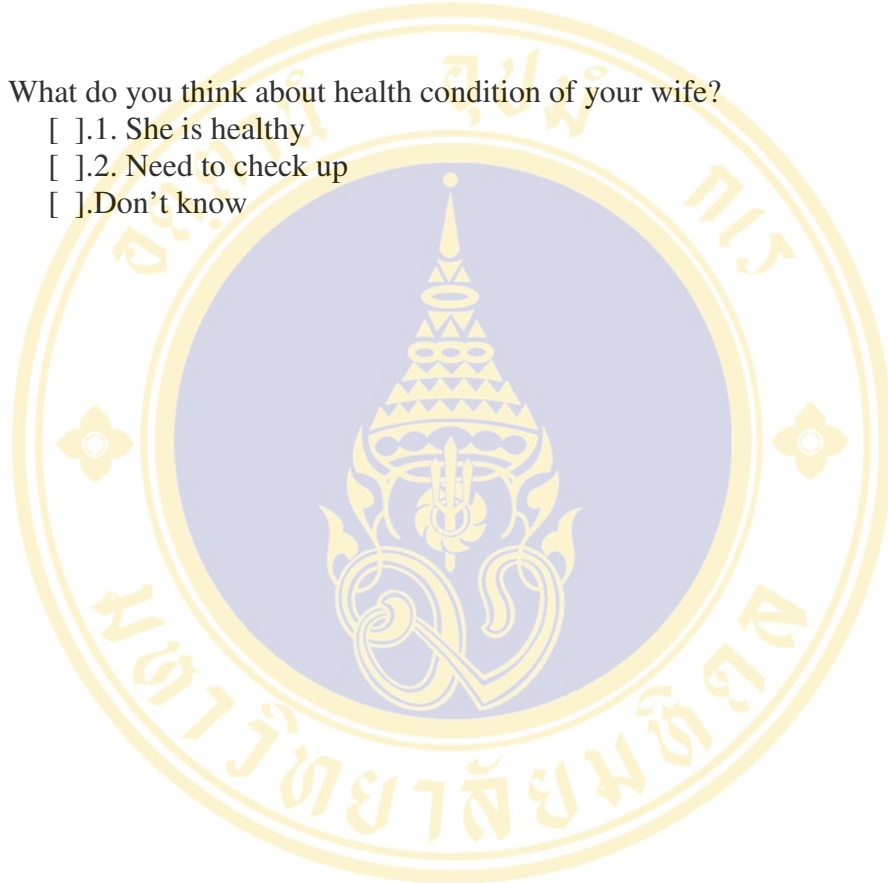
No	Statement	Yes	No
58	You suggest your wife to use contraceptive		
59	You ever accompany your wife take family planning check up		
60	You tried to know the health condition your wife after using Contraceptive		
61	You ever ask providers (Doctor, Nurse, and Midwife, other) about contraceptive		

62. What do you think about health condition of your wife?

1. She is healthy

2. Need to check up

3. Don't know



APPENDIX B

ACTIVITIES OF HUSBAND

Table 17 Activities of husband on family planning practice.

Activities	Frequency	Percentage
Decision making in choice of contraceptive		
Husband	18	9.5
Wife	76	40
Both	96	50.5
Husband suggests wife to use contraceptive		
Yes	83	43.7
No	107	56.3
Accompanies wife to take FP check up		
Yes	58	30.5
No	132	69.5
Asks about the health condition of wife		
Yes	169	88.9
No	21	11.1
Asks the provider about contraceptives		
Yes	113	59.5
No	77	40.5
Husband's perception about wife's health status		
Healthy	139	73.2
Need to check up	46	24.2
Don't know	5	2.6

APPENDIX C

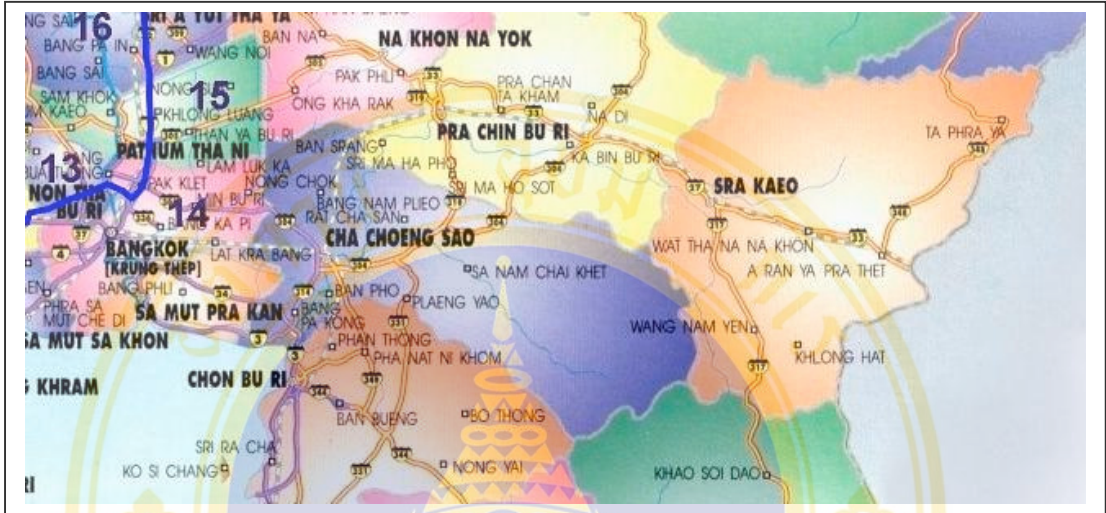
Table 18 Reliability test for knowledge of husband.

No.	var1	var2	var3	var4	var5	var6	var7	var8	var9	var10	var11	var12	var13	var14	var15	x	x
1	1	1	1	1	1	0	0	1	0	0	0	0	0	1	1	8	64
2	1	1	1	1	1	1	0	0	0	1	1	0	0	0	1	9	81
3	1	1	0	1	1	0	0	0	0	1	0	1	0	0	1	7	49
4	1	1	1	1	1	1	0	1	1	1	1	0	1	1	1	13	169
5	1	1	0	1	1	1	0	1	1	1	1	1	1	1	0	12	144
6	1	1	0	1	1	1	0	0	1	1	1	1	0	0	1	10	100
7	1	1	0	1	1	0	0	1	1	1	1	0	1	1	1	11	121
8	1	1	1	1	1	1	0	0	0	1	0	1	0	0	1	9	81
9	1	1	0	1	1	1	0	1	1	1	1	1	1	0	1	12	144
10	1	1	1	1	1	1	0	0	0	1	0	1	0	0	1	9	81
11	1	1	0	1	1	1	0	1	1	1	1	1	1	1	1	13	169
12	1	1	1	1	1	1	0	0	0	1	0	1	0	0	1	9	81
13	1	1	0	1	1	1	0	1	1	1	1	1	1	1	1	13	169
14	1	1	0	1	1	1	0	1	1	1	1	0	1	1	1	12	144
15	1	1	0	1	1	1	0	1	1	1	1	0	1	1	1	12	144
16	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	14	196
17	1	1	0	1	1	0	0	0	0	1	1	1	1	1	1	10	100
18	1	1	1	1	1	1	0	0	0	1	0	1	0	0	1	9	81
19	1	1	0	1	1	1	0	1	1	1	1	0	1	1	1	12	144
20	1	1	1	1	1	1	0	0	0	1	0	1	0	0	1	9	81
21	1	1	1	1	1	1	0	0	0	1	0	1	0	0	1	9	81
22	1	1	1	1	1	1	0	0	0	1	0	1	0	0	1	9	81
23	1	1	1	1	1	1	0	0	0	1	0	1	0	0	1	9	81
24	1	1	0	1	1	1	0	0	0	1	0	0	0	1	1	8	64
25	1	1	0	1	1	1	0	1	1	1	1	1	1	0	1	12	144
26	1	1	0	1	1	1	0	0	1	1	0	1	0	0	1	9	81
27	1	1	0	1	1	0	0	0	1	1	1	1	0	0	1	9	81
28	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	14	196
29	1	1	0	0	1	1	1	0	0	1	1	1	0	0	1	9	81
30	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	15	225
Sum	30	30	13	29	30	25	4	14	15	29	18	22	14	14	29	316	3458
P	1.00	1.00	0.43	0.97	1.00	0.83	0.13	0.47	0.5	0.97	0.6	0.73	0.47	0.47	0.97		
Q	0	0	0.57	0.03	0	0.17	0.87	0.53	0.5	0.03	0.4	0.27	0.53	0.53	0.03		
Pq	0	0	0.25	0.03	0	0.14	0.12	0.25	0.25	0.03	0.24	0.2	0.25	0.25	0.03	2.04	

$$rKR - 20 = \frac{K}{K-1} \left(1 - \frac{pq}{s^2} \right) = 1.07 \left(1 - \frac{2.04}{4.46} \right) = 0.588$$

APENDIX D

Map of Sakaeo Province



BIOGRAPHY

NAME	Eni Gustina
DATE OF BIRTH	20 August 1963
PLACE OF BIRTH	Baturaja, South Sumatra Province INDONESIA
INSTITUTIONS ATTENDED	Faculty of Medicine University of Indonesia 1982-1988 Medical Doctor
FELLOWSHIP/ RESEARCH GRANT	JICA/DTEC
POSITION & OFFICE	Chief of Primary Health Service Karawang District Health Office West-Java Province, INDONESIA