DETERMINANTS OF CONDOM USE AS A TEMPORARY FAMILY PLANNING METHOD AMONG MARRIED MEN IN INDONESIA: IN THE ERA OF HIV/AIDS

ISLAKHIYAH

A THESIS SUBMITTED IN PARTIAL FULFILLMENT
OF THE REQUIREMENTS FOR
THE DEGREE OF MASTER OF ARTS
(POPULATION AND REPRODUCTIVE HEALTH RESEARCH)
FACULTY OF GRADUATE STUDIES
MAHIDOL UNIVERSITY
2012

Thesis
entitled

DETERMINANTS OF CONDOM USE AS A TEMPORARY FAMILY PLANNING METHOD AMONG MARRIED MEN IN INDONESIA: IN THE ERA OF HIV/AIDS

……..
Miss Islakhiyah
Candidate

……..
Emeritus Prof.Aphichat Chamratrithirong, Ph.D.
Major advisor

…….
Assoc. Prof. Kusol Soonthorndhada, Ph.D.
Co-advisor

……
Prof. Banchong Mahaisavariya,
M.D., Dip Thai Board of Orthopedics
Dean
Faculty of Graduate Studies
Mahidol University

……..
Emeritus Prof. Aphichat Chamratrithirong, Ph.D
Program Director
Master of Arts Program in Population and
Reproductive Health Research
Institute for Population and Social Research
Mahidol University

Thesis
entitled

DETERMINANTS OF CONDOM USE AS A TEMPORARY FAMILY PLANNING METHOD AMONG MARRIED MEN IN INDONESIA: IN THE ERA OF HIV/AIDS

was submitted to the Faculty of Graduate Studies, Mahidol University
for the degree of Master of Arts
(Population and Reproductive Health Research)
on
August 16, 2012

……..…….....
Miss. Islakhiyah
Candidate

…….……...
Assoc. Prof. Rossarin Gray Ph.D.
Chair

……..……..…….....
Emeritus Prof. Aphichat Chamratrithirong, Ph.D.
Member

……
Mr. Philip Guest
Member

…….....
Assoc. Prof Kusol Soonthorndhada, Ph.D.
Member

……
Prof. Banchong Mahaisavariya,
M.D., Dip Thai Board of Orthopedics
Dean
Faculty of Graduate Studies
Mahidol University

…….....
Assoc. Prof. Sureeporn Punpuing, Ph.D.
Director
Institute for Population and Social Research
Mahidol University

ACKNOWLEDGEMENTS

Alhamdulillah, all the grateful prays are praised to Allah SWT, the Almighty and the Most Merciful, for all the glory, honor for being able to undertake and complete this course. It was my great privilege to work under the direct supervision of my advisor Emeritus Prof. Dr. Aphichat Chamratrithirong as his thesis student. Now, it is a great opportunity for me to express my sincere gratitude to him for taking keen interest in my thesis work and for his great patience in every stage of my thesis. I gratefully acknowledge to him for his guidance, invaluable advice, motivation and encouragement.

I am equally grateful to Assoc. Prof. Dr. Kusol Soonthorndhada, my co-advisor for her constructive comments, critical review and encouragement. In addition, I would like to be grateful to Dr. Philip Guest as my external examiner for his invaluable time in the process of thesis defense and for his academic advice. A special thank go to Assoc. Prof. Dr. Rossarin Gray, a chair of my thesis examination committee for her valuable comments and encouragement.

I would like to express my gratitude to all Ajarns of Institute for Population and Social Research (IPSR) and guest lecturers for their valuable teaching in their expertise fields as well as their guidance to improve my knowledge. Special acknowledgement is really due to Ms. Luxana for her endless support from the starting to ending of this program.

I am extremely thankful to my office Indonesia's National Population and Family Planning Board (BKKBN) for granting me this prestigious fellowship. I would like to express special thanks to Bapak Eddy Hasmi, Ibu Theodora Pandjaitan, Bapak Satrijo Pramono Hindarto, Ibu Retno Munfaati and all friends in BKKBN for their supportiveness.

Finally, my highest respect to my mother who was feelings my absence for the sake of my higher education. I would like to thanks to all my family who sacrificed their love, support and encouragement to my study in Mahidol University. The last and the most. I would like to dedicate my thesis to my father, Bapak Mushoddiq (Alm) and my mother, Ibu Nur'aini, who made my success achievable.

Islakhiyah

DETERMINANTS OF CONDOM USE AS A TEMPORARY FAMILY PLANNING METHOD AMONG MARRIED MEN IN INDONESIA: IN THE ERA OF HIV/AIDS

ISLAKHIYAH 5438709 PRRH/M

M.A. (POPULATION AND REPRODUCTIVE HEALTH RESEARCH)

THESIS ADVISORY COMMITTE : APHICHAT CHAMRATRITHIRONG, Ph.D.
KUSOL SOONTHORNDHADA, Ph.D.

ABSTRACT

Condoms are an effective barrier contraceptive method offering a dual role for preventing pregnancy and disease transmission. However, the major focus of condom promotion strategies has been on increasing their use for HIV prevention. This study aimed to determine the factors influencing condom use for family planning purposes among married men in Indonesia.

Using the 2007 Indonesia Demographic and Health Survey married men data set, probit logistic regression analysis was conducted for a sample of 895 married men, aged 20- 54, who had ever used a condom, did not use sterilization methods, and wanted no more children. Probit models examined factors influencing the decision for condom use as a contraceptive method among married men in general, and preference for condom use as a method of choice among married men who were contraceptive users. Path analysis was performed to test the hypothesized model that specifies relationships between all observed variables.

This study revealed that the low rate of condom use in Indonesia is significantly due to a lack of knowledge about family planning, low understanding on condom-specific knowledge and negative attitudes towards condom use. The study findings also revealed that knowledge of STDs had an indirect effect on condom use, through attitudes in favor of condom use among married men in general. Both HIV/AIDS and STDs knowledge had indirect effects on condom use through an attitude in favor of condom use among married men who already were contraceptive users. Moreover, barriers to condom use had both direct and indirect effects to decrease condom use. In addition, having had experience paying for sex with female sex workers significantly reduced use of condoms.

The findings suggest that policy implications should focus on promoting condom use at two levels. First, at community level, by emphasizing providing family planning knowledge and knowledge of STDs, to increase contraceptive use including condom use. Second, at the clinic level among married men who already are contraceptive users, putting stress on promoting the dual role of condoms, both for pregnancy prevention and HIV/AIDS and STDs prevention, by providing knowledge about HIV/AIDS and STDs.

KEY WORDS: CONDOM USE FOR FAMILY PLANNING/ DUAL ROLE OF CONDOM/ A TEMPORARY CONTRACEPTIVE METHOD CHOICE/ CONTRACEPTIVE USERS/ CONDOM BARRIERS

76 pages

CONTENTS

CONTENTS (cont.)

LIST OF TABLES

LIST OF TABLES (cont.)

LIST OF FIGURES

LIST OF ABBREVIATIONS

AIDS	Acquired Immune Deficiency Syndrome
AGFI	Adjusted Goodness of Fit Index
BKKBN	Badan Kependudukan dan Keluarga Berencana Nasional (National Population and Family Planning Board)
BPS	Badan Pusat Statistik (Statistics Bureau Indonesia)
CFI	Comparative Fit Index
CPR	Contraceptive Prevalence Rate
FSWs	Female Sex Workers
GFI	Goodness of Fit Index
HBM	Health Belief Model
HIV	Human Immunodeficiency Virus
ICPD	International Conference on Population and Development
IDHS	Indonesia Demographic and Health Survey
IUD	Intra Uterine Device
LPM	Linear Probability Model
NAC	National AIDS Commission
NFI	Normed Fit Index
NNFI	Non- Normed Fit Index
RMR	Root Mean Square Residual
RMSEA	Root Mean Square Error of Aproximation
SCT	Social Cognitive Theory
STDs	Sexually Transmitted Diseases
TRA	Theory of Reasoned Action
UNAIDS	Joint United Nations Programme on HIV/AIDS
WHO	World Health Organization

CHAPTER I
INTRODUCTION

1.1 Rationale

The Indonesian government embarked upon its family planning commitment in 1967. Over time, the government's commitment became one of the world's family planning success stories. Indonesia's population control program is considered to be one of the most successful, having contributed to bringing down the total fertility rate from nearly 6 when the program began in 1970 to 2.59 in 1999 (BPS, 1998 in Barnwal, A, 2004; Mize and Robey, 2006). However, the emphasis of Indonesian fertility control program is the female-centric program which reflecting family planning methods in Indonesia are widely used of female methods of contraception. This is highlighted by the steady decline in reported use of the men's family planning methods from total of 3.1 per cent of couples in 1987 to 1.9 per cent ten years later (Hull, 2002)

The assumption of women's primacy in fertility and contraceptive use has led to a general downplaying and often neglect of men's roles in studies of fertility and family planning. The focusing family planning program direct exclusively towards women will be one problem, where several of the reproductive health components, especially sexuality, human immunodeficiency virus/acquired immune deficiency syndrome (HIV/AIDS) and Sexually Transmitted Diseases (STDs) prevention, and infertility, require the participation from men actively (Ringheim, 1993; Sweetman, C. 2001).

Men play a significant role in reproductive health, including family planning. Men's participation is a promising strategy for addressing some of reproductive health problems. The majority of men's surveyed have expressed men's willingness to share the responsibility for family planning with their wives. However low level of male participation in family planning is clearly shows in many countries Many men reluctant to use family planning because the choice of male contraceptive

methods is so limited (Ringheim, 1993). In addition, the low of men contraceptive use is also due to many men do not considered themselves in need of family planning because most of the available methods are female-based (Hing, Cherry, & Woodwell, 2006).

The role of men in reproductive health be a large efforts because of the 1994 International Conference on Population and Development in Cairo, the result of that conference was emphasis that men should take their more responsibility for their family and social roles, sexual and reproductive behavior (United Nations, 1994). Men's responsibility in the rise of the global HIV/AIDS epidemic needed to decrease incidence of STDs through the use of condoms (Wegner, Landry, Wilkinson & Tzanis, 1998). Increasing condom use is a step toward changing men's behavior in a way that directly affects their own health, as well as the health of their wives

Since 1930s, condom have been available to prevent both pregnancy and sexually transmitted disease, but in most part of the world they have never been widely used (Lewis JH, 1972 in McNeill ET, et al., 1997). Worldwide, it is used by 5 per cent of couples as contraceptive methods. Variation in condom use among regions tends to be small. Condom prevalence is lowest in Africa (1 per cent), and slightly higher in Asia, (about 4 per cent) and highest in Europe (12 per cent) (United Nations, 2004).

At the country level, the condom situation almost similar. The condom is seldom among the contraceptive methods be the two highest prevalence levels. Only in Japan do three-quarters of contraceptive users rely on condoms. In China, Despite the fact that condom have been exclusively distributed in relation to contraception, it does not appear as a popular method of fertility regulation among couples. In a study of sexual behaviors among rural residents of China, it was concluded that just over 10 per cent of residents reported condom use for conception, (Liu H et al, 1998). According to China's current contraceptive use report, in 2006, the percentage of condom use as family planning method was 8.6 per cent (United Nations, 2011). In India, even though the second most requested modern method was condom, the percentage of condom use was 5.2 per cent, this proportion far behind the popular IUD at 43 per cent (United Nations, 2011).

In Indonesia, over 20 years, in contraceptive use has risen from 49 per cent in 1991 to 57 per cent in 2007. However this successful was not in line with condom use, condom were not a widely used method. Even though the knowledge of condom among married men is high, where 81 per cent married men know condom as a modern contraceptive method and 49 per cent of currently married men know that using condoms can reduce transmission of HIV/AIDS (IDHS 2007), the percentage of condom use still considered low, from 0.8 per cent in 1991 to 1.3 per cent in 2007 (IDHS 1991 & 2007). The trend of contraceptive prevalence rate and trend of condom use as family planning methods in Indonesia during 1991 to 2007 drawn in figure 1.1.

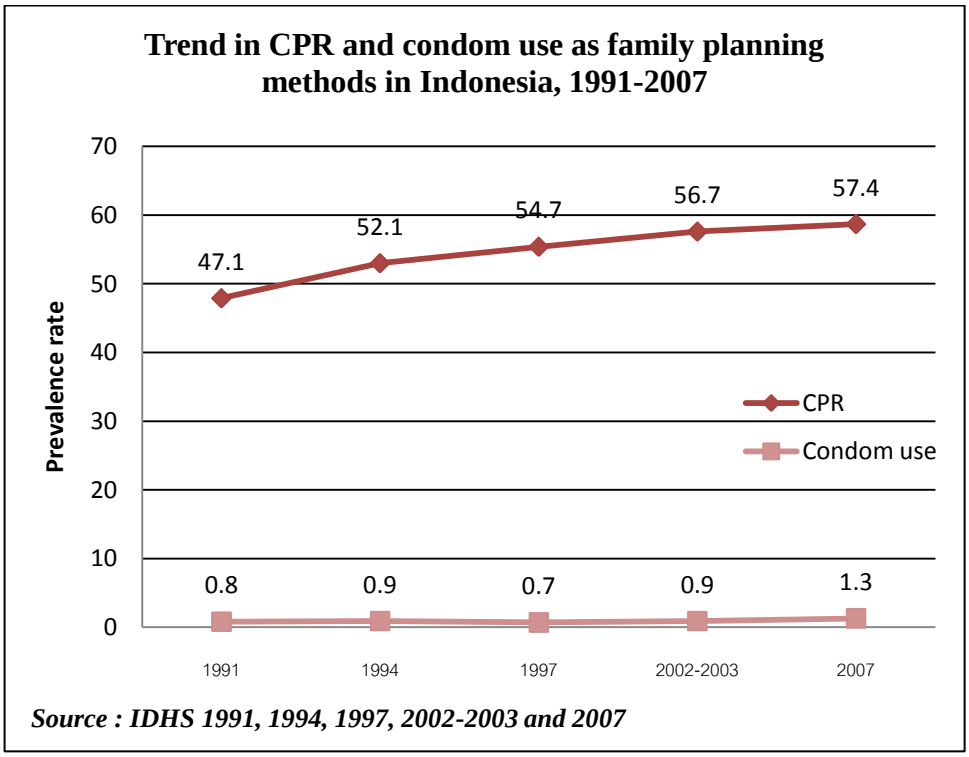


Figure 1.1 Trend in CPR and condom use as family planning methods in Indonesia, 1991-2007

Studies on condom have nearly always found that using condom is irregular and, in some cultures, frequent only during sex with prostitutes. Condoms are typically associated with diminished sexual pleasure (Population Reports, 1990; Kisekka, 1991; Caldwell et al., 1987). A man's identification of the condoms as a prophylactic against disease (Kirumira, 1991) is often viewed as a drawback to use

with his wife, because this may imply unfaithfulness or offend wife because of the association of condom use with prostitutes (Sekkade-Kigondu et al., 1991; Rwabukwali, 1991)

Since condoms promoted in Indonesia, according to Purdy (2002), country director for DKT international in Indonesia and involved in HIV/AIDS prevention and family planning work since 1991, The use of condoms continues to be very low among Indonesian people, this is because condom were associated with non-family planning activities as commercial sex, premarital sex and adultery. Moreover, the 2006-2007 NAC report stated, this low condom use has to do with the controversy over condom promotion.

Low condom use is very ironic in the era of HIV/AIDS. Men's sexual behavior puts women at risk. HIV is now spreading faster among married people than in any other group in Indonesia, many married men have sex outside marriage often without a condom, and such men represent an important "bridge" population between Female Sex Workers, --one of the population sub-groups in Indonesia in which the HIV/AIDS epidemic is currently concentrated-- and the general population, including wives. UNAIDS (2009) estimated that more than 90 per cent of the 1.7 million women living with HIV in Asia became infected from their husbands or partners while in long-term relationships. The Ministry of Health data showed that the number of AIDS cases in Indonesia in 2011 showed the highest record held by housewives, as many as 288 cases, and 2672 cumulative cases of AIDS since 1987 until 2011.

The crucial role of condom in protecting against STDs, as well as its growing importance as a contraceptive, argue for continued research on condom use, even though the data are limited. Up to date information on condom use and analysis of factor related to these behaviors, are needed to assess the impact of the constellation of factors that affect condom use, changes in social attitude, education and information efforts, as well as more targeted intervention programs. Such research can also help guide policy on further steps to increase condom use and dual methods use. (Bankole, et al., 1999)

In this study, examining the using of condom as a temporary family planning methods among married men based on data 2007 IDHS to address question :

What factors that determine the use of condom as a temporary family planning methods among married men in Indonesia, in the era of HIV/AIDS?

1.2 Research objectives

This study aimed to:

1.2.1 To analyze the influence of demographic factors, knowledge on family planning, condom-specific knowledge, knowledge on HIV/AIDS and STDs, attitude in favor to condom use, the barrier of condom use and sexual risk behavior on preference condom use as a temporary family planning methods among married men in general and among married men who are contraceptive users.

1.2.2 To examine the structural relationship among demographic factors, knowledge on family planning, condom-specific knowledge, knowledge on HIV/AIDS and STDs, attitude in favor to condom use, the barrier of condom use and sexual risk behavior on condom use as a temporary family planning methods among married men in general and among married men who are contraceptive users.

CHAPTER II
LITERATURE REVIEW

This chapter presented the review of the theoretical and empirical literatures that contribute to the concept in the study model and the relationship among these concepts. The purpose of this literature review is to identify our present knowledge as well as gap in our knowledge about condom use and the pathways to condom use.

2.1 Theoretical Background of the Study

To explain and determine what factors affecting condom use for family planning purposes among married men in Indonesia, this study adopted The Health Belief Model, Theory Reasoned Action and Social Cognitive Theory as theoretical approach which is implemented in the conceptual framework.

2.1.1 The Health Belief Model (HBM)

The Health Belief Model (HBM) is a psychological model that attempts to explain and predict health behaviors by focusing on the attitudes and beliefs of individuals. The HBM was developed in the 1950s as part of an effort by social psychologists in the United States Public Health Service to explain the lack of public participation in health screening and prevention programs. Since then, the HBM has been adapted to explore a variety of long and short-term health behaviors, including sexual risk behaviors and the transmission of HIV/AIDS. (Rosenstock I, Strecher, V. and Becker, M. 1994).

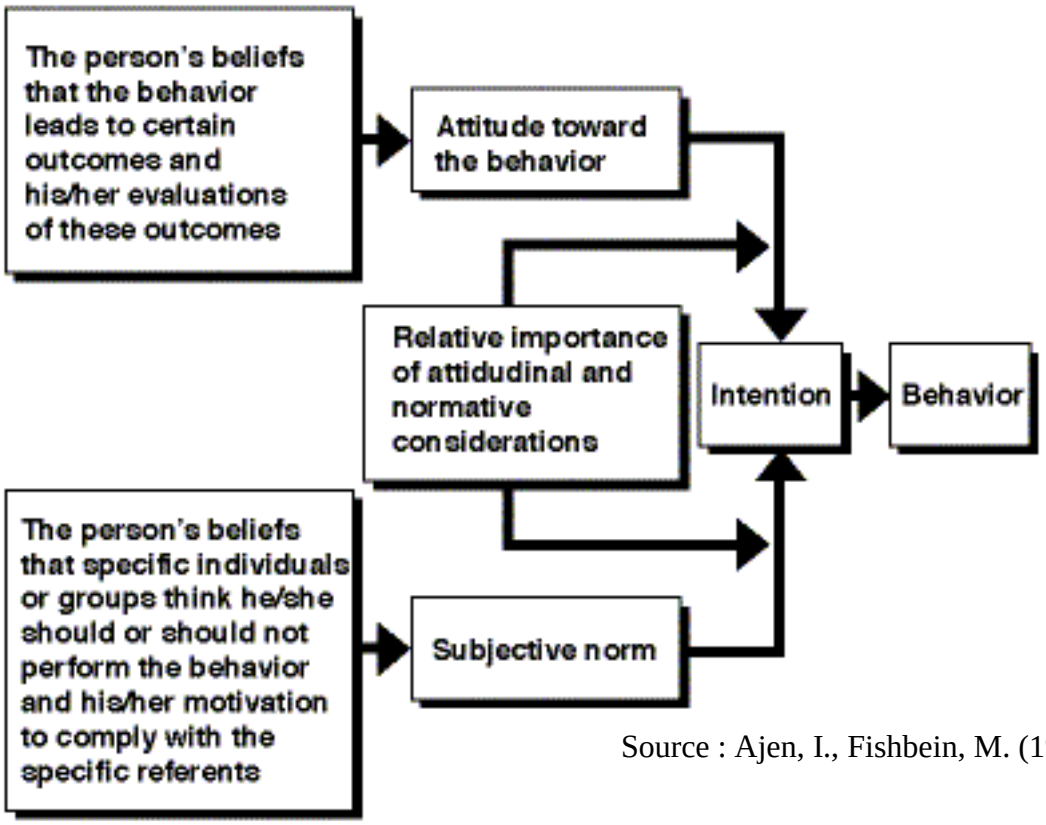
In a literature review of all HBM studies published from 1974-1984, the authors identified, across study design and population, perceived barrier as the most influential variable for predicting and explaining health-related behaviors (Janz and Becker, 1984). Other significant HBM dimensions were perceived benefits and

susceptibility, with perceived severity identified as the least significant variable. More recently, researchers are suggesting that an individual's perceived ability to successfully carry out a "health" strategy, such as using a condom consistenly, greatly influence his/her decision and ability to enact and sustain a changed behavior (Bandura, 1989)

2.1.2 Theory of Reasoned Action (TRA)

Research using the Theory of Reasoned Action (TRA) has explained and predicted a variety of human behaviors since 1967. Based on the premise that humans are rational and that the behaviors being explored are under volitional control, the theory provides a construct that links individual beliefs, attitudes, intentions, and behavior (Fishbein, Middlestadt and Hitchcock, 1994). The theory variables and their definitions, as described by Fishbein et al. (1994) were:

a. Behavior: A specific behavior defined by a combination of four components: action, target, context, and time (e.g., implementing a sexual HIV risk reduction strategy (action) by using condoms with commercial sex workers (target) in brothels (context) every time (time).
b. Intention: The intent to perform a behavior is the best predictor that a desired behavior will actually occur. In order to measure it accurately and effectively, intent should be defined using the same components used to define behavior: action, target, context, and time. Both attitude and norms, described below, influence one's intention to perform a behavior.
c. Attitude: A person's positive or negative feelings toward performing the defined behavior.



Source : Ajen, I., Fishbein, M. (1980)

Figure 2.1 Theory of Reasoned Action

d. Behavioral Beliefs: Behavioral beliefs are a combination of a person's beliefs regarding the outcomes of a defined behavior and the person's evaluation of potential outcomes. These beliefs will differ from population to population. For instance, married heterosexuals may consider introducing condoms into their relationship an admission of infidelity, while for homosexual males in high prevalence areas it may be viewed as a sign of trust and caring.

e. Norms: A person's perception of other people's opinions regarding the defined behavior.

f. Normative Beliefs: Normative beliefs are a combination of a person's beliefs regarding other people's views of a behavior and the person's willingness to conform to those views. As with behavioral beliefs, normative beliefs regarding other people's opinions and the evaluation of those opinions will vary from population to population

The TRA provides a framework for linking each of the above variables together. Essentially, the behavioral and normative beliefs –referred to as a cognitive structure–influence individual attitudes and subjective norms, respectively. In turn, attitudes and norm shape a person intention to perform a behavior. Overall, The TRA model supports a linear process in which changes in an individual's behavioral and normative beliefs will ultimately affect the individual's actual behavior (Julie Danison, 1996)

2.1.3 Social Cognitive Theory (SCT)

The premise of the social cognitive or social learning theory (SCT) states that new behaviors are learned either by modeling the behavior of others or by direct experience. Social learning theory focuses on the important roles played by vicarious, symbolic, and self-regulatory processes in psychological functioning and looks at human behavior as a continuous interaction between cognitive, behavioral and environmental determinants (Bandura, 1977). Central tenets of the social cognitive theory are:

a. Self-efficacy – the belief in the ability to implement the necessary behavior ("I know I can insist on condom use with my partner")
b. Outcome expectancies - beliefs about outcomes (such as the belief that using condoms correctly will prevent HIV infection)

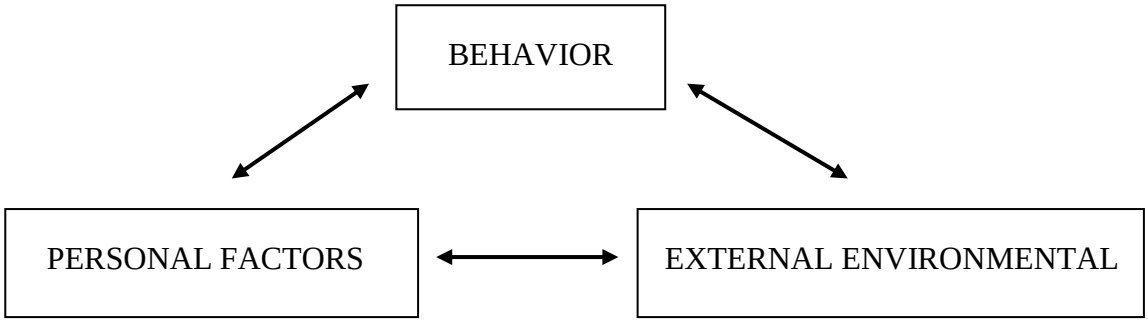


Figure 2.2 Social Cognitive Theory (Bandura, 1977)

2.2 Men's attitude and participation: approaches in better reproductive health

Traditionally, women have been seen as the primary actors in reproduction and contraception. The focus of family planning program on women was justified on the grounds that it is women who become pregnant and it is for women that most modern contraceptives have been designed. (M. Drennan, 1998).

The 1994 International Conference on Population and Development in Cairo produced a Program of Action aimed primarily at the improvement of women's reproductive health. This was understandable given global levels of maternal morbidity and mortality, and the fact that the dominant technologies for birth control are designed for use by women. Certainly the health promotion messages of ICPD can be read as injunctions equally relevant for women and men, but the tone of the document, and the scope of reproductive health issues canvassed give little direct consideration to issues of sexuality and reproductive health from a male perspective. For this reason efforts to implement the ICPD agenda are largely also framed in terms of women's needs and male responsibilities. (Hull, T.H and Budiharsana, M. 2001).

Men play a powerful and even dominant role in reproductive decisions sometimes regardless of their partner's wishes or the health consequences to themselves or their partners. For these reasons, it is important to direct the action of health program to healthy male sexual behavior (Lasee A and Becker S. 1997).

The Indonesian family planning program has long called for the involvement of men to promote contraceptive use by women. It has not been able to engage men to take a personal interest in adopting male methods, nor been able to develop a broader range of services addressing male reproductive health issues in ways that promote gender equity. Engaging and serving men's reproductive health needs requires more than an effort to educate men to their responsibilities for their partners and offspring. The reproductive health program must recognize men's reproductive health needs and provide appropriate services to promote their personal reproductive health. Done correctly this offers an effective means of encouraging them to assist in meeting the reproductive health needs of their partners. (Hull and Budiharsana, 2001)

2.3 Family Planning and condom use prevalence in the Era of HIV/AIDS

In the recent times, there has been a remarkable increase in the prevalence of contraceptive use. While use of modern contraceptives has been somewhat successful in preventing unwanted pregnancy and allowing individuals to enjoy sexual intercourse, it has not been so successful in preventing HIV/AIDS. The twin risk of unwanted pregnancy and HIV/AIDS infection is a central concern of reproductive health programs. (Bauni, E.K and Obonyo, B. 2000)

One of the most important effects of the broadening of family planning programs to address reproductive health has been the recognition of sexually transmitted diseases as a priority for education, diagnosis and treatment. The development of syndromic approaches has increased the potential of primary care facilities to deal with gonorrhea, chlamydia, and trichomoniasis (Wasserheit and K.K. 1992 in Hull and Budiharsana, 2001).

Currently, condoms are the most effective barrier method because they can be used for disease prevention in conjunction with other methods, or alone for the dual purpose of protecting against pregnancy and disease transmission (FHI, 1998 in Bauni and Obonyo, 2003).

Condom use is a critical element in comprehensive, effective and sustainable approach to HIV prevention and treatment. The male latex condom is the single most efficient available technology to reduce the sexual transmission of HIV and other STDs (WHO, 2004). More-over, correct and consistent condom use offers the best protection against HIV and other STDs after abstinence and mutual monogamy, since the consistent and correct use of condoms reduce the risk of HIV infection, (Ashebir, 2004).

Based on 1998 in-depth interviews on family planning and gender relations, husbands and wives talk about contraception for the purposes of child spacing and family size limitation but not for STDs prevention. Condom is rarely the focus of spousal, in the few conversations where the condom is mentioned, AIDS is the contentious issue.

Study in United States explored couple who want add additional children were more likely than other couple to use condom along with a systemic method. (Bankole, Akinrinola, et.al., 1999)

2.4 Previous studies related to factors influence condom use

2.4.1 Demography characteristic and condom use

Age and condom use. Factors associated with condom use and with relatively positive attitudes to condom for men were younger age (<35), having had extramarital activity or multiple partners in the last six months, and not having a steady partner (Bertrand JT et, al, 1991). In Kenya, Condom use among younger aged men is highest than older age men and declines significantly among those over 30 years of age (KDHS, 1998)

In Additional, a study on condom use within marital and cohabiting partnerships in KwaZulu-Natal, South Africa, the young age group recorded a higher level of condom use than did the older age group (Maharaj & Cleland, 2004)

Education level and condom use. Condom use also increase with educational attainment. Men with higher level of education more likely to have used condom than were men with no formal education (Waithaka M & Bessinger R, 2001)

The result of research in KwaZulu, south Africa conform to the expectation that educated populations have greater exposure to have higher propensity to condom use. (Maharaj & Cleland, 2004).

However, study in Zaire established that neither SES, education, nor urban residence showed any association with condom attitudes (Bertrand JT et, al, 1991).

Place of Residence and condom use. There is no significant differences in condom use are seen by residence, no differences are seen by urban and rural area (Waithaka M & Bessinger R, 2001), however, a study in Vietnam in 2006 showed that the percentage of condom use among men and women in remote and mountains area is

very low. Among men using of condom use in recent time was 8.8 percent in Dong Nai Province and less than 1 percent in Cao Bang Province (WB, 2007).

A report from World Bank in 2006 in Sri Lanka provided some information about condom use prevalence in rural and urban area. It found that the place of residence related condom use, only 4.7 percent of men in rural area and 9.6 percent of men in urban area of Colombo reported ever using condoms (World Bank, 2006)

2.4.2 The knowledge on family planning, condom specifics and HIV/AIDS and STDs awareness and condom use among married men

An evidence from twelve FGDs in Nakuru district, Kenya, demonstrated that knowledge about condoms was widespread, but their acceptability and use was limited, particularly within marriage. The use of condom as a method of family planning and a response to the twin risk of unwanted pregnancy and STDs, including HIV/AIDS, was rejected by all men groups and just one group of men pointed out that men resist using condom in marriage but are ready to and actually use them in sexual contact out of marriage (Bauni E. K. and Obonyo J. B., 2003)

While the knowledge of condoms use is widespread and the HIV/AIDS source known among married couple, it has not spurred adequate drive to raise the level of condom use. For example, only 17 percent of the respondents at risk of HIV were currently using condoms leaving a high 83 percent engaging in risky sexual relations; and that 43 percent of those who were not currently using a condom and who also had multiple sex partners, had never used a condom during their extra-marital affairs (Bauni and Obonyo, 2000)

2.4.3 Attitude in favor to condom use, barrier on condom use and sexual risk behavior

Attitude in favor to condom use. A study in Nakuru district, Kenya discovered that most of the respondent held some negative attitudes towards condom use, 67 percent of the married respondent agreed that condom encourage promiscuous behavior, and 56 percent agreed that the only reason to use condom is because one does not trust the partner. (Bauni E. K. and Obonyo J. B., 2003).

Most studies have found that positive attitudes about condom are strongly predictive of use (Abdool-Karim et al. 1992 ; kapiga et.al. 1995). Men with positive attitude to condom use were more likely to have used condoms and to cite condom as a means of HIV prevention (Bertrand, JT, 1991).

Barrier on condom use. A study in Egypt explored some barrier on condom use, 32 percent thought that condom use may be associated with harmfull effects, 58 percent believe that their partner might possibly reject condom use and 53.1 percent reported that they would be embarrassed to buy condom (Kabbash, et al., 2007)

Likewise, a result of study in Kinshasa, Zaire demonstrated that male respondent believe that condoms tear easily during sexual intercourse, that they can stay in the vagina after sex, and they diminish sexual pleasure (Bertrand, JT, 1991).

Changanti in 1994 observed that for most married men, condom were associated with outside partners hence should be used only for casual sex and with prostitutes.

Sexual risk behavior The study result on condom use in four countries in East and Southern Africa echo what is known about condom use behavior, that is more common in riskier situation (e.g., sex with multiple partners or with non marital partners). However condom use was relatively high, in Namibia and Swaziland, between one-quarter and one-third of men reported non-use of condoms at last sex with non marital partners. In Tanzania and Zambia, only about one-half of men used condom at last sex with non-marital partners.

2.5 Conceptual Framework

The conceptual framework in this study is adopted from explanatory models of health behavior. They are Health Belief Model and Theory Reasoned Action. Perceived barrier as the most influential variable for predicting and explaining health-related behaviors is constructed from Health Belief Model, while the Theory Reasoned Action provides a construct that links individual beliefs, attitudes and

behavior. Social Cognitive Theory give cognitive dimension which is an important determinant to build new behavior.

The outcome of interest for this study is current condom use as temporary family planning methods. This study expects that condom use for family planning is influenced by socio demographic factors, such age, education, place of residence, knowledge on family planning, condom-specific knowledge, knowledge on HIV/AIDS and STDs, attitude in favor to condom use, barrier on condom use and sexual risk behavior by having experience paid sex.

Based on the literature review and its findings, this study constructed the conceptual framework as shown in Figure 2.3.

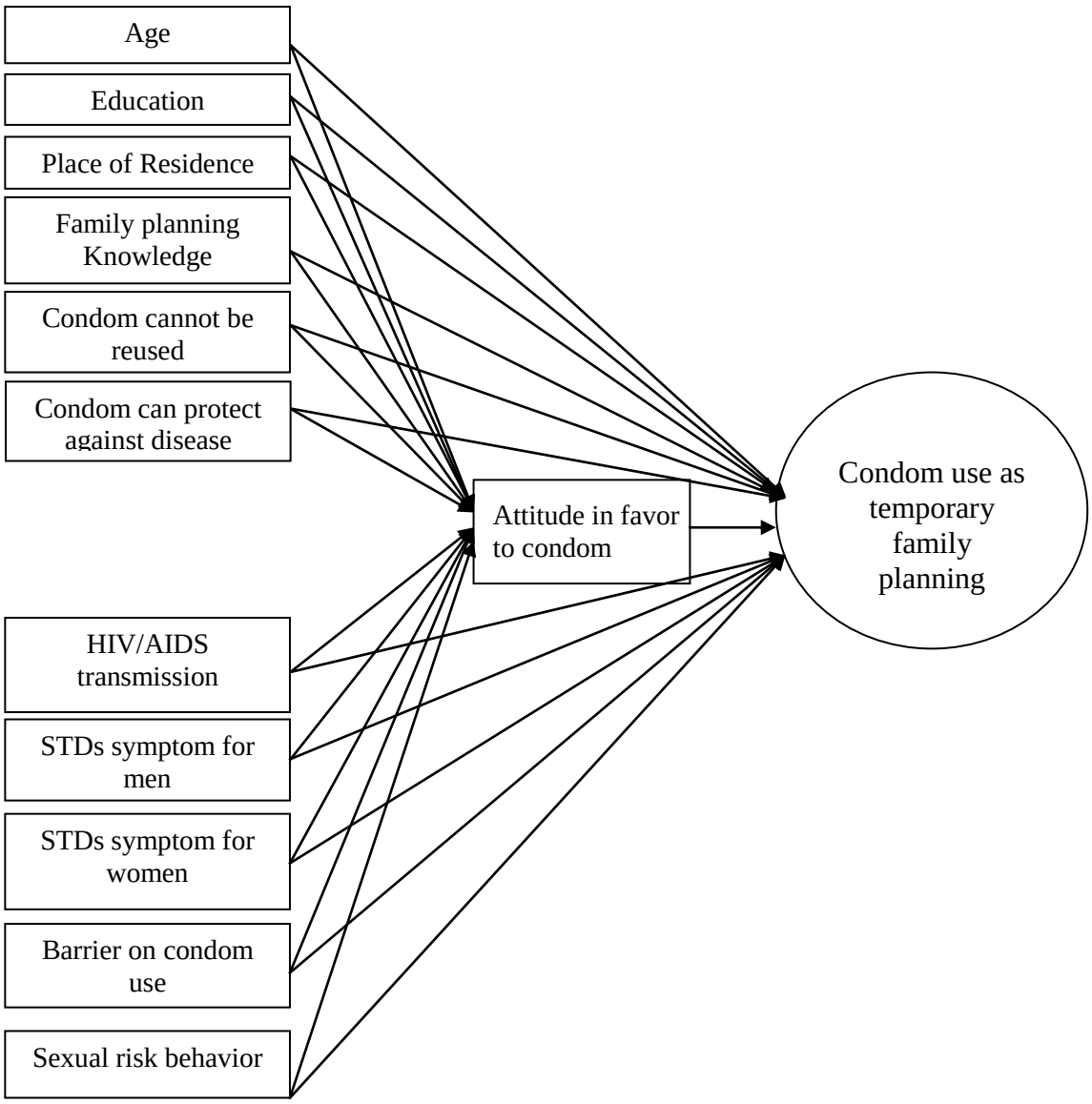


Figure 2.3 Conceptual framework for determinants of condom use as a family planning method among married men in Indonesia

2.6 Hypothesis

H1: Demographic characteristics have a relationship on condom use

H2: Knowledge on family planning, condom-specific knowledge and knowledge on HIV/AIDS and STDs and attitude in favor of condom use have positive relationship on using condom

H3: Barrier on condom use have negative relationship on using condom

H4: Sexual behavior with have experience paid sex with female sex workers have positive relationship on using condom

H5: Demographic factors have direct effect on condom use and indirect effect through attitude in favor to condom use

H6: Knowledge on family planning, condom-specific knowledge and knowledge on HIV/AIDS and have direct effect on condom use and indirect effect through attitude in favor to condom use

H7: Attitude in favor to condom use have direct effect on condom use

H8: Barrier on condom use have direct effect on condom use and indirect effect through attitude in favor to condom use

H9: Sexual behavior with have experience paid sex with female sex workers have direct effect on condom use and indirect effect through attitude in favor to condom use

CHAPTER III
RESEARCH METHODOLOGY

3.1 Type of Study

This study is a cross sectional studies aim to determine relationships between the independent variables with the dependent variable. The data used are secondary data from The 2007 Indonesia Demographic and Health Survey (IDHS) was conducted by the Central bureau Statistics (BPS) every four years. The survey part of an international program of demographic and health survey designed to collect data on fertility, family planning, maternal and child health, maternal mortality, and awareness of AIDS/STDs.

The questionnaire in the 2007 IDHS used three questionnaires: the Household Questionnaire (HQ), the Ever-Married Women's Questionnaire (EMWQ) and the Married Men's Questionnaire (MMQ). The 2007 IDHS sample is designed to obtain national estimates, urban and rural areas and provinces. The survey interviewed 40,701 households, 32,895 were ever or currently married women, and 8,758 were currently married men.

3.2 Sample in the Study

The sample study is currently married men age 15-54. In IDHS 2007 in a third of the households, 9,716 eligible men were identified, of which 8,758 were successfully interviewed, yielding a response rate of 90 percent. The lower response rate for men was due to the more frequent and longer absence of men from the household.

This study focuses on married men who ever used condom included 1,081 married men and from these married men we excluded 6 those who use male sterilization and 33 those whose wife use female sterilization and 147 those who still want more children, and the sample size dropped to 895 married men.

3.3 Data Analysis

Data analysis included several steps. First, descriptive statistics is calculated for all variables in the analysis. Second bivariate analysis (chi square and t-test) is performed to examine the association of condom use with the determinant variables (demography characteristics, the knowledge on family planning, condom-specific knowledge, HIV/AIDS and STDs knowledge, attitude and barrier and sexual risk behavior).

Multivariate analysis using probit logistic regression is used to estimate effects of each independent variable on condom use. According to Nagler (2002), probit model constrains the estimated probabilities to be between 0 and 1 and relaxes the constraint that the effect of the independent variable is constant across different predicted values of the dependent variable. This is normally experienced with the Linear Probability Model (LPM). The probit model assumes that while we only observe the values of 0 and 1 for the variable Y, there is a latent, unobserved continuous variable Y* that determines the value of Y. The other advantages of the probit model include believable error term distribution as well as realistic probabilities (Nagler, 1994). Thus, for this study the probit model is preferred and used. For step one to three, data was analyzed statistically using STATA 11.5.

Further analysis through path analysis was performed to investigate causal relationships between all observed variables (presented in figure 2.3) using Lisrel 8.7. These analysis used the maximum likelihood method of parameter estimation and were performed on the covariance matrix. Standardized coefficients for all paths were estimated. The fit of the path model to the data was assessed using absolute and comparative fit indices. Absolute fit indices are based on the discrepancies between the covariance matrix of the data and the covariance matrix implied by the model. The absolute fit indices used in this study included the x^2 and root mean square error of approximation (RMSEA). Comparative fit indices are based on the comparison of the hypothesized model to a null model where no paths are included. The comparative fit index (CFI) and non-normed Fit Index (NNFI) were used to evaluate model fit in this study. Acceptable model fit is determined by a x^2 value close to zero,

a probability value greater than 0.05, an RMSEA less than 0.08, and values of CFI and NNFI greater than 0.90.

3.4 Operationalization of Variables

Categories of main variables are converted to sub-variables with a binary outcome for the sake of technique in data analysis

Measurement of Condom Use Variable as Dependent Variable

Condom use was measured as reported current use of condom as temporary family planning method. The model that we estimated have a dependent variable with two categories; use condom and not use condom (use other temporary family planning methods and not use any family planning method).

Table 3.1 Descriptions of dependent variable

Variable	Labels
Condom Use	1 = Use condom 0 = Not use condom - Use other temporary Family Planning Methods (Pill, IUD, Injectables, Implant, Intravag/Diapraghm, Lactational Amenorrhea Method, Periodic Abstinence, Withdrawal, Others) - Not use any family planning methods

Measurement of Demographic Factors as Independent Variable

We considered a number of demographic characteristics that were measured in the IDHS which relevant in this analysis of condom use.

Age of Respondent : measured by the number of years lived at the time of interview (interval scale)

Level of education : the level of attainment in formal education by the individuals, measured by ordinal scale and categorized into three groups as less than and completed primary education , secondary education, and higher secondary.

Place of residence. The place of residence is the place where married men lived and it is classified into two categories: urban = 1 and rural = 0

Measurement of Knowledge, Attitude and Barrier on condom use as independent variable

Family planning knowledge. A score is developed as a composite variable based on knowledge of family planning on 1) whether the respondents know about female sterilization, 2) male sterilization, 3) Pill, 4) IUD, 5) Injectables, 6) Norplant/Implant, 7) Condom, 8) know a place to obtain family planning methods, 9) know the correct time of women's fertile period, 10) know that a women can become pregnant if she has sexual relations. A score of one assigned for each correct answer to these questions, giving possible score from 0 to 10 with higher score reflecting higher knowledge on family planning

Condom-specific knowledge. Two variables were developed to measure knowledge on condom-specific, they were:1) knows that condom cannot be reused (agree vs. otherwise), 2) knows that condom can protects against diseases (agree vs. otherwise). Both of variable measured by nominal scale, agree =1, otherwise (include disagree and do not know) = 0

HIV/AIDS and STDs. A score is composed on three type of knowledge (knowledge on HIV/AIDS transmission and knowledge on STDs symptom for men and STDs symptom for women). The composite measure was supposed to range from 0 – 8, 0-12 and 0-12 respectively, with higher score reflecting higher knowledge on HIV/AIDS and STDs awareness.

Attitude in favor to condom use. A score of married men's attitude regarding their agreement or disagreement was assessed with three measures, consisted of 1) condom diminish sexual pleasure, 2) condom is very inconvenient to use, 3) A women has no right to tell a man to use a condom. A summation score of one being given for each affirmative response. Values ranged from 0 to 3. It is assumed that men who express agreement of the statement are likely to be in negative attitude toward condom.

Barrier on condom use. A score indicating the magnitude of problems with condom use is developed based on the response of married men to whether they ever have experienced any problem with using condom. The problems include the following : 1) too expensive, 2) embarrassing to buy/obtain, 3) difficult to dispose of, 4) difficult to put on/take off, 5) spoils the mood, 6) diminishes the pleasure, 7) wife does not like, 8) wife got pregnant, 9) inconvenient to use/messy, 10) condom broke, 11) other problem. The score range from 0 to 11, with the higher score indicating a higher level of barrier on condom use

Measurement of sexual risk behavior as independent variable

Sexual risk behavior. A question were asked to measure the pattern of condom use among married men for family planning purposes with their wives when they have experience paid sex with female sex workers (FSWs). It was measured with nominal scale, ever experience paid sex = 1, and never experience paid sex = 0.

3.5 Limitation of the study

The study used secondary data which consequently restricted the analysis to the data that was made available. This study was not able to reach all married men sample in the survey, specifically married men who never used condoms as family planning methods since the questionnaire on detail of condom use were designed for answered just by married men who ever used condom, which married men who ever use condom reported in 2007 IDHS was 13.2%. Moreover, this study

was not able to address all factors that influence on condom use for family planning, since there many important factors not available in the data.

CHAPTER IV
RESULT

This chapter consists of four sections. The first section describes the general sample characteristics, specified by demographic characteristics, knowledge on family planning, condom-specific knowledge, knowledge on HIV/AIDS transmissions and STDs symptoms, attitude in favor to condom use, barrier on condom use, sexual risk behavior and the using of condoms.

The second section presents the association among variables in the analytical model with condom use by performing t-test and Pearson chi-square. The third section explores the result of probit model which examined the relationship between married men's characteristics and condom use which reported as temporary family planning methods among married men in general and among married men who were contraceptive users. The last section presents the result of path analysis which investigated structural relationship among exogenous variables included such demographic characteristics as age, education level and place of resident, as well as knowledge on family planning, condom-specific knowledge, knowledge on HIV/AIDS and STDs symptoms, barrier on condom use and sexual risk behavior among married men. Two endogenous variables included in the model, which are attitude in favor to condom use and condom use as temporary family planning methods. The hypothesis model also be applied both for married men in general and married men who are contraceptive users.

4.1. Sample characteristics

4.1.1. Demographic characteristics

Table 4.1 shows that the study population consisted of married men with an average age of 39 years old (median 39; mode 41), ranging from 20-54 and

standard deviation is 8.00. Regarding of education level, the majority of married men (44.8%) completed secondary level of education, followed by one in three married men (32.1%) had less than and completed primary education and two out of nine (23.1%) have higher educated. In case of place of residence 70.3% of selected respondents live in urban areas while 29.7% live in rural areas.

Table 4.1 Sample characteristics by demographic characteristics (N=895)

Characteristic	Percentage	Mean (SD*)
Demographic factors		
Age (years)		38.57 (8.00)
Education		
Less than and completed primary	32.1	
Secondary	44.8	
Higher secondary	23.1	
Place of Residence		
Rural	29.7	
Urban	70.3	

*SD = Standard Deviation

4.1.2. Knowledge, attitude and barrier on condom use

The family planning knowledge measured by composite variable with range 0-10 shows result that most of married men aware on family planning. The mean score of family planning knowledge is 7.8 (SD =1.795), means that married men know 7 to 8 from 10 indicators of family planning knowledge

Regarding the knowledge on condom-specific, 95.5 % of married men agree that condom cannot be reused and only 4.5 % disagree and did not know that condom cannot be reused. Most of married men (90.3%) agree that condom can protects against disease, while 9.7 % disagree and did not know that condom can protects against disease.

Furthermore, regarding the knowledge on HIV/AIDS, 70% of married men know 6 or more indicators of HIV/AIDS transmission and only 5.4% who did not

know about HIV/AIDS transmission. The mean score of knowledge on HIV/AIDS is 5.95 (SD = 1.939), In terms of knowledge on STDs, the majority of married men (50%) known 1 to 2 STDs symptom for man and 32.5% did not know STDs symptom for man (mean = 1.40, SD = 1.340). In case of STDs symptom for woman, Most of married men (71.2%) did not know STDs symptom for women, only one in four married men know 1 to 2 STDs symptom for women. The mean score of knowledge on STDs symptom for women was 0.48 (SD =0.877) and maximum score of this composite variable is 5 in range 0-12.

Table 4.2 Sample characteristics by knowledge on family planning, condom-specifics, HIV/AIDS and STDs, attitude and barrier on condom use (N=895)

Characteristic	Percentage	Mean (SD*)
Knowledge		
Family planning indicators (0-10)		7.87 (1.80)
Condom-specific indicators		
Condom cannot be reused		
Agree	95.5	
Otherwise	4.5	
Condom protects against disease		
Agree	90.3	
Otherwise	9.7	
HIV/AIDS and STDs indicators		
HIV/AIDS transmission (0-8)		5.95 (1.939)
STDs symptom for man (0-12)		1.40 (1.340)
STDs symptom for woman (0-12)		0.48 (0.877)
Attitude score (0-3)		1.28 (0.959)
Barrier score (0-11)		0.56 (0.754)

*SD = Standard Deviation

In terms of attitude in favor to condom use among married men, possible score range 0 to 3 with higher score indicating positive attitude to condom use. The

average of attitude score on condom use is 1.28 (SD =0.959), it means that the attitude of married men in favor to condom use are in medium level.

Possible score range 0-11 representing barriers on condom use were met by respondents. Result in table 4.2 also shows that more than half of married men (58%) mentioned they did not have any problem on condom use. Mean score of the composite variable of barrier on condom use is 0.56 and SD= 0.754 and the maximum barrier score on condom use which indicating the most problems they ever met were 4.

4.1.3. Sexual risk behavior

The way in which married men described their sexual risk behavior illustrated in Table 4.3. One in seven (16.9%) of married men ever experience of paid sex in the last 12 months, and 83.1% of married men never experience paid for sex.

Table 4.3 Sample characteristics by sexual risk behavior (N=895)

Sexual risk behavior	Percentage
Ever experience paid sex	16.9
Never experience paid sex	83.1
Total	100.0

4.1.4. Condom Use

Table 4.4 describes current use of condoms for family planning purposes among married men who ever used condom in Indonesia. Twenty two per cent of married men stated they used condom as temporary family planning methods, where 17.0% of them used condom only and 8% used condom with other temporary methods.

Seventy eight percent of married men who ever used condom stated they do not use condom as current family planning methods, among them 61.7% used other temporary methods but no condom and 16.6%of married men did not use any methods of family planning.

Table 4.4 Percentage distributions of married men by condom use (N=895)

Condom Use	Percentage
Use condom	**21.7**
Condom only	17.0
Condom with other temporary methods	4.7
Not use condom	**78.3**
Other temporary methods but no condom	61.7
No method at all	16.6
Total	100.0

4.2. Bivariate Analysis

Table 4.5 presents the relationships between demographic characteristics, knowledge on family planning, condom specific knowledge and knowledge on HIV/AIDS and STDs, attitude in favor to condom use, barrier on condom use, and sexual risk behavior and condom use. In regards to age, mean age of married men who use condom as current family planning methods and those who not use condom almost similar (38 and 39 years old respectively). The t-test has been done to find out the association between age and condom use and it was found that age is not significant with condom use.

In regards to education level, the majority of married men who use condom had a higher education, most of them completed higher secondary (26.1%) compared to those who not use condom. Among those who did not use condom, most of them had lower level of education, eighty two percent of them just have less than and completed primary education. However, Pearson chi square found that there is no association that has occurred in terms of condom use by education level.

In terms of place of residence, married men from urban area have higher percentage of using condom (23.2%) than those from rural area (18.1%). Chi-square test found that there is no association between place of residence and condom use.

Regarding to knowledge on family planning, married men who use condom have higher mean score of knowledge on family planning (8.11) compared to

those who not use condom (7.80). Performing of t-test, the result shows significant association between knowledge on family planning and condom use.

Similarly, the knowledge on condom-specific by knowing condom cannot be reused also show significant association with condom use. However, interesting findings occurred, the percentage of married men who know condom cannot be reused is higher among those who not use condom (77.5%) than who use condom (22.5%).

Surprisingly, t-test found there is no association between knowing that condom can protect against disease with condom use. Similar result found between knows condom can protect against disease with knows condom cannot be reused, the percentage of married men who know condom can protect against disease is higher among those who not use condom (78.2%) than who use condom (21.8%).

In terms of knowledge on HIV/AIDS transmission, the result shows that mean score of knowledge on HIV/AIDS transmission reported by condom user compared to non user almost similar (6.14 and 5.89 respectively). The t-test found that there is no association between knowledge on HIV/AIDS and condom use.

Similar with knowledge on HIV/AIDS, the result show that the knowledge on STDs awareness by knowing STDs symptom for men and women are almost similar between condom users and non user. The mean score of knowledge on STDs symptom for men by both condom users and non user are 1.40. While the mean score of knowledge on STDs symptom for women by condom user is 0.49 and non user is 0.48. The t-test also found that there is no association between knowledge on STDs symptom and condom use.

Regarding on attitude in favor to condom use, the mean of positive attitude score on condom use reported by condom user is a bit higher at 0.04, while non user reported the mean score at 0.03. The t-test has been done to look at association between attitude towards condoms and condom use, the result showed there is a significant association between attitude in favor of condom and condom use.

Table 4.5 Percentage distributions and mean of married men according to condom use by demographic characteristics, knowledge, attitude, barriers and sexual risk behavior

Characteristic	Use condom (n=194)	Not use condom (n=701)	P-value
Demographic factors			
Age (years)[a]			
Mean	38.19	38.68	0.443
Education (%)[b]			
Less than and completed primary	19.2	80.8	0.174
Secondary	21.2	78.8	
Higher secondary	26.1	73.9	
Place of Residence (%)[b]			
Rural	18.1	82.0	0.086
Urban	23.2	76.8	
Knowledge			
Family planning indicators (0-10) [a]			
Mean	8.11	7.80	0.033
Condom-specific indicators			
Condom cannot be reused (%)[b]			
Agree	22.5	77.5	0.009
Otherwise	5.0	95.0	
Condom protects against disease (%)[b]			
Agree	21.7	78.3	0.814
Otherwise	20.7	79.3	
HIV/AIDS and STDs indicators			
HIV/AIDS transmission (0-8) [a]			
Mean	6.14	5.89	0.110
STDs symptom for man (0-12) [a]			
Mean	1.40	1.40	0.991
STDs symptom for woman (0-12) [a]			
Mean	1.63	0.48	0.910
Attitude score (0-3) [a]			
Mean	1.18	1.63	0.000
Barrier score (0-11) [a]			
Mean	0.04	0.03	0.000
Sexual risk behavior (%)[b]			
Never experience paid sex	23.5	76.5	0.003
Ever experience paid sex	12.6	87.4	

[a]t-test
[b]Pearson Chi-square

The majority of married men in this study reported low barrier on condom use. Among those who use condom, the mean of barrier score is 0.04, while those who not use condom, the mean score of barriers on condom use were 0.03. Performing the t-test, the result showed significant association between barrier on condom and condom use.

Interesting finding occurred on the sexual risk behavior, where the analysis result reveals that married men who ever experience paid sex with FSWs reported the higher percentage on not use condom for family planning purposes (87.4%). Surprisingly, if we compared among those who use condom, married men who never experience paid sex have a higher percentage of condom use at 23.5% than married men who ever experience paid sex (12.6%).

4.3. Multivariate Analysis

Probit logistic regression is applied for analysis with the dichotomous dependent variable. The method's purpose is to measure the effect of certain independent variables, which include such demographic characteristics, as age, education, place of residence, knowledge on family planning, condom-specific, knowledge on HIV/AIDS transmission and STDs symptoms, attitude in favor to condom use, barrier on condom use and sexual risk behavior to condom use as dependent variable.

Table 4.7 shows the result of probit model. In probit analysis presented two models. **Model 1, called "Contraceptive Decision Model"**, investigated factors influencing the decision on condom use as contraceptive methods among married men in general (condom users vs. non users, which consist of other temporary method users and not use any method). **Model 2, called "Method Choice Model"**, examined the factors affect the preference on condom use as method choice among contraceptive users (condom users vs. other temporary method users).

Model 1: Contraceptive decision model

Model 1 is applied to analyze factors influencing the decision on condom use as contraceptive methods among married men in general (condom users vs. non

users). Result of model 1 showed demographic characteristics, which are age, education level and place of residence are not significant on condom use

Among married men in general, having higher knowledge on family planning is significant increasing the propensity to use condom. Married men who have higher knowledge on family planning 7% more likely to use condom compared married men who have lower knowledge on family planning. Knowing that condom cannot be reused significantly increase condom use. Married men who agree that condom use cannot be reused are more likely to use condom as a temporary family planning method.

Surprisingly, the knowledge on HIV/AIDS transmission and STDs symptoms, which include knowledge on STDs symptom for men and women and knows that condom can protect against diseases are not significant.

Having positive attitudes to condom use also significantly increase condom use. Married men who have positive attitude to condom use 18% more likely to use condom. Facing many problems on condom use will reduce condom use. Married men who met barriers on condom use 44% less likely to use condom compared married men who did not meet problems on condom use.

Perceive risk behavior by having experience paid sex among married men in Indonesia significantly influence condom use, the regression results showed that having experience paid for sex does not lead to more use condom, having had experience paying for sex 34% less likely to use condoms compared to married men who never have experience paid for sex

Model 2: Method choice model

Model 2 is applied to analyze factors influence preference of condom use among contraceptive users (condom users vs. other temporary family planning users). Table 4.6 shows that among respondents who were contraceptive users, among demographic characteristics, only place of residence was found significant influence of using condom (admittedly with p-value = 0.058), means that among contraceptive users who live in urban are more likely to use condom than those who live in rural area.

Different with model 1, contraceptive decision model that shows that knowledge on family planning have strong significance with condom use, in model 2, method choice model, knowledge on family planning is significant on condom use at 0.10 level. Among married men who are contraceptive users, knowledge on family planning is not the main factors which influence the preference of condom as a method choice because all of them already have a choice of family planning methods to regulate their fertility.

Knowledge on condom-specific, especially condom cannot be reused significantly increase condom use, married men who stated their agreement on condom cannot be reused, 91% more likely to use condom compared married men who disagree on this statement.

Similarly with contraceptive decision model, in method choice model, the knowledge on HIV/AIDS transmission, knowledge on STDs symptom for man and women and knowing that condom can protect against diseases also insignificant. Having higher knowledge on the HIV/AIDS and STD prevention and knowledge on condom can protect against disease did not improve the propensity to use of condoms.

Attitude in favor to condom use among contraceptive users has a positively related with the likelihood of condom use. Among contraceptive users who have positive attitude 19% more likely to use condom. Encountered many barrier on condom use will reduce condom use, among contraceptive users, barrier is significant and they are 45% less likely to use condom

Perceive risk behavior among contraceptive users by their experience paid sex significantly influence condom use, similar with contraceptive decision model, in method choice model, perceive risk by having experience paid sex 38% less likely to use condom compared to those who never experience paid sex.

Table 4.6 Coefficients from probit regression analysis of association between married men's characteristics and condom use as a temporary family planning method in Indonesia, 2007

Characteristic	Contraceptive Decision Model[a]			Method Choice Model[b]		
	Coeff.		S.E.	Coeff.		S.E.
Age	-0.01		0.01	0.00		0.01
Education						
Less and completed primary (ref)						
Secondary	-0.04		0.13	-0.09		0.13
Higher secondary	0.08		0.15	-0.06		0.16
Place of Residence						
Rural (ref)						
Urban	0.18		0.11	0.23	ɨ	0.12
Knowledge						
Family Planning (0-10)	0.07	*	0.03	0.06	ɨ	0.04
Condom cannot be reused						
Agree	0.82	*	0.37	0.91	*	0.39
Otherwise (ref)						
Condom protect against diseases						
Agree	0.02		0.17	-0.19		0.19
Otherwise (ref)						
HIV transmissions (0-8)	0.01		0.03	0.01		0.03
STDs symptom for man (0-12)	-0.02		0.05	-0.02		0.05
STDs symptom for woman (0-12)	0.01		0.07	0.01		0.07
Attitude to condom use (0-3)	0.18	**	0.05	0.19	**	0.06
Barrier on condom use (0-11)	-0.44	***	0.08	-0.45	***	0.09
Sexual risk behavior						
Ever experience paid sex	-0.34	*	0.15	-0.38	*	0.16
Never experience paid sex (ref)						
Constant	-1.93	*	0.52	-2.07		0.55

Significant level at *P<0.05, ** P<0.01, *** P<0.001, ɨ P<0.10
Note : ref=reference.
[a]Contraceptive decision model = condom users vs. use other temporary methods and not use any methods (N =895)
[b]Method choice model = condom users vs. use other temporary methods (exclude not use any method) (N=746)

4.4. Correlation

Path analysis requires that the measured variables are not multicollinear. Pearson correlation was used to examine the strength of association between all observed variables and for investigating collinearity and multicollinearity. Correlation values between variables should not exceed ± 0.85 (Kline, 2005).

Matrix correlation coefficients of studied variables among married men in general

Table 4.7 shows the correlation in this study ranged from 0.00 to 0.556. These findings indicate all value were within the normal range. Thus, there is no evidence of multicollinearity among the independent variables.

Matrix Pearson correlation in table 4.7 shows that demographic factors, which are age, education level and place of residence were not significantly associated with condom use. Among demographic factors, only place of residence related with education level (r = .16, P<0.01). Knowledge on family planning was significantly associated with condom use (r = .07, P<0.05), age (r = .13, P<0.01), education level (r = .38, P<0.01) and place of residence (r = .08, P<0.05).

Knowledge on condom cannot be reused was significantly related with condom use (r = .09, P<0.01), education level (r = .08 P<0.05), place of residence (r = .12, P<0.01), and family planning knowledge (r = .11, P<0.01), but not related to age. Knowledge on condom can protect against disease was significantly associated with knowledge on family planning (r =.11, P<0.01) and knowing that condom cannot be reused (r =.13, P<0.01), but not related with age, education level, place of residence and condom use.

Knowledge on HIV/AIDS transmission was significantly associated with age (r =.12, P<0.01), education level (r =.32, P<0.01), place of residence (r =.15, P<0.01), family planning knowledge (r =.39, P<0.01) and condom cannot be reused (r =.18, P<0.01), and condom can protect against disease (r =.16, P<0.01) but not significantly associated with condom use. Knowledge on STDs symptom for men was significantly related with age (r =-.08, P<0.05), education level (r =.19, P<0.01), place of residence (r =.10, P<0.01), knowledge on family planning (r =.27, P<0.01),

condom can protect against disease (r =.08, P<0.05), and HIV/AIDS transmission (r =.26, P<0.01) but not associated with condom use and knowledge on condom cannot be reused. Knowledge on STDs symptom for women was significantly associated with education level (r =.22, P<0.01), place of residence (r =.08, P<0.05), knowledge on family planning (r =.27, P<0.01), condom can protect against disease (r =.07, P<0.01), HIV/AIDS transmission (r =.19, P<0.05) and STDs symptom for men (r =.56, P<0.01).

Attitude in favor to condom use was significantly associated with condom use (r =.19, P<0.01), education level (r =.10, P<0.01), knowledge on family planning (r =.07, P<0.05), condom cannot be reused (r =.07, P<0.05), HIV/AIDS transmission (r =.09, P<0.01), and STDs symptom for men (r =.07, P<0.05), but not associated with age, place of residence, knowledge on condom can protect against disease, and knowledge on STDs symptom for women

Barrier on condom use was related with condom use (r =-.21, P<0.01), education level (r = .12, P<0.01), knowledge on family planning (r =.16, P<0.01) and knowledge on STDs symptom for men and women (r =.16, P<0.01 and r =.18, P<0.01 respectively) and attitude in favor to condom use (r =.24, P<0.01). Sexual risk behavior was significantly associated with condom use (r =-.10, P<0.01) and knowledge on STDs symptom for men (r =.09, P<0.05)but not associated with age, education level, place of residence, knowledge on family planning, condom-specific knowledge, HIV/AIDS transmission, STDs symptom for women, attitude and barrier on condom use.

Table 4.7. Matrix of Pearson correlation coefficients of studied variables among married men (N = 895)

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13
Condom use	1	-.026	.060	.057	.071*	.088**	.008	.053	.000	.004	.193**	-.207**	-.099**
Age		1	-.040	.008	.125**	-.054	-.046	-.115**	-.080*	.004	-.059	-.027	-.012
Education level			1	.160**	.380**	.076*	.052	.321**	.187**	.223**	.102**	.117**	-.063
Place of residence				1	.084*	.120**	-.040	.144**	.104**	.076*	.033	.039	.051
Family planning knowledge					1	.108**	.109**	.392**	.266**	.270**	.068*	.157**	-.064
Condom cannot be reused						1	.130**	.178**	.065	.032	.068*	-.003	-.061
Condom can protect against disease							1	.162**	.079*	.067*	-.019	.025	-.013
HIV/AIDS knowledge								1	.256**	.187**	.090**	.055	.031
STDs symptom for men									1	.556**	.072*	.181**	.086*
STDs symptom for women										1	.028	.177**	.003
Attitude in favor to condom use											1	.241**	-.059
Barrier on condom use												1	.047
Sexual risk behavior													1

Significant level at *P<0.05, ** P<0.01, *** P<0.001

Matrix correlation coefficients of studied variables among married men who are contraceptive users

Table 4.8 shows the correlation in this study ranged from 0.00 to 0.539. These findings also indicate all value were within the normal range and there is no evidence of multicollinearity among the independent variables. Matrix Pearson correlation in Table 4.8 shown that among demographic factors, just place of residence related with education level (r = .15, P<0.01), this result consistent with correlation among married men in general.

Knowledge on family planning was significantly associated with age (r = .17, P<0.01), education level (r = .34, P<0.01) and place of residence (r = .08, P<0.05) but not related with condom use. Knowledge on condom cannot be reused was significantly related with condom use (r = .09, P<0.01), place of residence (r = .10, P<0.01), but not related to age, education level and family planning knowledge. Knowledge on condom can protect against disease was significantly associated with knowledge on family planning (r =.08, P<0.05) and knowing that condom cannot be reused (r =.12, P<0.01), but not related with age, education level, place of residence and condom use.

Knowledge on HIV/AIDS transmission was significantly associated with age (r =-.08, P<0.05), education level (r =.29, P<0.01), place of residence (r =.15, P<0.01), family planning knowledge (r =.35, P<0.01) and condom cannot be reused (r =.13, P<0.01), and condom can protect against disease (r =.14, P<0.01) but not significantly associated with condom use. Knowledge on STDs symptom for men was significantly related with education level (r =.18, P<0.01), place of residence (r =.11, P<0.01), knowledge on family planning (r =.23, P<0.01), and HIV/AIDS transmission (r =.23, P<0.01) but not associated with condom use, age and knowledge on condom cannot be reused and condom can protect against disease. Knowledge on STDs symptom for women was significantly associated with education level (r =.23, P<0.01), knowledge on family planning (r =.24, P<0.01), HIV/AIDS transmission (r =.17, P<0.01) and STDs symptom for men (r =.54, P<0.01).

Attitude in favor to condom use was significantly associated with condom use (r =.20, P<0.01), education level (r =.09, P<0.05), HIV/AIDS transmission (r

=.08, P<0.05). But not associated with age, place of residence, family planning knowledge, condom cannot be reused, knowledge on condom can protect against disease, and knowledge on STDs symptom for men and women

Barrier on condom use was related with condom use (r =-.23, P<0.01), education level (r = .18, P<0.01), knowledge on family planning (r =.17, P<0.01) and knowledge on STDs symptom for men and women (r =.17, P<0.01 and r =.19, P<0.01 respectively) and attitude in favor to condom use (r =-.25, P<0.01). Sexual risk behavior was significantly associated with condom use (r =-.11, P<0.01) and knowledge on STDs symptom for men (r =.09, P<0.05)but not associated with age, education level, place of residence, knowledge on family planning, condom-specific knowledge, HIV/AIDS transmission, STDs symptom for women, attitude and barrier on condom use.

Table 4.8. Matrix of Pearson correlation coefficients of studied variables among contraceptive users (N = 746)

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13
Condom use	1	.033	.046	.072	.060	.085*	-.024	.035	-.011	-.004	.204**	-.223**	-.105**
Age		1	.007	-.023	.170**	-.037	-.001	-.083*	-.060	.010	-.047	-.053	-.022
Education level			1	.153**	.338**	.032	.042	.292**	.179**	.228**	.094*	.117**	-.052
Place of residence				1	.077*	.100**	-.037	.153**	.106**	.069	.053	.037	.071
Family planning knowledge					1	.058	.080*	.345**	.230**	.244**	.057	.165**	-.030
Condom cannot be reused						1	.121**	.131**	.042	.030	.039	.040	-.027
Condom can protect against disease							1	.138**	.063	.055	-.009	.006	.000
HIV/AIDS knowledge								1	.233**	.174**	.080*	.056	.052
STDs symptom for men									1	.539**	.060	.165**	.087*
STDs symptom for women										1	.015	.192**	.001
Attitude in favor to condom use											1	-.251**	-.043
Barrier on condom use												1	.051
Sexual risk behavior													1

Significant level at *P<0.05, ** P<0.01, *** P<0.001

4.5. Path Analysis

Path analysis obtained to assess the structural relationships among demographic factors, knowledge on family planning, condom-specific knowledge, HIV/AIDS and STDs awareness, barrier on condom use and sexual risk behavior as endogenous variables attitude in favor to condom use and condom use as current family planning methods among married men as exogenous.

Measuring overall goodness of fit effects for this study, for which the indices are x^2, df, GFI, AGFI, NFI, CFI, RMR, RMSEA and so on. Usually they are x^2/df < 5; 1>GFI>0.9; 1>NFI>0.9; RMR<0.05; RMSEA<0.05 (Bagozzi and Yi, 1998)

The initial hypothesis model which is fully saturated model is displayed in figure 2.2 allowed to covary to test structural relationships among endogenous variable with exogenous variables both for two model, contraceptive decision model (model 1) and method choice model (model 2). Estimation of initial hypothesis model both for model 1 and 2 revealed a significant model which both saturated model resulted perfect fit (x^2 =0.00, df = 0, p-value =1.000, RMSEA = 0.0000). A saturated model include all the possible path, the *degree of freedom* in this model is the lowest possible, where the degree of freedom is the difference between the number of parameters we can estimate and the number of parameters we want to estimate and saturated model have a very good or perfect fit to the data (Cohen, A, et.al., 2001 and Streiner, David L, 2005).

Regarding saturated model, Toni Heryana (2001), Abdulkadir (2007), and Rosemarie Sutjiati (2010) also found saturated model which resulted perfect fit model when testing hypothesis model on their study. Even though model is perfect fit, many path coefficients found were not statistically significant, which suggest the need of modification of initial model (Ridwan and Kuncoro, 2007). Modifying of model did through "model-trimming", by deleting one path at a time until a significant chi-square difference indicates trimming has gone too far. A non-significant chi-square difference means that we should choose the more parsimonious model (the one in which the arrow has been dropped). The goal is to find the most parsimonious model which is well-fitting by a selection of goodness of fit tests.

Esther Davida Rose (2009) on her study stated that the next step in the path analysis involved the fitting of a full model allowing all four predictors to not only effect intention but also behavior. This was done to identify those paths that were small and irrelevant and could therefore be removed from the model via a model trimming approach. Since the full model is a saturated model, its goodness of fit is perfect and needs therefore no statistical evaluation. It merely served as the starting point for the search for an acceptable final model.

In modifying the initial path model, first, I reviewed the path coefficients and eliminate non significant path form the initial model. After did re-specification, evaluation on this preliminarily revised model revealed a significant model. The overall fit of this revised model was excellent.

Model 1 : Contraceptive Decision Model

The revised model for model 1 (contraceptive decision model) revealed a significant model. The overall fit of this revised model was excellent. The Goodness of Fit effects for this study have been shown as the table 4.9.

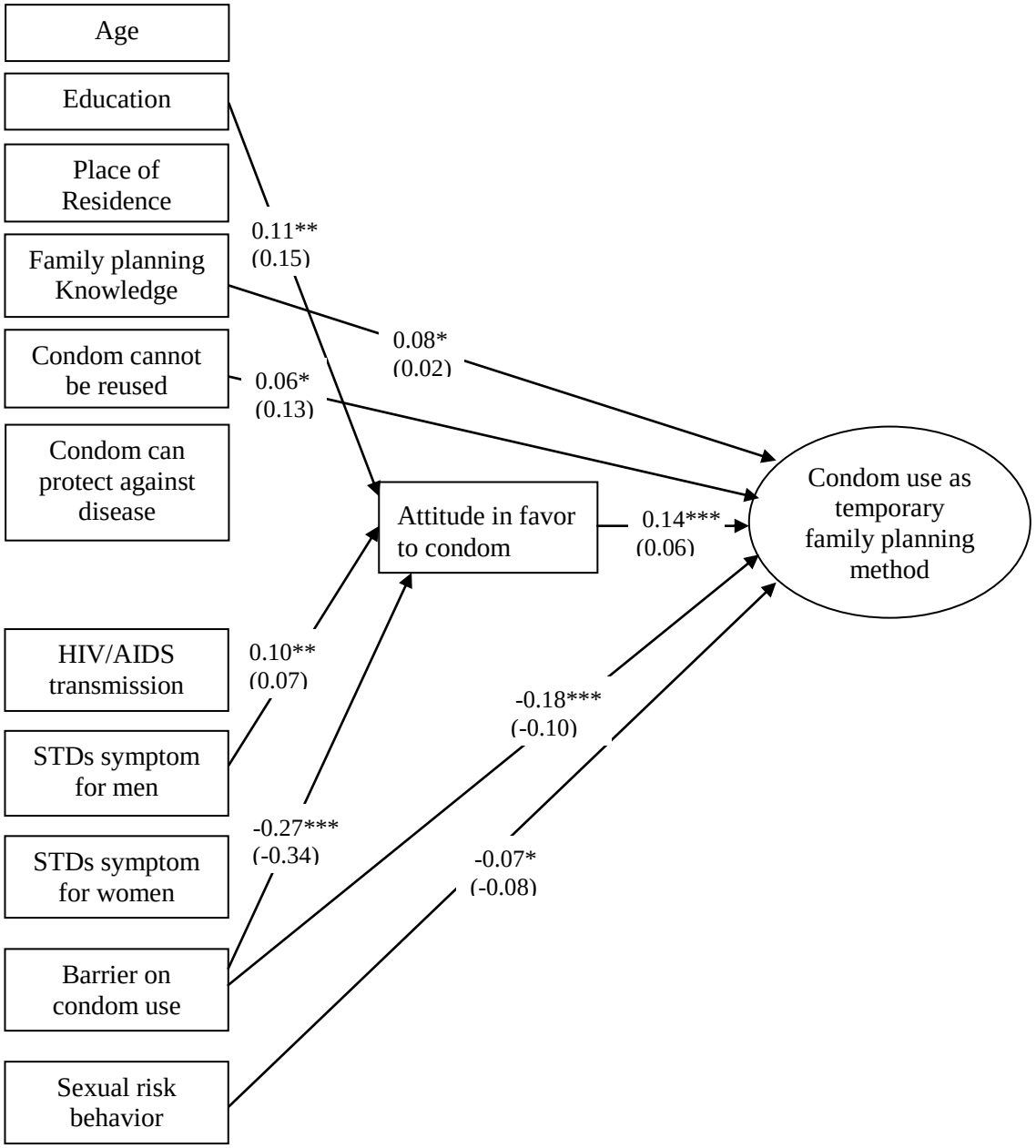
Table 4.9 The overall Goodness of Fit effect scale for model 1 (Contraceptive Decision Model)

Determinant index	x^2	Df	GFI	NFI	AGFI	CFI	RMR	RMSEA
Fit value	15.76	15	1.00	0.99	0.98	1.00	0.045	0.008

The standardized (and estimates) path coefficients for final model are presented in figure 4.1. The model predicted married men's likelihood of attitude in favor to condom use and their decision on condom use. The explained variance in the attitude in favor to condom use is around 8.4% and the variance to condom use as temporary family planning method among married men is 8%.

Figure 4.1 is the final model showing the pathways through demographic factors, knowledge on family planning, condom-specific knowledge and knowledge

on HIV/AIDS and STDs, attitude in favor to condom use, barrier on condom use and sexual risk behavior which influence use of condom among married men in general.



Significant level at *P<0.05, ** P<0.01, *** P<0.001
This model had x^2 = 15.76, df = 15, P-value = 0.39853 and RMSEA = 0.008

Figure 4.1 Final path model showing standardized (and estimates) coefficients of the effects of demographic factors, knowledge, attitude in favor to condom use, barrier on condom use, and sexual risk behavior on condom use as temporary family planning methods among married men.

After controlling for all variables in the model, we found that among demographic factors, having higher education significant influence condom use, but it did not directly affect use of condom, this is indicated by lack of an arrow from "education" variable to the "condom use as temporary family planning methods" variable in figure 4.1. Married men's education level have a statistically significant effect on condom use, however, with a total effect of 0.01 ($p<0.01$) and a standardized total effect of 0.002 but operated through increasing attitude in favor to condom use. Other demographic variables such as age and place of residence found in the analysis have no statistically significant effect on condom use.

Knowledge on HIV/AIDS transmission, STDs symptom for women and knowing condom can protect against disease were found have no statistically significant effect on condom use for family planning In turn, attitude in favor to condom use was a powerful predictor of married men's decision to use condom, the effect of attitude in favor to condom use on use of condom for family planning significantly influence the decision of married men on condom use.. These findings are consistent with probit model result in multivariate analysis.

Path analysis result found that knowledge on STDs symptom for men have a statistically significant effect on condom use for family planning and a substantial indirect effect of 0.00 ($p<0.05$) and a standardized indirect effect of 0.01 by increasing attitude in favor to condom use. Barrier on condom use have a negative significant effect both direct and indirect on condom use for family planning. Married men who have greater barriers on condom use less likely to use condom than those who have few barriers. In addition, barrier on condom use had indirect negative significant effect on condom use with total effect of -0.02 ($p<0.01$) through decreasing attitude in favor to condom use. Furthermore the greater of barriers is met by married men had significant direct effect on decreasing attitude in favor to condom use.

Sexual risk behavior of married men by having experience paid sex had a negative significant effect on condom use for family planning. Married men who have experience paid sex less likely use condom compare to those who never experience paid sex.

Table 4.10 Path coefficients, standard error, t-value of parameter estimates of condom use as temporary family planning methods among married men.

Model	Unstandardized coefficients		Standardized coefficients	t-value	Sig. level
	Path coefficient	Standard Error	Path coefficients		
Attitude in favor to condom use – condom use	0.058	0.014	0.14	4.05	***
Family planning knowledge – condom use	0.018	0.008	0.08	2.40	**
Condom cannot be reused – condom use	0.13	0.065	0.06	1.99	*
Barrier on condom use – condom use	-0.10	0.018	-0.18	-5.43	***
Sexual risk behavior – condom use	-0.079	0.036	-0.07	-2.22	*
Education level – attitude in favor to condom use	0.15	0.043	0.11	3.45	***
Knowledge on STDs symptom for men – attitude in favor to condom use	0.072	0.024	0.10	3.05	**
Barrier on condom use – attitude in favor to condom use	-0.34	0.042	-0.27	-8.25	***

Significant level at *P<0.05, ** P<0.01, *** P<0.001

Table 4.11 Direct, indirect, and total effect of causal variables on affected variable on condom use as temporary family planning methods among married men

Causal Variables	Affected variables			
	Attitude in favor to condom use		Condom use for family planning	
	Direct effect	Indirect effect	Direct effect	Indirect effect
Education	0.11	-	-	0.02
Family planning knowledge	-	-	0.08	-
Condom cannot be re-used	-	-	0.06	-
STDs symptom for man	0.01	-	-	0.10
Attitude in favor to condom use	-	-	0.14	-
Barrier on condom use	-0.22	-	-0.04	-0.27
Sexual risk behavior	-	-	-0.07	-

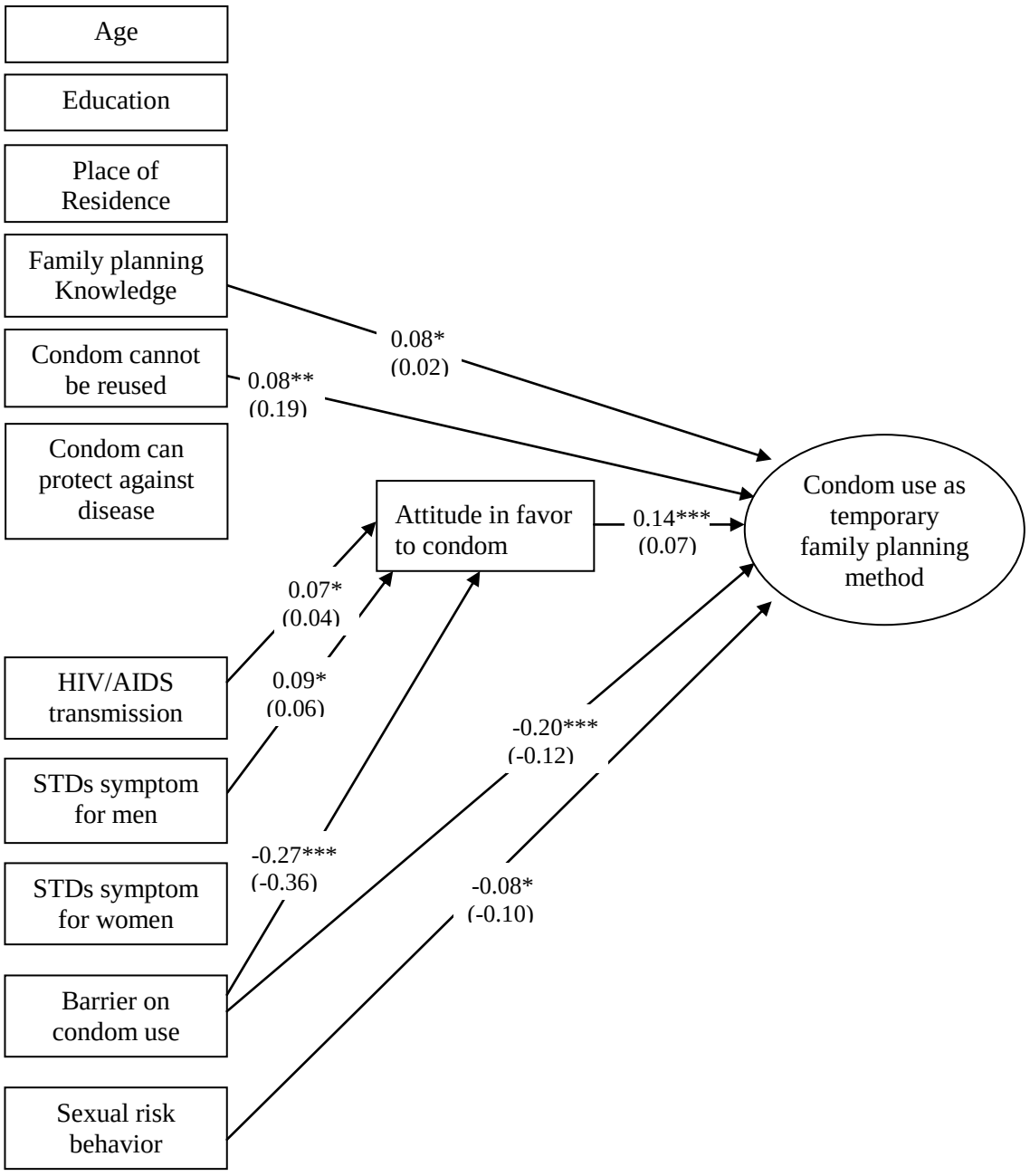
Model 2 (Method Choice Model)

The revised model for model 2 (method choice model) revealed a significant model. The overall fit of this revised model was excellent. The Goodness of Fit effects for this study have been shown as the table 4.12.

Table 4.12 The overall Goodness of Fit effect scale for model 2 (Method Choice Model)

Determinant index	x^2	df	GFI	NFI	AGFI	CFI	RMR	RMSEA
Fit value	19.85	15	1.00	0.98	0.98	0.99	0.040	0.021

The standardized (and estimates) path coefficients for final model are presented in figure 4.2. The model predicted contraceptive user's likelihood of attitude in favor to condom use and their preference on condom use. The explained variance in the attitude in favor to condom use is around 7.9% and the variance to condom use for method choice among married men who were contraceptive users is 9%.



Significant level at *P<0.05, ** P<0.01, *** P<0.001
This model had x^2 = 19.85, df = 15, P-value = 0.17775 and RMSEA = 0.021

Figure 4.2 Final path model showing standardized (and estimates) coefficients of the effects of demographic factors, knowledge attitude in favor to condom use, barrier on condom use, and sexual risk behavior on condom use as a method choice among married men who are contraceptive users

Figure 4.2 shows the pathways through demographic variables, knowledge on family planning, condom-specific knowledge and knowledge on HIV/AIDS and STDs, attitude in favor to condom use, barrier on condom use and

sexual risk behavior influence use of condom among married men who are contraceptive users.

Among demographic variables, they are age, education level and place of residence found in the analysis have no statistically significant effect on condom use.

Consistent with the finding for married men in general in model 1, among married men who were contraceptive users, knowledge on family planning had a relatively strong direct influence on condom use for family planning, but did not affect the attitude in favor to condom use. Moreover, condom-specific knowledge by knowing condom cannot be reused was found in the analysis have a strong direct influence the preference on condom use for family planning and also did not affect attitude in favor to condom use.

The analysis found that among contraceptive users, knowledge on HIV/AIDS transmission had direct influence on attitude in favor to condom use, it was inconsistent with the finding for married men in general which found no significant influence knowledge on HIV/AIDS transmission with attitude in favor to condom use. Knowledge on STDs symptom for men among contraceptive users found in this analysis had significant influence on attitude in favor to condom use.

Knowledge on STDs symptom for women and knowing condom can protect against disease were found have no statistically significant effect on condom use for family planning among contraceptive users. In turn, attitude in favor to condom use was a powerful predictor of married men's preference to use condom, the effect of attitude in favor to condom use on use of condom for family planning significantly influence preference of contraceptive users on condom use.

Barrier on condom use had a negative significant effect both direct and indirect on condom use for family planning. Married men who have greater barriers on condom use less likely to use condom than those who have few barriers. In addition, barrier on condom use had indirect negative significant effect on condom use through decreasing attitude in favor to condom use. Furthermore the greater of barriers was met by contraceptive users had significant direct effect on decreasing attitude in favor to condom use.

Sexual risk behavior of contraceptive users by having experience paid sex had a negative significant effect on condom use for family planning. Married men who have experience paid sex less likely use condom for family planning compare to those who never experience paid sex.

Table 4.13 Path coefficients, standard error, t-value of parameter estimates of condom use as method choice among married men who are contraceptive users

Model	Unstandardized coefficients		Standardized coefficients	t-value	Sig. level
	Path coefficient	Standard Error	Path coefficients		
Attitude in favor to condom use – condom use	0.07	0.017	0.14	3.92	***
Family planning knowledge – condom use	0.02	0.009	0.08	2.19	*
Condom cannot be reused – condom use	0.19	0.081	0.08	2.28	**
Barrier on condom use – condom use	-0.12	0.022	-0.20	-5.39	***
Sexual risk behavior – condom use	-0.10	0.042	-0.08	-2.40	*
HIV/AIDS knowledge – attitude in favor to condom use	0.04	0.019	0.07	2.05	*
Knowledge on STDs symptom for men – attitude in favor to condom use	0.06	0.027	0.09	2.35	*
Barrier on condom use – attitude in favor to condom use	-0.36	0.048	-0.27	-7.51	***

Significant level at *P<0.05, ** P<0.01, *** P<0.001

Table 4.14 Direct, indirect, and total effect of causal variables on affected variable on condom use as temporary family planning methods among married men who are contraceptive users

Causal Variables	Affected variables			
	Attitude in favor to condom use		Condom use for family planning	
	Direct effect	Indirect effect	Direct effect	Indirect effect
Family planning knowledge	-	-	0.08	-
Condom cannot be re-used	-	-	0.08	-
HIV/AIDS knowledge	0.07	-	-	0.01
STDs symptom for man	0.01	-	-	0.09
Attitude in favor to condom use	-	-	0.14	-
Barrier on condom use	-0.24	-	-0.04	-0.27
Sexual risk behavior	-	-	-0.08	-

CHAPTER V
DISCUSSION

This study, utilizing data from 2007 Indonesia demographic and health survey, examined the relationship between demographic factors, knowledge on family planning, condom-specific knowledge, knowledge on HIV/AIDS transmission and STDs symptom for men and women, attitude in favor to condom use, barrier on condom use and sexual risk behavior on condom use among married men in general and among married men who are contraceptive users.

The result of this study found that there are two types of factors which become determinants of condom use as a temporary family planning method in Indonesia. First, factors determine increasing of condom use and, second, factors which determine decreasing of condom use.

Factors which determine increasing of condom use as a temporary family planning methods among married men in general, which drawn in model 1 (contraceptive decision model), consisted of knowledge on family planning, knowledge on condom cannot be reused and attitude in favor to condom use. In addition, level of education and knowledge on STDs symptom for men indirectly increasing condom use through attitude in favor to condom use. While factors which determine decreasing of condom use in this group, namely barrier on condom use and sexual risk behavior by having experience paid for sex.

Furthermore, factors determine increasing of condom use as a temporary family planning methods among married men who were contraceptive users, which presented in model 2(method choice model), composed of knowledge on family planning (admittedly at $p<.10$ by probit model) , knowledge on condom cannot be reused and attitude in favor to condom use. In addition, live in urban area significant increasing condom use at p-value 0.058. The knowledge on HIV/AIDS transmissions and knowledge on STDs symptoms for men indirectly increased condom use through attitude in favor to condom use. Moreover factors which determine decreasing of condom use in this group, they are barrier on condom use and sexual risk behavior by

having had experience paying for sex. Factors which determine of condom use will explained more detail in the next paragraph.

The result of this study found that demographic characteristics is not significant increasing use of condoms, the findings of this study found that age, education level and place were not significant to increase condom use, however, using probit analysis among married men who were contraceptive users, found that live in urban area significant to improve the propensity to use condom (p-value =0.058). It means that live in urban will increase condom use related with availability and accessibility of condom use in urban area than in rural area. Furthermore, path analysis results revealed that effect of education level give indirect effect to increase use of condom for family planning through attitude in favor to condom use among married men in general.

Many studies found that demographic characteristic significantly influence propensity condom use. Tanfer, et.al (1993) conducted study on condom use among United State's men found that condom use negatively associated with men's current age, declining sharply after age 30, but it increased with education. Another study in Nepal, conducted by Govinda, et.al (2008) found that married men age 20-29 are reported have the highest level of condom use as a contraceptive method. In line with age, the higher level of education also increase condom use, A Nepal study also found that the highest level of condom use reported by married men which at least completed secondary school.

Place of residence also have influence on using of condoms, live in urban area increase the propensity to use of condom. It is expected because easy access to obtain condom in urban area rather than in rural area. Previous study conducted in Indonesia on factors influence decision making on men's contraceptive methods found that the probability to increase men's contraceptive use 3.5 times happen among married men who lives in urban area than rural area (Suprihastuti, et.al, 2002).

The result of this study emphasis the importance of knowledge on family planning in determining condom use for as a temporary family planning methods, both among married men in general and married men who are contraceptive users.

Using probit model, the result found that there is a difference on effect of knowledge on family planning among married men in general and among married men

who are contraceptive users. Among married men in general, knowledge on family planning significantly influence condom use at $p<0.05$, but for contraceptive users, it is significant only at $P<.10$. From the difference, we can conclude that among contraceptive users, having knowledge on family planning is maybe not as important as such among married men in general as a predictor to condom use. The reason is because among contraceptive users, all of them already have a choice on contraceptive methods to regulate their fertility. The preference on condom use as their methods choice did not much come from their knowledge on family planning, but more from other significant variables. However, promoting of condom use as a temporary family planning would also equally important and still need to be advocated for married men who are contraceptive users, even though it is not as important as predictor of condom use such for married men in general

Study in Punjab, Pakistan was found that the most significant variable in that study which influence men's current use of contraception was awareness of the respondent about family planning, where respondent who aware about family planning increase the practice of contraception 3.7 times more compared those who unaware about family planning, which in those study condom as the highest contraceptive method used by respondents (Nasir, at al, 2010) . A study from Govinda, at.al (2008) found that men who had been exposed to family planning message were the most likely to use condom or other temporary methods rather than not use any methods.

The importance of having knowledge on family planning proven by a study in Egypt, those study found that the low level of condom use because the respondents does not have enough information on condom use as a family planning methods and just few respondent need of more information. This means there is still a reluctance of men to seek information about family planning (Kabbash, et.al, 2007).

The study's finding highlighted that having knowledge on condom-specific significantly increase condom use both among married men in general and for married men who are contraceptive users. This result proven by having knowledge on condom cannot be reused which is significantly influence condom use. This finding imply that knowing any kind of contraceptive methods is not enough to increase condom use among married men in general and to increase the preference on condom use among married men who are contraceptive users, needed advance knowledge and

understanding on condom specifically as their reference based on contraceptive decision making

Knowledge on condom-specific is very important relating on condom use discontinuation pattern among married men in Indonesia. United Nation (2004) reported that the likelihood of stopping condom use in Indonesia have low value, this pattern similar with Turkey which known is the only one of the 18 countries which include in the study where condoms are widely used within marriage. Promoting condom use through giving information on condom-specific considered will increase the interest to prefer condom as contraceptive methods, regarding dual role of condom. When married men interest, prefer and decide condom as their family planning method and get benefit related condom as the only one of contraceptive method which have dual role as pregnancy prevention and HIV/AIDS and STDs prevention, and it made them still continue use of condom and did not switch to another methods.

A study in Thailand found that knowledge of condom effectiveness significantly associated with increase of condom use (Chamratrithirong and Kaiser, 2009). However, a study in United States found that knowledge on condom is not significant with current use of condom (Weeks, M.R, et.all, 2010).

In Indonesia, based on a study conducted by BKKBN in 1988, among married couple, most of them accept condom as family planning methods as an effective method to prevent pregnancy, moreover, most of them just agree that condom should be for married couple, but, just few of them agree condom for unmarried people. The acceptance of condom as family planning method reported because the role of family planning fieldworkers who promoted condom use among married men, this is according to report from those study that majority of married men receive message from family planning field workers on condom-specific knowledge compared to married women who received message on family planning generally --not specifically on condom use but together with another methods-- from field workers (National FP studies centre, 1988).

According to result of probit model, having knowledge on HIV/AIDS, the knowledge on STDs symptom both for men and women and knowledge on condom can protect against disease did not influence condom use both for married men in general and among contraceptive users. Path analysis result revealed that knowledge

on HIV/AIDS and the knowledge on STDs symptom for men had a significant indirect effect to increase condom use through attitude in favor to condom use among married men who are contraceptive users, and among married men in general, only knowledge on STDs symptom for men had a significant indirect effect to increase condom use through attitude in favor to condom use.

Promoting condom use for family planning should not only bring message for regulate the fertility, but this finding also revealed that giving information about HIV/AIDS and STDs also as important as family planning message to increase deep understanding on dual role of condom use both for pregnancy prevention and HIV/AIDS and STDs prevention. With giving information about HIV/AIDS and STDs, both married men in general and married men who are contraceptive users will gain benefits and it will be one predictor to increase attitude in favor to condom use and finally resulting a decision to choose condom as a contraceptive method or prefer condom rather than other method because of the benefit of condom as dual role methods.

Some studies also found that knowledge on HIV/AIDS was not significant on condom use. Explanation for this result could be related with married men's risk taking behavior, even though they have knowledge on HIV/AIDS and STDs and know that condom can protect them against disease include reduce their chance getting HIV virus, it does not influence them to change their behavior.

Another reason cited from Hounton, et al, (2005) found that despite a relatively acceptable knowledge of modes of transmission and prevention methods, only a few of participants declared using condoms, which is an indication that a relatively good knowledge about HIV/AIDS, even though necessary, may not be a key factor in behavioral change in fighting HIV epidemic in the study population, from their findings they also stated it indicate that program which aim only at increasing awareness and knowledge may not succeed.

Having knowledge on HIV/AIDS and the effectiveness of condom use protect against disease does not means people will break away from unsafe sex, nowadays people still engage in unprotected sex, even in countries with high HIV prevalence rates, where unprotected sex entails high risk. And many studies have shown low levels of condom use. (e.g. De Walque, 2009 ; Birraro et al. 2009)

This study revealed that attitudes in favor to condom use have a great effect on condom use. First, attitude in favor to condom use had a strong direct effect which is significantly increase propensity of condom use. Second, attitudes in favor to condom use as the best intermediate variable which connected knowledge on HIV/AIDS and knowledge on STDs symptoms as the predictor of condom use. This finding revealed that issue related with HIV/AIDS and STDs can give an influence to increase condom use relating dual role of condom, as prevention against disease as well as for pregnancy prevention. Promoting condom use as a temporary family planning method will be the way for acceptance dual role of condom, considering that low condom use for HIV prevention in Indonesia related controversy over condom promotion.

A study in Kwazulu-Natal, South Africa found that there is association between attitude towards condom and condom use. Another study in Zimbabwe also found that attitudes toward condom use and partner discussion of condoms also influencing use of condoms (Adetunji J and Meekers D, 2003).

A study in urban United States found that positive attitude toward condom associated with greater use, even though many condom users indicated dislike to condom, but willingness to use condom is for desired prevention. Furthermore Laraque et, all (1997) found that perceived benefits of avoidance of pregnancy was found as a strongest predictors to consistent condom use. However, many other studies conducted in eastern and southern Africa said that condom use within marriage is uncommon and attitudes toward condom use remain rather negative (particularly among men). Maharaj and Cleland (2005) found that women were more likely than men to have a positive attitude toward condom use in marital relationship.

When it comes to barrier on condom use, this study found that facing many barrier on condom use significantly reduce condom use. Using path analysis, the result revealed that barriers have direct and indirect effect to decrease condom use. Among all the variable in this study, condom barrier is the one which have great effect on condom use, proven with great negative coefficient value to condom use that very potentially reducing use of condoms as temporary family planning methods. Condom barriers treatment should be one attention to increase condom use. Improving condom quality and giving condom skills maybe the way to decrease condom barriers.

Regarding the barrier on condom use, in 2007 IDHS reported that most of problem reported by married men in Indonesia is condom diminish sexual pleasure. The similar findings from a study conducted by BKKBN in 1988 reported that most of problem that married men reported on condom use is diminish sexual pleasure. There is no denying that latex condoms reduce tactile sensation. However, the experience of pleasure is inherently subjective, reflecting the complex interplay of sensation, emotion, and cognition (Abramson & Pinkerton, 2002). Randolph, M.E, et.al (2007) found that many people believe that condoms reduce sexual pleasure and that most of them are men, in particular, who believe that condoms decrease pleasure are less likely to use them. Their research suggested that condom promotion campaigns should work to emphasize the pleasure-enhancing aspects of condom use.

Some studies also found that barrier on condom use as a factor caused lack of condom use, in Benin, West Africa found that perceive condom as an ineffective methods and reported having problem with using condom associated with lack of condom use. (Hounton et. al, 2005). In Kenya and Ghana, a study on condom use found perceived barriers as the strongest predictors of condom use. (Adih and Alexander, 1997).

In terms of sexual risk behavior, this study revealed that having experience paid for sex less likely to use of condom for family planning. An explanation for this kind of risk-taking behavior come from a study in Uganda, men in the high-risk sexual behavior do such acts out of pleasure and as avenues for attaining fulfilled sexual lives (Ntozi, et,al.2003). The search for women sex workers is constant their desire to have sexual pleasure, which are greatly facilitated by their financial status are the forces behind reckless sexual behavior among high-risk groups. This Uganda study also explain reason why among married men who ever experience paid sex but they do not use condom with their wives, one of the reasons given from non-use of condoms in marital relationships to unfaithfulness of spouses despite that married people were perceived to be at a high risk of contracting HIV, but because use condom with wife means mistrust in a marriage institution and many wives does not expected to use condoms yet most husbands have other women outside marriage with whom they engage in unprotected sex. This is one causes of increasing number of

housewives infected HIV/AIDS and this has led to many deaths among married people.

In case of sexual risk behavior, a study in Zaire revealed that most of the individuals engaging in extramarital sexual activity did not acknowledge any perception of risk, even though the majority of these people intellectually “know” that extramarital sexual activity, such as payment for sex, provides risk of HIV exposure. Even though majority of male respondents knew of condom, but negative attitude toward condom are widespread, and just few respondent perceived condom as central role to prevent HIV/AIDS (Bertrand, JT, et.al, 1991)

CHAPTER VI
CONCLUSION AND RECOMMENDATION

6.1 Conclusion

Men's participation in family planning in Indonesia just around 1.5 %, consisted of condom 1.3% and 0.2% for vasectomy (IDHS, 2007). Low level of contraceptive use among married men, especially condom use which should be widely accepted rather than other male methods was caused many factors.

The result of this study found that there are two type of factors which become determinants of condom use as a temporary family planning method in Indonesia. First, factors determine increasing of condom use and, second, factors which determine decreasing of condom use.

Among married men in general and among married men who were contraceptive users, factors which determine increasing of condom use as a temporary family planning methods consisted of knowledge on family planning, knowledge on condom cannot be reused and attitude in favor to condom use. While factors which determine decreasing of condom use, namely barrier on condom use and sexual risk behavior by having experience paid sex.

Moreover, level of education and knowledge on STDs symptom for men indirectly increasing condom use through attitude in favor to condom use among married men in general. While, among married men who are contraceptive users, live in urban area significant increasing condom use, and knowledge on HIV/AIDS transmission and knowledge on STDs symptom for men indirectly increasing condom use through attitude in favor to condom use among

The result of this study emphasis the importance of knowledge on family planning on determining condom use as a temporary family planning method, both among married men in general and married men who were contraceptive users. The stressed on this issue focusing on the role of knowledge on family planning among married men who are contraceptive users maybe not as important as such among

married men in general as a predictor to condom use. However, promoting of condom use as a temporary family planning would also equally important and still need to be advocated, especially promoting on dual role of condom.

Knowledge on condom-specific was significantly increasing condom use both among married men in general and for married men who were contraceptive users. This finding imply that there is a need on advance knowledge and deep understanding on condom-specifically to increase use of condom, which this knowledge will be married men's reference based on condom's decision making.

Promoting condom use for family planning should not only bring message for regulate the fertility, but giving information about HIV/AIDS and STDs also as important as family planning message to increase deep understanding on dual role of condom use both for pregnancy prevention and HIV/AIDS and STDs prevention. With giving information about HIV/AIDS and STDs, both married men in general and married men who are contraceptive users will gain benefits and it will be one predictor to increase attitude in favor to condom use and finally resulting a decision to choose condom as a contraceptive method or prefer condom rather than other method because of the benefit of condom as dual role methods.

Promoting condom use as a temporary family planning method in Indonesia will be the way for acceptance dual role of condom, considering that low condom use for HIV prevention in Indonesia related controversy over condom promotion. A great effect of positive attitude on condom use which are influence by knowledge on HIV/AIDS and STDs will increasing the possibility of condom use both for pregnancy prevention and HIV/AIDS and STDs prevention.

Regarding great effect of barrier on condom use which potentially reducing use of condom as temporary family planning methods. Condom barrier treatment should be one attention to increase condom use. Improving condom quality and provide condom skill maybe the way to decrease condom barrier.

Overall, promoting condom use for family planning should be improved and designed by stressed on increasing family planning and condom-specific knowledge, increasing attitude in favor to condom use, improving of condom quality and access and increase awareness of sexual risk behavior especially related to paid sex. In addition, provide HIV/AIDS and STDs knowledge need to be advocate in

promoting condom use for family planning, related on HIV/AIDS and STDs message which have important role to increase positive attitude to condom use which in turn increase the propensity of condom use.

6.2 Policy Recommendations

Program intervention on promoting condom use for family planning in Indonesia should be designed at two levels:

1. Community level

- Promoting condom use for general people in community should emphasize on increasing knowledge on family planning to increase contraceptive use include using of condoms
- Increasing condom specific knowledge will be a reference based for condom decision making to increase using of condom
- Providing STDs knowledge will be the way for acceptance dual roles of condom as STDs prevention, carefully attention needed related giving on STDs knowledge to community related controversy over condom promotion.
- Increasing attitude in favor to condom use with providing condom skill to increase deep understanding on condom use.

2. Clinic based

- Promoting condom use for contraceptive users in clinic based should stress on promoting dual role of condom, both for pregnancy prevention and HIV/AIDS and STDs prevention.
- Condom-specific knowledge should more stressing on when giving family planning counseling to married men who were contraceptive users.
- Increasing knowledge on HIV/AIDS and STDs would be one predictor to increase attitude in favor to condom use which in turn increase the propensity of condom use.

3. Improving of condom quality and access needed by social marketing intervention which emphasize on the pleasure-enhancing aspects of condom use.

4. Increasing the role of family planning fieldworkers and health services to promote condom use as the bridge to reach contraceptive users and general people to increase their preference on condom use as temporary family planning methods.

6.3 Recommendations for further research

There are many factors influencing condom use as a temporary family planning method. Further research which is include married men who never use condom is clearly important to examine the determinants of condom use on the whole, which is important for intervention program suggestions. Further research should also consider the influence of married women as spouse within family. Research that determines the effect of religiosity on preference of condom as a temporary family planning method also important as a valuable variable on determining condom use as temporary family planning methods. Furthermore, longitudinal study on condom use will give many information related the causal factors on condom use continuation and discontinuation.

BIBLIOGRAPHY

Abdulkadir. (2007). Analisis Konfirmatori unruk Kinerja Manajer Penjualan PBF di Malang. *Jurnal Aplikasi Manajemen*. Volume 5, No. 1, April 2007.

Adih WK, Alexander CS. (1999) Determinants of condom use to prevent HIV infection among youth in Ghana.*Journal Adolesc Health*, 24(1):63-72.

Ajzen I, Fishbein M. (1980) Understanding attitudes and predicting social behavior. Prentice-Hall, Inc., Englewood Cliffs, New Jersey.

Bagozzi. R.P., and Yi Y (1988). On the evaluation of structural equation model. Academy of Marketing. *Science Journal*. 16(1), 74-94

Bandura A. (1977) Social Learning Theory. Prentice-Hall, Inc., Englewood Cliffs, New Jersey.

Bankole A, et al (1999). Determinants of Trends in Condom Use in the United States, 1988-1995. *Family Planning perspectives*, Vol. 31 No. 6 (Nov-Dec., 1999) pp. 264-271.

Barnwal, Ashok. (2004). Success of the Indonesian population program: lessons for India. *Journal of Development and Social Transformation* 1: 43-50.

Bauni, E. K. and Obonyo B. Jarabi. (2000). Family Planning and Sexual Behavior in the Era of HIV/AIDS: The Case of Nakuru District, Kenya. *Studies in Family Planning*. 31, 1: 69-80.

Bauni E. K. and Obonyo J. B. (2003). The Low Acceptability and Use of Condoms Within Marriage*:* Evidence from Nakuru District, Kenya. *African Population Study*.

Becker, S. (1996). Couples and reproductive health: A review of couple studies. *Studies in Family Planning*, 27(6), 291-306.

Bertrand JT, et.al. (1991). AIDS-Related Knowledge, Sexual Behavior, and Condom Use among Men and Women in Kinshasa, Zaire. *American Journal of Public Health*. Vol. 81. No. 1.

Chabot MJ, Lewis C, de Bocanegra HT, Darney P. 2011. Correlates of Receiving Reproductive Health Care Services Among U.S. Men Aged 15 to 44 Years. *American Journal of Men's Health*. 5(4):358-366.

Chamratrithirong, Aphichat and Kaiser, Paulina. (2009). The Dynamics of Condom Use with Regular and Casual Partners: Analysis of the 2006 National Sexual Behavior Survey of Thailand. *Public library of Science*. *PLoS ONE*.

Changanti, S. et al. (1994). Kenya Condom Consumer Knowledge, Attitudes and Practises Survey. A working paper, *Population Service International*.

Chimbiri AM. (2007). The condom is an 'intruder' in marriage : evidence from rural Malawi. *Soc Sci Med*. Vol.64, p.1102-1115.

Cleland J, Ali MM. (2006) Sexual abstinence, contraception, and condom use by young African women: a secondary analysis of survey data. *Lancet*. 368: 1788–1793.

Cohen, Aron, et.al., (2001). Analysis of Mediating Effect of Personal Psychological Variables on the Relationship between Socioeconomic Status and Political Participation: A Structural Equation Framework. *Political Psychology*. Vol 22, No.4, 2001.

Davis KR, Weller SC. (1999). The effectiveness of condoms in reducing heterosexual transmission of HIV. *Fam Plann perspect* 31:272-279.

Dahal, P.G, Padmadas, S.S, Hinde, P.R.A. (2008). Fertility-limiting behavior and contraceptive choice among men in Nepal. *International Family Planning Perspectives*, 34 (1):6-14

De Walque, D. (2009). Comparing condom use different types of partners: Evidence from National HIV surveys in Africa. *Policy research working paper 5130*. The World Bank Development Research Group.

Drennan M. (1998). Reproductive health. New perspectives on men's participation. *Population Reports*, J(46) 1-35.

Gardner R, Blackburn R, Upadhyay U. (1999). Closing the Condom Gap. Population Report Health Series, Number 9. Baltimore: *Johns Hopkins Population Information Program*, Johns Hopkins School of Public Health.

Greene, Margaret E., Manisha Mehta, Julie Pulerwitz, Deirdre Wulf, Akinrinola Bankole, and Susheela Singh. (2006) "Involving men in reproductive health: Contributions to development," background paper to the report Public Choices, Private Decisions: Sexual and Reproductive Health and theMillennium Development Goals. New York: UN Millennium Project.

Ferdinand, A. 2002. Structural Equation Modelling dalam Penelitian Manajemen. Semarang: Badan Penerbit Universitas Diponegoro.

Finkelstein, M. A. & Brannick, M. T. (2000). Making decisions about condoms. Whose attitude is it anyway? *Social Behavior and Personality*. Retrieved July 12th, 2012, from http://psych.mrmccabe.com/documents/hiv_ condoms _2002.pdf.

Fishbein, M., and Middlestadt, S.E. (1989). Using the theory of reasoned action as a framework for understanding and changing AIDS-related behaviors. In V.M. Mays, G.W. Albee, and S.F. Schneider (Eds.), Primary prevention of AIDS: Psychological approaches (pp. 93-110). London: Sage Publications.

Heryana, Toni. (2001). Pengaruh biaya bunga terhadap pendapatan bungadan implikasinya terhadap likuiditas pada PT. Bank Jawa Barat dan Banten. *Jurnal Akuntansi Riset*. Prodi Akuntansi UPI

Hull, Terence H. Budiharsana, Meiwita. (2001). Putting Men in the Picture : problems of Male Reproductive Health in Southeast Asia. IUSSP XXIV Congress. Salvador, Brazil.

Hull, T. H., Hull, V. J., & Singarimbun, M. (1977). Indonesia's family planning story: success and challenge. *Population Bulletin, 32*(6), 1-52.

Hull, T.H. (2002). Caught in transit: questions about the future of Indonesian fertility, United Nations Population Division publication. Retrieved July 12th, 2012, from www.un.org/esa/population/publications/completingfertility /RevisedHULLpaper

Indonesian National AIDS Commission, (2011). The Response to HIV and AIDS In Indonesia 2006 - 2011: Report on 5 Years Implementation of Presidential Regulation No. 75/2006 on the National AIDS Commission. Jakarta.

International Conference on Population and Development. Programme of Action (1994). Retrieved July 12th, 2012, from (http://www.unfpa.org/icpd/summary.htm#intro).

Joesoef, Mohamad R., Andrew L. Baughman, and Budi Utomo. 1988. "Husband's Approval of Contraceptive Use in Metropolitan Indonesia: Program Implications." *Studies in Family Planning* 19(3): 162-168.

Joreskog, K.G., & Sorbom, D. (1993). LISREL 8 user's reference guide. Chicago: Scientific Software International.

Kabbash, I.A, et.al, (2007). Condom use among males (15-49 years) in lower Egypt: knowledge, attitude and pattern of use. Eastern Mediteranean Health Journal, Vol.13, No.6.

Kisekka, M. (1997). "Involving Men in Operationalizing Reproductive Health Programmes: Addressing Gender Based Issues". UNFPA Regional Consultation, Africa, Addis Ababa, Ethiopia, 25–30 January 1997.

Kisekka M. Socio-cultural beliefs and practices related to condom acceptability among Hausa in Nigeria and Baganda in Uganda. (1991). Paper presented at: Seminar on Condom Acceptability in Africa sponsored by the Task Force for Social Science Research on Reproductive Health of the WHO Special Programme in Human Reproduction, Kampala, 3–7 June 1991.

Kline, R.B. (2005). Principle and practice of Structural Equation Modelling (2nd edition). New York. Guilford Press.

Laraque D, McLean DE, Brown-Peterside P, Ashton D, Diamond B**. (**1997) Predictors of reported condom use in central Harlem youth as conceptualized by the health belief model. *Journal Adolesc Health* , 21(5)**:**318-27

Lasee A and Becker S. 1997. Husband-wife communication about family planning and contraceptive use in Kenya. *International Family Planning Perspectives*. 23(1):15–20, 33.

Lammers, J., et.al. (2011). Gender differences, HIV risk perception and condom use. Timbergen Institute. Amsterdam

Liu H *et al*. (1998). A study of sexual behavior among rural residents of China. *Journal Acquir Immune Defic Syndr Hum Tretrovirol*, Sept 1;19 (1):80-8

Maharaj P, Cleland J. (2004) Condom use within marital and cohabiting partnerships in KwaZulu-Natal, South Africa, *Stud Fam Plann*. 35 (2): 116–124.

Maharaj P, Cleland J. (2005). Risk perception and condom use among married or cohabiting couples in KwaZulu-Natal, South Africa. *International family planning perspectives*, Vol. 31(1), p. 24-29.

Ministry of Health, National AIDS Commission, UNAIDS, et.al. (2007). Integrated Biological Behavioral Surveillance among Most-at-Risk Groups (MARG) in Indonesia ; Surveillance Highlights High Risk Men. Jakarta.

Ministry of Health. (2010). Quarterly Report of Ministry of Health, 2010. DG of DC and EH, Ministry of Health, Republic of Indonesia, Jakarta.

Ministry of Health. (2011). HIV/AIDS Cases in Indonesia until September 2011. Jakarta.

Mize, Lucy S. and Robey, Bryant (2006). A 35 Year Commitment to Family Planning in Indonesia: BKKBN and USAID's Historic Partnership. Baltimore: Johns Hopkins Bloomberg School of Public Health/Center for Communication Programs

Nagler J (1994). Interpreting probit analysis. New York University. http://www.nyu.edu/classes/nagler/quant2/notes/probit1.pdf.. Accessed 20 June, 2012.

Nagler J (2002). Interpreting probit analysis. New York University. www.nyu.edu/classes/nagler/quant1/probit1_post.pdf. Accessed 20 June, 2012.

Nasir JA, Tahir MH, Zaide AA. (2010). Contraceptive attitude and behavior among university men : A study from Punjab, Pakistan. Retrieved March, 16 2012, from http://www.ayubmed.edu.pk/JAMC/PAST/22-1/Nasir.pdf

Ntozi, James P. M. & Kabera, John B. (1991), `Family Planning in Rural Uganda: Knowledge and Use of Modern and Traditional Methods in Ankole´, Studies in Family Planning, Vol. 22, No. 2, pp. 116-123.

Purdy, C.H. (2002) Analysis of Indonesian condom market. Retrieved February 4, 2012. From http://www.dktindonesia.org/pdf/analysisof_ indonesian_ condommarket.pdf

Pusat Studi KB Nasional. (1988). Faktor-faktor yang mempengaruhi pemakaian alat kontrasepsi kondom di Jawa Barat. BKKBN. Jakarta.

Randolph, M. E., Pinkerton, S. D., Bogart, L. M., Cecil, H., & Abramson, P. R. (2007). Sexual pleasure and condom use. *Arch Sex Behav, 36*(6), 844-848.

Reynolds H.W, Luseno W.K, Speizer I.S. (2012). The measurement of condom use in four countries in East and Southern Africa. *Springer Science Business Media*.

Ridwan & Kuncoro. (2007). Cara Menggunakan dan Memakai Analisis Jalur. (Path Analysis). Bandung: Alfabeta. Sekolah Tinggi Pariwisata Bandung.

Ringheim, Karin. (1993). Factors that Determine Prevalence of Use of Contraceptibe Methods for Men. *Studies in Family Planning*. Vol 24. No.2 (Mar-Apr,. 1993) pp 87-99.

Ringheim, Karin. (1996) "Male Involvement and Contraceptive Methods for Men, Present and Future". Paper presented at the *American Public Health Association*, November 1996.

Robey, B & Drennan, M., (1998). Male participation in reproductive health. *Network* 18(3) Retrieved July 12th, 2012, from www.FHI.org/en/RH/pubs/Network /v18_3/NW183ch3.htm.

Rose, Esther Davida. (2009). Beliefs about mental illness and attitudes towards seeking help: A study of British Jewry. University of Hertfordshire.

Sekadde-Kigondu C et al. Condom acceptability and use among long distance truck drivers and their assistants. (1991). Paper presented at: Seminar on Condom Acceptability in Africa, sponsored by the Task Force for Social Science Research on Reproductive Health of the WHO Special Programme in Human Reproduction, Kampala, 3–7 June 1991.

Sennen H. Hounton, Helen Carabina and Neil J. Henderson. (2005). Towards an understanding of barriers to condom use in rural Benin using Health Belief Model : A Cross Sectional Survey. *BMC Public Health*, 5:8.

Statistics Indonesia, NFPCB, Ministry of Health, and Macro International. (2008). Indonesia Demographic and Health Survey 2007, Statistics Indonesia and Macro International, Calverton, Maryland.

Statistics Indonesia, NFPCB, Ministry of Health, and Macro International. (2003). Indonesia Demographic and Health Survey 2002-2003, Statistics Indonesia and Macro International, Calverton, Maryland.

Sweetman, C. (2001). Men's Involvement in Gender and Development Policy and Practice: Beyond Rhetoric: Oxfam.

Streiner, David L. (2005). Finding Our Way: An Introduction to Path Analysis. *Can J Psychiatry* 2005;50:115-122.

Sutjiati, Rosemarie. (2010). Kompetensi dosen dan pengaruhnya pada pembangunan karakter siswa dan budaya bangsa. *Proceedings of The 4th International Conference on Teacher Education; Join Conference UPI & UPSI*, Bandung, Indonesia, 8-10 November 2010

Suprihastuti, Wilopo and Sukamdi. (2002). Pengambilan Keputusan Penggunaan alat kontrasepsi pria di Indonesia (Analisis hasil SDKI 1997*). Berita Kedokteran Masyarakat* XVIII (1).

Tanfer, et.al,. (1993). Condom use among U.S. Men, 1991. *Family Planning Perspectives*, Vol. 25, No. 2. pp.61-66.

UNAIDS. (2009). HIV transmission in intimate partner relationships in Asia. Retrieved February 3, 2012. From http://www.unaids.org/en/resources/ presscentre/featurestories /2009/august/20090811 intimatepartners/.

United Nations. (2004). Levels and Trends of contraceptive use as assessed in 2002. New York. United Nations. Department of Economic and Social Affairs.

United Nations. (2011). World Contraceptive use 2011. New York. Unied Nations. Department of Economic and Social Affairs. New York. Retrieved February 3, 2012. From http://www.un.org/esa/population/publications /contraceptive2011/contraceptive2011.htm

United Nations (1995). Summary of the Programme of Action of the International Conference on Population and Development, New York: United Nations Department of Public Information.

Waithaka Margaret, Bessinger Ruth. (2001). Sexual Behavior and Condom Use in the Context of HIV Prevention in Kenya. *Population Service International*. Kenya.

Wegner, M. N., Landry, E., Wilkinson, D., & Tzanis, J. (1998). Special report: Men as partners in reproductive health: From issues to action. *International Family Planning Perspectives*. 24(1), Retrieved February 4, 2012. From www.guttmacher/org/pubs/journals/2403898

World Bank (2006). HIV/AIDS in Srilanka. Retrieved March, 1, 2012 from www.worldbank.org/wbsite/external/countries/Southasiaext.

WHO (2004). Position statement on condom and HIV prevention. Retrieved February 4, 2012. From http://www. who.int/3by5/en/condom.04/08/07.

WHO. (2011).The condom situation assessment in 11 Asian and Western Pacific countries. WHO. Regional Office for the Western Pacific.

APPENDIX

Variables And Measurement

Variables	Items	Level of measurement
Dependent variable		
Condom use - Not use condom = 0 - Use condom = 1	Q302B	**Dichotomous :** Indicates whether a married men currently use condom as a temporary family planning method
Independent Variables		
Socio Demographic factors **Age** (15-54 year old)	Q109	**Interval**
Education : level of attainment in formal education by the individuals, and is categorized into three groups • Less than and completed primary = 0 • Secondary = 1 • Higher secondary = 2	Q111	**Categorical** : Indicates three levels of education married men obtain
Place of residence Respondent's place of residence is classified into two categories • Rural = 0 • Urban = 1	Qtype	**Dichotomous** : Whether a married man live in rural or urban
Knowledge • **Family planning** 1. Had heard about female sterilization 2. Male sterilization 3. Pill 4. IUD 5. Injectables 6. Norplant/Implant 7. Condom 8. Know a place to obtain family planning methods 9. Know the correct time of women's fertile period	Q301(01) Q301(02) Q301(03) Q301(04) Q301(05) Q301(06) Q302F Q309	**Composite**: The following variables were incorporated into a composite score to measure family planning knowledge. The score ranges from 0-10

10. Know that a woman can become pregnant if she has sexual relations.	Q310	
• **Condom-specific** 1. Know that condom cannot be reused - Otherwise = 0 - Agree = 1 2. Know that condom can protects against diseases - Otherwise = 0 - Agree = 1	 Q233c Q232d	 **Dichotomous** : Whether a married men correctly specifies **"agree"** **Dichotomous** : Whether a married men correctly specifies **"agree"**
• **HIV/AIDS transmissions and STDs symptoms** HIV/AIDS transmission (0-8) 1. Can people reduce their chances of getting the AIDS virus by having just one uninfected sex partner who has no other sex partners? 2. Can people get the AIDS virus from mosquito bites? 3. Can people reduce their chance of getting the AIDS virus by using condom every time they have sex? 4. Can people get the AIDS virus by sharing food with a person who has AIDS? 5. Can people reduce their chance of getting the AIDS virus by no having sex at all? 6. Can a person get the AIDS virus because of witchcraft or other supernatural means? 7. Is it possible for a healthy-looking person to have the AIDS virus? 8. Can the virus that causes AIDS be transmitted from a mother to child? STDs Symptom for man (0-12)	 Q704 Q705 Q706 Q707 Q708 Q708A Q709 Q711 Q718	 **Composite**: The total number of ways a married man correctly mentioned on HIV/AIDS transmissions. The score ranges 0-8 **Composite**: The total

1. Abdominal pain 2. Genital discharge/dripping 3. Four smelling discharge 4. Burning pain or urination 5. Redness/inflammation in genital area 6. Swelling in genital area 7. Genital sore/ulcer 8. Genital warts 9. Genital itching 10. Blood in urine 11. Loss of weight 12. Impotence		number of STDs symptoms that a married man mentioned. The score ranges 0-12
STDs Symptom for woman (0-12) 1. Abdominal pain 2. Genital discharge/dripping 3. Four smelling discharge 4. Burning pain or urination 5. Redness/inflammation in genital area 6. Swelling in genital area 7. Genital sore/ulcer 8. Genital warts 9. Genital itching 10. Blood in urine 11. Loss of weight 12. Impotence	Q719	**Composite**: The total number of STDs symptoms that a married man mentioned. The score ranges 0-12
Attitude 1. Condom diminish sexual pleasure 2. Condom is very inconvenient to use 3. A women has no right to tell a man to use a condom	Q323a Q323b Q323e	**Composite**: The following variables were incorporated into a composite score to measure Attitudes in favor to condom use. The score ranges from 0-3
Barrier 1. Too expensive 2. Embarrassing to buy/obtain 3. Difficult to dispose of 4. Difficult to put on/take off, 5. Spoils the mood 6. Diminishes the pleasure 7. Wife does not like	Q316	**Composite**: The total number of problems that a married man mentions as a barrier of condoms. The score ranges 0-12

8. Wife got pregnant, 9. Inconvenient to use/messy 10. Condom broke 11. Other problem		
Sexual risk behavior • never experience paid for sex = 0 • ever experience paid sex=1	Q316A	**Dichotomous :** Indicates whether a married men ever having had experience paying for sex with female sex workers

BIOGRAPHY

NAME	Miss. Islakhiyah
DATE OF BIRTH	October 16, 1981
PLACE OF BIRTH	Jambi, Indonesia
INSTITUTION ATTENDED	State Padang University, 2000-2004 Bachelor of Arts (Education) Mahidol University, 2011-2012 Master of Arts (Population and Reproductive Health)
SCHOLARSHIP RECEIVED	National Population and Family Planning Board (Indonesia)
POSITION AND OFFICE	Staff of Training and Development Centre Representative of National Population and Family Planning Board (BKKBN), at Jambi Province Jl. RM. Nur Atmadibrata No. 19, Jambi, Indonesia
HOME ADDRESS	Jl. KHA. Madjid No.48 RT. 02/03 Pelayangan, Jambi, Indonesia, 36255 Email: ishlah02@yahoo.co.id