RELATIONSHIP BETWEEN PREGNANCY INTENTION AND OUTCOME OF PREGNANCY: AN IN-DEPTH STUDY OF TWO COMMUNITIES

NATTAYA BOONPAKDEE

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Nattaya Boonpakdee
.....
Miss Nattaya Boonpakdee
Candidate

Kritaya Archavanitkul
.....
Assoc. Prof. Kritaya Archavanitkul, Ph.D.
Major Advisor

.....
Assoc. Prof. Philip Guest, Ph.D.
Co-Advisor

.....
Prof. M.R. Jisnuson Svasti, Ph.D.
Dean
Faculty of Graduate Studies

.....
Asst. Prof. Pimonpan Isarabhakdi, Ph.D.
Chair
Master of Arts Program in Population
and Reproductive Health Research
Institute for Population and Social Research

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On
October 6, 2006

Nattaya Boonpakdee
.....
Miss Nattaya Boonpakdee
Candidate

Kritaya Archavanitkul
.....
Assoc. Prof. Kritaya Archavanitkul, Ph.D.
Chair

.....
Assoc. Prof. Philip Guest, Ph.D.
Member

Napaporn Havanon
.....
Assoc. Prof. Napaporn Havanon, Ph.D.
Member

.....
Prof. M.R. Jisnuson Svasti, Ph.D.
Dean
Faculty of Graduate Studies
Mahidol Universty

C. Kanchanachitra
.....
Assoc. Prof. Churnrurtai Kanchanachitra, Ph.D.
Director
Institute for Population and Social Research
Mahidol Universty

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Nattaya Boonpakdee

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NATTAYA BOONPAKDEE 4838769 PRRH/M
M.A. (POPULATION AND REPRODUCTIVE HEALTH RESEARCH).

THESIS ADVISORS: KRITAYA ARCHAVANITKUL, Ph.D., PHILIP GUEST, Ph.D., NAPAPORN HAVANON, Ph.D.

ABSTRACT

This study explores the extent and characteristics of unplanned pregnancy at community-level; examines the association between pregnancy intention and pregnancy outcome, and explores the reasons underlying unplanned pregnancy among Thai women aged 15-59 in two communities in Thailand. This study used secondary data from the 2001 census study on Pregnancy History of Women in Two Communities in Thailand, conducted by the Population Council-Bangkok Office. A total of 2,463 pregnancies occurring to 913 eligible women were chosen for this study.

Nearly 46 percent of the pregnancies were identified as unplanned, either because women planned not to conceive or had no plan to conceive. Among women attempting pregnancy terminations, about 1.5 percent of pregnancies were planned, about 9.1 percent of pregnancies were unplanned, and about 41.6 percent of pregnancies were among women actively planning not to conceive. Among women who successfully induced abortions in this study are about 1.3 percent of pregnancies were planned, about 4.9 percent by pregnancies among women who had no plan to conceive, and about 22.5 percent by pregnancies among women who were actively planning not to conceive. Women aged lower than 20 and women aged older than 34 were more likely to have unplanned pregnancy than other age groups. Women older than 35 years were more likely to attempt to terminate their pregnancy. Women who had accidental pregnancies due to contraceptive failure were more likely to terminate their pregnancies. Economic difficulties were the most frequently cited reason for unplanned pregnancies and attempted pregnancy termination, followed by a lack of knowledge on contraception, contraceptive failure, child spacing was too close, and underestimate of fertility such as the first sexual intercourse.

These findings strongly indicate the need for the developments of healthy pregnancy programs to assist women realize their pregnancy intentions before and after conception. In addition there is a clear need for intervention programs that enhance women's knowledge of reproductive health and rights and their ability to ensure reproductive self-determination.

KEY WORDS: THAILAND / UNPLANNED PREGNANCY / UNINTENDED PREGNANCY / ABORTION / PREGNANCY OUTCOME.

54 P.

ความสัมพันธ์ระหว่างความตั้งใจในการตั้งครรภ์กับผลของการตั้งครรภ์ : การศึกษาระดับลึกในชุมชน 2 แห่ง
(RELATIONSHIP BETWEEN PREGNANCY INTENTION AND OUTCOME OF PRENGANCY: AN IN-DEPTH STUDY OF TWO COMMUNITIES)

ณัฐยา บุญภักดี 4838769 PRRH/M

ศศ.ม. (วิจัยประชากรและอนามัยเจริญพันธุ์)

คณะกรรมการควบคุมวิทยานิพนธ์: กฤตยา อาชวนิจกุล, Ph.D. (Demography), ฟิลิป เกสต์, Ph.D. (Sociology), นภาภรณ์ หะวานนท์, Ph.D. (Sociology)

บทคัดย่อ

การศึกษาครั้งนี้ต้องการค้นหาขนาดและลักษณะของการตั้งครรภ์ที่ไม่ได้วางแผนในระดับชุมชน ศึกษาความสัมพันธ์ระหว่างความตั้งใจในการตั้งครรภ์กับผลของการตั้งครรภ์ และศึกษาเหตุผลของการตั้งครรภ์ที่ไม่ได้วางแผน การศึกษานี้นำข้อมูลมาจากโครงการสำมะโนระดับชุมชนเรื่องประวัติการตั้งครรภ์ โดยสภาประชากรสำนักงานกรุงเทพมหานคร หน่วยของการวิเคราะห์คือ ครรภ์จำนวน 2,463 ครรภ์ที่เกิดกับผู้หญิงอายุ 15-59 ปีทุกคนที่อาศัยในชุมชน 2 แห่ง รวมทั้งสิ้น 913 คน

ผลการศึกษาพบว่า การตั้งครรภ์เกือบร้อยละ 46 เป็นการตั้งครรภ์โดยไม่ตั้งใจ ซึ่งครอบคลุมกรณีมีการวางแผนว่าจะไม่ตั้งครรภ์และกรณีที่ไม่มีการวางแผนใดเลย พบว่าในครรภ์ที่เกิดโดยวางแผน มีความพยายามทำแท้งอยู่ร้อยละ 1.5 ในครรภ์ที่ไม่มีการวางแผนใดเลยมีความพยายามทำแท้งอยู่ร้อยละ 9.1 ส่วนในครรภ์ที่วางแผนว่าจะไม่มีนั้นมีความพยายามทำแท้งอยู่ร้อยละ 41.6 โดยการทำแท้งสำเร็จเกิดขึ้นในกลุ่มครรภ์ที่เกิดโดยวางแผนประมาณร้อยละ 1.3 ในครรภ์ที่ไม่มีการวางแผนใดเลยมีการทำแท้งสำเร็จร้อยละ 4.9 ส่วนในครรภ์ที่วางแผนว่าจะไม่มีนั้นมีการทำแท้งสำเร็จร้อยละ 22.5 กลุ่มอายุต่ำกว่า 20 ปี และกลุ่มอายุ 35 ปีขึ้นไปมีแนวโน้มเกิดการตั้งครรภ์โดยไม่ได้วางแผนมากกว่ากลุ่มอายุอื่น กลุ่มอายุ 35 ปีขึ้นไปเป็นกลุ่มที่มีแนวโน้มของการพยายามทำแท้งสูงกว่ากลุ่มอายุอื่น เช่นเดียวกับกลุ่มที่ตั้งครรภ์เพราะคุมกำเนิดล้มเหลว ปัญหาเศรษฐกิจถูกระบุว่าเป็นสาเหตุของการตั้งครรภ์โดยไม่วางแผนมากที่สุด รองลงมาคือไม่มีความรู้เรื่องการคุมกำเนิด คุมกำเนิดล้มเหลว มีลูกถี่เกินไป และไม่คาดคิดว่าจะตั้งครรภ์ เช่น เพราะเพิ่งมีเพศสัมพันธ์เป็นครั้งแรก เป็นต้น

ผลการศึกษาชี้ให้เห็นว่ามีความจำเป็นที่ต้องมีโครงการดูแลสุขภาวะของผู้หญิงทั้งก่อนการตั้งครรภ์และหลังเกิดการตั้งครรภ์ และโครงการให้ความรู้เรื่องอนามัยการเจริญพันธุ์และสิทธิอนามัยการเจริญพันธุ์เพื่อให้ผู้หญิงสามารถกำหนดควบคุมภาวะการมีบุตรของตนเองอย่างได้ผล

54 หน้า

CONTENTS

CONTENTS (continued)

LIST OF TABLES

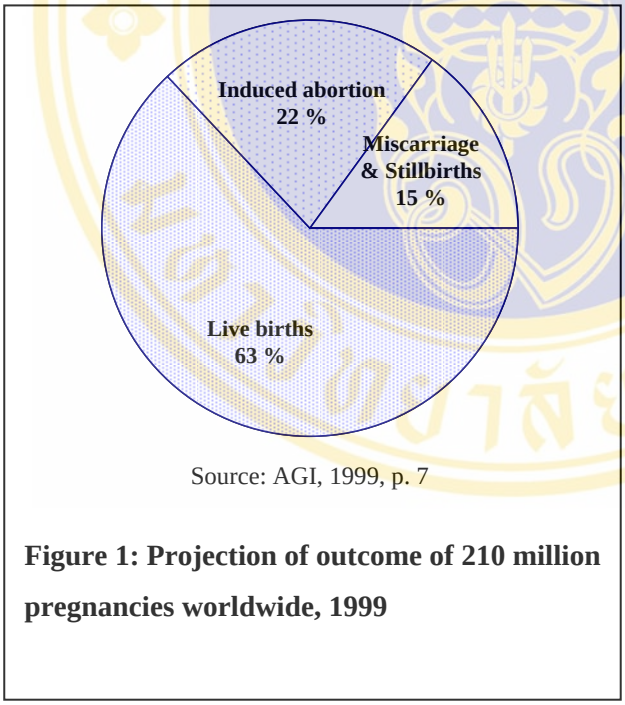
LIST OF TABLES (continued)

LIST OF FIGURES

CHAPTER I
INTRODUCTION

1.1 Statement of the Problem

A woman's ability to plan how many children she wants and when she wants them is central to the quality of her health and life. However, a 1999 research project found 38 percent of the approximately 210 million pregnancies occurring worldwide were unplanned. Of the total pregnancies, 22 percent ended in abortion, 15 percent ended in miscarriages and stillbirths, and 63 percent resulted in live births. These estimates varied both for developed and developing countries and varied by region and country. An estimated 49 percent of pregnancies occurring in developed countries every year were unplanned and 36 percent ended in abortion. In developing countries, an estimated 36 percent were unplanned and 20 percent ended in abortion. In Asia, 39 percent of total pregnancies occurring each year were unplanned and 23 percent ended in abortion (Alan Guttmacher Institute [AGI], 1999). These figures clearly indicate that women lack ability to control their own fertility and are at risk for abortion complications.



Source: AGI, 1999, p. 7

Figure 1: Projection of outcome of 210 million pregnancies worldwide, 1999

The underlying reasons for unplanned pregnancy are similar in many parts of the world, for instance, lack of information and access to high efficacy contraceptive methods, contraceptive failures, sexual violence, and societal disapproval of some

pregnancies i.e. unmarried women and adolescents (AGI, 1999). Moreover, many studies found that unequal power relations between couples have negative effects on women's sexual and reproductive health including unintended pregnancy, miscarriages, and pregnancy complications (Blanc, 2001).

Unintended or unplanned pregnancies have severe consequences for children, women, men, and families. A recent survey in the United States found unintended pregnancy increased medical and social burdens for children and their parents, especially for unmarried women, and often lead to abortion (Brown & Eisenberg, 1995). This study is consistent with several other studies around the world (Henshaw, 1998; AGI, 1999; Okonofua, Odimegwu, Ajabor, Daru, & Johnson, 1999; Pulley, Klerman, Tang, & Baker, 2002; Le, Magnani, Rice, Speizer, & Bertrand, 2004; Singh et al., 2006). The latter consequence contributes to the problem of unsafe abortion, especially where the service is illegal, inaccessible, or of low quality. The World Health Organization revealed that unsafe abortion is still one of the neglected health care problems in developing countries. WHO estimates indicate that 19 million unsafe abortions were carried out worldwide in 2000. In other words, approximately one in ten pregnancies ended in an unsafe abortion or there was one unsafe abortion for about seven live births (WHO, 2004). In Thailand, the latest hospital-based survey found that the induced abortion ratio in 1999 was 19.5 to 1,000 live births. Of the estimated 175,000 induced abortions, 29 percent had serious complications, namely septicaemia and uterine perforation, and there were 14 deaths (Warakamin, Boonthai, & Tangcharoensathien, 2004).

Studies in both developing and developed countries have tried to find the magnitude of the problem, including the determinants of pregnancy intention and their relation to the pregnancy outcome. However, recent efforts to improve knowledge regarding pregnancy intention have found that most studies or surveys are inconsistent in methodology, generally focus on whether the pregnancy is wanted or not, rely on methodologies that include recall and population biases, and lack measurements of reliability. Importantly, what are often reported as rates of unintended pregnancies may actually be rates of unwanted pregnancies which is a completely different concept (Petersen & Moos, 1997). These reviews call for a better understanding of the multiple dimensions of pregnancy intention, especially the

meaning of pregnancy intentions to women, use of a consistent definition that takes into account the complexities of the issue, and valid and reliable scales that reflect the meaning of unintendedness from the women's perspective that change over time of a pregnancy, not only before conception (Petersen & Moos, 1997; Bachrach & Newcomer, 1999; Santelli et al., 2003).

1.2 Justification of the Study

Thailand is committed to the Cairo Plan of Action which explicitly addresses the issues of pregnancy intention and abortion: *"All Governments and relevant intergovernmental and non-governmental organizations are urged to strengthen their commitment to women's health, to deal with the health impact of unsafe abortion as a major public health concern and to reduce the recourse to abortion through expanded and improved family-planning services. Prevention of unwanted pregnancies must always be given the highest priority and every attempt should be made to eliminate the need for abortion. Women who have unwanted pregnancies should have ready access to reliable information and compassionate counseling"* (UN, 1994).

The assessment of a country's situation is the first step toward policy formulation and implementation. However, there has been little knowledge or analysis of unplanned pregnancy in Thailand. Using the data from Thailand Demographic and Health Surveys in 1987, the Alan Guttmacher Institute found that unplanned birth, based on births in the five years before the survey, among Thai women aged 15 to 49 was 31 percent. This figure includes both mistimed pregnancy, defined as a pregnancy reported as not wanted at the time a woman became pregnant, and unwanted pregnancy, a pregnancy reported as not wanted at any time (AGI, 1999). However, comprehensive information about pregnancies, for instance, characteristics of women who have planned and unplanned pregnancies, outcomes of each category of pregnancy, reasons underlying each outcome of pregnancy, and consequences of different pregnancy intentions and outcomes are still missing. Most existing studies focused on induced abortion and unwanted pregnancies resulting in induced abortion (Cook & Leoprapai, 1974; Koetsawang, 1980; Muangman, 1978; Warakamin et al., 2004).

Recent qualitative studies revealed insightful information concerning unplanned pregnancies from the women's perspective. From these findings, it was found that abortion can occur even with planned pregnancies especially when a woman's life had changed after conception such as when a partner died or abandoned her (Havanon, 1995; Ratchukul, 1998; Tharawan, 2002). Moreover, some women with unplanned pregnancies chose to carry a pregnancy to term in order to raise the child themselves or to apply for adoption services (Tharawan, 2002). These findings have given a clearer picture of the complexity of issues surrounding pregnancy planning, especially the differences between pregnancy intention before and after conception, and the outcome of different types of pregnancy intentions.

It will be instructive to use the existing in-depth knowledge on pregnancy planning to consider the number of pregnancies women have during their reproductive lifetime that are planned or unplanned, outcomes of these pregnancies, related characteristics of women, and underlying reasons for the various pregnancy outcomes and intentions. The results will be useful for policy makers, program managers and others to better understand the type and magnitude of problems related to pregnancy and its consequences. Finally, it is hoped the results will lead to the formulation of policy and the design of programs that will be more responsive to the needs of women.

1.3 Research Question

To what extent do women aged 15-59 experience unplanned pregnancies? What are the characteristics of unplanned pregnancies? What are the outcomes of unplanned pregnancies? What are the underlying reasons for pregnancy?

1.4 Objectives of the Study

The main objective of this study is to examine the unplanned pregnancy in women aged 15-59 in two communities in Thailand. The specific objectives of the study are:

1. To examine selected socio-demographic characteristics of women aged 15-59 and pregnancy intention before and after conception and the outcome of pregnancy; and
2. To examine the relationship between age at conception, contraceptive use prior to conception, pregnancy intention before and after conception, and outcomes of pregnancy

CHAPTER II
LITERATURE REVIEW

Pregnancies that are unplanned, unintended, unwanted, mistimed, or ended in an induced abortion are important reproductive health concerns. Researchers in many countries have been trying to understand these phenomena in order to prevent the adverse consequences to women, men, and children. There are a number of studies on these issues in different countries; however, there are very few studies on pregnancy intention and outcome of pregnancy in Thailand. This chapter reviews the existing literatures to understand the meaning and measurement of pregnancy intention and the relationship between pregnancy intention, outcome of pregnancy, and other factors such as socio-demographic characteristics and contraceptive use behavior.

2.1 Pregnancy Intention: Definition and Measurement

Pregnancy intention is very complex issue. Recently, researchers have been reviewing and evaluating the issue in terms of concept and measurement (Petersen & Moos, 1997; Bachrach & Newcomer, 1999; Trussell, Vanghan, & Stanford, 1999; Stanford, Hobbs, Jameson, De Witt, & Fisher, 2000; Sable & Libbus, 2000; Joyce, Kaestner, & Korenman, 2002; Santelli et al., 2003; D'Angelo, Gilbert, Rochat, Santelli, & Herold, 2004).

The 1997 comprehensive review of available literatures on pregnancy intention found the terms "unwanted," "unintended," and "mistimed" are often used interchangeably and there is no clear definition or distinction between these terminologies (Petersen & Moos, 1997). Prior to the 1960s, according to Petersen and Moos (1997), researchers assumed all pregnancies within marriage were wanted and those outside marriage were unwanted. Because during that time the society expected women to have children after she got married. The concept of pregnancy intention had changed specifically after the legalization of abortion in the United States in 1973. There has been an increasing recognition that pregnancies within marriage could be

unwanted because some married women ended their pregnancy by abortion. In addition, there were evidences that women had wanted pregnancy outside of marriage.

Warren B. Miller developed an instrument to measure the level of two distinct concepts of pregnancy intention and pregnancy wantedness in 1974. He used the contraception use to measure a woman's desire for conception, in other words, pregnancy intendedness. Woman's feelings about her pregnancy and her child were evaluated to measure the pregnancy intention after conception or pregnancy wantedness (Petersen & Moos, 1997). Later, Trussell and his colleagues (1999) had tried to examine whether pregnancy occurring when a woman used contraceptive method could be an unintended pregnancy. They found that there was a proportion of intended pregnancies among those pregnancies resulted from contraceptive failures, meaning that contraceptive failure does not consistently indicate that that pregnancy is unintended. The issue of pregnancy intention and contraceptive use will be discussed more in this Chapter.

As Petersen and Moos (1997) pointed out, "Recognition of the distinction between wantedness and intendedness has led to the development of separate definitions" (p. 235). The U.S. Institute of Medicine or IOM in 1995 defined the intendedness and unintendedness of pregnancy by using criteria in the National Survey of Family Growth (NSFG) (Brown & Eisenberg, 1995). They categorized pregnancy intention into two types, consisting of "intended at conception", meaning that the pregnancy was wanted at the time, or sooner, irrespective of whether or not contraception was being used; and "unintended at conception" which means a pregnancy had not been wanted at the time conception occurred, irrespective of whether or not contraception was being used. Of unintended pregnancies, a distinction is made between mistimed and unwanted: "mistimed conceptions" are those wanted by the woman at some point of time, but which occurred earlier than desired; and "unwanted conceptions" are those taking place when the woman did not want any pregnancies at all (Brown & Eisenberg, 1995, p. 22). However, Brown and Eisenberg (1995) pointed out there are limitations and ambiguities within the terms and definitions related to unintended pregnancy in the survey. For instance, it did not reflect the changing intention of women over the course of pregnancy. Many studies

explored this issue and found that women's intention about their pregnancy are not stable, specifically the intention may be increasingly positive over the course of pregnancy (Sable & Libbus, 2000; Joyce et al., 2000; D'Angelo et al., 2004).

Another limitation that Brown and Eisenberg (1995) mentioned is the husbands/partners' perspective with regard to intendedness and wantedness of pregnancy. The husbands/partners' perspective is one of the important dimension of pregnancy intention and it has effect on pregnancy outcome as pointed out by some studies (Montgomery, 1996; Joyce et al., 2000; Stanford et al., 2000). Research by Stanford and his colleagues (2000) found women indicating "their partners had a strong influence on preconception and postconception desire for pregnancy" (p. 183).

The retrospective nature of the questionnaire was also mentioned because the 1995 NSFG and all surveys interviewed the women after delivery which may not reflect the true intendedness of a pregnancy at the time of conception (Brown & Eisenberg, 1995; Petersen & Moos, 1997). This observation again reflects the complexity of the issue including the recall bias about women's feelings regarding conception. However, Joyce, Kaestner, and Korenman's findings (2002) found "no evidence that the retrospective assessment of pregnancy intention produced misleading estimates of either the number or the consequences of unintended births" (p.199). The results came from the comparisons between pregnancy intentions during pregnancy and after birth using data from the U.S. National Longitudinal Survey of Youth.

Brown and Eisenberg (1995) also pointed out that the definition of pregnancy intention and wantedness used in the NSFG was unable to address the complexity surrounding pregnancy intention, for example, a woman did not intend to become pregnant but also was not using contraception, or she wanted to be pregnant but was reluctant about childbearing. Petersen and Moos (1997) concluded in their analysis that "surveys have been limited in the past due to beliefs that only women of specific age, demographic, or marital status groups were at risk of unintended pregnancy" (p. 239).

Due to the complexity of the issue and limitations found in previous definitions and measurements of pregnancy intention, a number of researchers suggested recommendations to improve both the definition and measurement of

pregnancy intention (Brown & Eisenberg, 1995; Petersen & Moos, 1997; Bachrach & Newcomer, 1999; Stanford et al., 2000; Santelli et al., 2003). Stanford and his colleagues (2000) suggest five qualitative dimensions of pregnancy intendedness consisting of preconception desire for pregnancy, steps taken to prepare for pregnancy, fertility behavior and expectations, postconception desire for pregnancy, and adaptation to pregnancy and baby. Furthermore, research is needed to develop measures of pregnancy intendedness that accurately reflect the continuum of at least two dimensions: an affective dimension or the desire for a baby, which is related to community, partner and personal values about childbearing; and a planning dimension, which concerns preparation for pregnancy, life goals and education (Stanford et al., 2000). Suggestions made by Stanford and his colleagues are in consistent with many other scholars including Bachrach and Newcomer (1999), which confirmed that intended and unintended pregnancies are on opposite ends of a continuum rather than the distinct categories.

Brown and Eisenberg (1995) have recommended “researchers develop more refined and differentiated measures of intention status that can accommodate important concepts like ambivalence, denial, and confusion and that can address the feelings of men and couples as well as individual women” (Brown & Eisenberg, 1995, p. 24). Moreover, Santelli and his colleagues (2003) suggest the inclusion of cultural dimension that limits a woman’s ability to control her fertility by not assuming that pregnancy is a conscious decision and also consider the social construction of gender and gender inequality, women’s sexuality, relationship with male partners, relatives, peers, and health care providers. In addition, Bachrach and Newcomer (1999) suggest the most concrete improvement of measurement of pregnancy intention. First, they suggest combining traditional cross-sectional studies with new prospective measurement on intendedness and wantedness. Second, they suggest improving the retrospective measurement by changing question wording or by prompting respondents to recall in deeper details how they felt when they found their conception. Third, developing models of the predictors of reporting bias and use these models to control for error in analyses using retrospective data (Bachrach & Newcomer, 1999).

In a recent study by the researcher team at the Global Health Council focusing on the number of maternal deaths from unintended pregnancies applied another set of definition for unintended pregnancy. For them mistimed pregnancies were not counted as an unintended pregnancy since they wanted to obtain a conservative rate for maternal deaths. The reason they gave in their report was the number of associated maternal deaths would have been considerably higher if they include the number of mistimed pregnancies; the number of maternal death was already high without the mistimed pregnancy counted (Daulaire, Leidl, Mackin, Murphy & Stark, 2002).

In conclusion, the term “pregnancy intention” or “pregnancy planning” have been used loosely to define the willingness or intention to have a child and have been measured in many different ways. To date, there is no single concept or definition that internationally accepted.

2.2 Incidence of Unplanned Pregnancy

There are a number of methodological challenges when it comes to measuring the level of unplanned or unintended pregnancy, as mentioned earlier. Therefore, there is an inconsistency in the measurement among researchers making the compilation or the comparison of data difficult (Morin, St-Cyr-Tribble, De Wals & Payette, 2001; Santelli et al., 2003). Despite the inconsistency of definitions and measurements of unintended pregnancy, existing researches at global level and country level show a large proportion of pregnancies are unintended or unplanned. The Global Health Council conducted a research aiming to calculate the number of women who died from unintended and unwanted pregnancies during the six-year period between January 1, 1995, and December 31, 2000. They compiled a country-by-country profile of 227 countries. In the report released in 2002, unintended or unwanted pregnancies globally among women aged 15 to 45 were 338 million pregnancies or 28 percent of all pregnancies occurring during the six-year period. More than half of these unintended or unwanted pregnancies ended by induced abortion and resulted in the death of more than 400,000 women due to unsafe abortion. The number of women die from unintended pregnancy is increasing each year (Daulaire et al., 2002).

According to the Global Health Council's 2002 report, there was a disparity of the incidence of unintended pregnancies among different regions and countries. In a more developed region like Europe the proportion of unintended pregnancies was as high as 41 percent while it was about 18 percent in Africa. Latin America and the Caribbean's was 36.6 percent. North America and Asia had similar proportion at around 27-28 percent. However, if we look at the actual number of unintended pregnancies during the six-year period, 1995-2000, in each region, the largest number of unintended pregnancies occurred among the women in Asia by 174.2 millions out of the total 338 unintended pregnancies worldwide. The report concluded that the proportion and the number of unintended pregnancies will move upward as countries move through the transition from highly traditional and economically underdeveloped societies to those more economically developed and socially globalized. The key determinants were societal norms towards the desired family size and the access to quality family planning services (Daulaire et al., 2002).

Yet, there are countries having similar rate of unintended pregnancy although they are different in terms of their development characteristics. A recent estimation of unintended pregnancy in the U.S. found half of all pregnancies were unintended (Henshaw, 1998). This rate was similar to the Philippines' where nearly half of all pregnancies are unintended (Singh et al., 2006) and 40 percent for the Viet Nam's estimation (Le et al., 2004). In Thailand, the Alan Guttmacher Institute estimated 31 percent of births in the five years before the survey among Thai women aged 15 to 49 was unplanned; this estimation used data from the Demographic and Health Surveys in 1987 (AGI, 1999). The proportion of unintended pregnancies to the total number of pregnancies in Thailand during 1994-2000 was even higher. The Global Health Council revealed in their 2002 report that nearly 40 percent of pregnancies occurred during that period were unintended (Daulaire et al., 2002).

2.3 Reasons underlying Unintended Pregnancy

In a comprehensive study of unplanned pregnancy and induced abortion, the Alan Guttmacher Institute (1999) found many of the reasons for unplanned pregnancy and abortion were similar among different countries and regions. Those reasons were;

for instance, difficulties in contraceptive use either the inaccessibility, lack of knowledge, or contraceptive failures. Other reasons also included poverty; societal disapproval of pregnancy among women of some status like adolescents and unmarried women; sexual coercion which resulting in an unintended pregnancy (AGI, 1999). In addition, the Global Health Council's report found other condition such as displacement contributed also to unintended pregnancy (Daulaire et al., 2002: 17).

Findings from small scale studies conducted in Thailand also showed similar reasons behind unplanned or unintended pregnancy (Havanon, 1995; Ratchukul, 1998; Sethapongkul & Therawanwiwat, 1998). The reasons are lack of knowledge regarding reproductive health especially contraception; lack of comprehensive information about contraception; unexpected sexual intercourse which lead to non use of contraception; societal and family disapproval of some pregnancies; women with poor health prevent the use of contraceptive method; the change of life situation after conception, for instance, husband died or found out that he had another wife or partner's irresponsibility; woman confronted economic problems or had enough children; and pregnancy resulted from sexual coercion Furthermore, the latest in-depth study found a number of women had an unintended pregnancy because she had no authority to control her own fertility due to the imbalance power relation between husband and wife, the governed societal norm (Tharawan, 2002). Thus, men's role in reproductive decision making process is another important factor contributing to the reasons underlying unintended pregnancy or induced abortion. In the Philippines, 43 percent of women seeking an abortion discuss the issue with their husband or partner (Singh et al., 2006). However, there were very few studies focusing on this issue.

2.4 Socio-demographic Characteristics of Unplanned Pregnancy

Some studies had tried to examine and understand the unplanned pregnancy. In a study "The Best Intentions: Unintended Pregnancy and the Well-Being of Children and Families (1995)" undertaken in the United States, women of all socioeconomic, marital status, and age groups contribute to the pool of unintended pregnancies (Brown & Eisenberg, 1995, p.31). The proportion of unintended pregnancy is higher among unmarried and low-income women and among women at

either end of the reproductive age span (Brown & Eisenberg, 1995). The U.S. findings are similar to those found in the Viet Nam study. In Viet Nam, unintended pregnancies were associated with several factors such as older age of respondent, early age at marriage, husbands who were the same age or older, number of living sons, past history of unintended pregnancy, residential regions of the country, contraceptive use before the pregnancy, and a less favorable environment of contraceptive method supply at the district level (Le et al., 2004, p.23).

In Thailand, however, studies on the issue of pregnancy intention are rare. Most research involving unplanned pregnancy focused on abortions and referred to those abortions as unwanted or unintended pregnancies (Cook & Leoprapai, 1974; Muangman, 1978; Koetsawang, 1980; Havanon, 1995; Ratchukul, 1998; Tharawan, 2002; Warakamin et al., 2004). A study on unwanted pregnancies in 1998 collected data from 417 women with unwanted pregnancies at the shelter home and health clinics and found two in three were 15-24 years old with an average age at 24 years. Around one in three were single, another one in three was cohabited, and the rest were separated. Most of these women finished high school and had low economic status (Sethapongkul & Therawanwiwat, 1998).

2.5 Unplanned Pregnancy and Contraceptive Use

Most studies found a large proportion of women with unplanned pregnancy were not contraceptive users. In Viet Nam, approximately two-thirds of unplanned pregnancies resulted from nonuse of contraceptive and one-third resulting from ineffective use (Le et al., 2004). In the U.S., slightly less than half of unintended pregnancies occurred among women who did not use contraceptive methods (Henshaw, 1998).

An in-depth study of 77 women with unplanned pregnancy in Thailand found that, for married women who faced unintended pregnancy, some of them were not contraceptive users because of the side effects of contraceptive methods, especially the use of the pills or contraceptive injections, such as dizziness, weight lost, bleeding, or headache. Some women were contraceptive users but fail to use it correctly. Some cases of unintended pregnancy were caused by the failure of

contraceptive devices, for instance, an IUD became loosened or dislocated or the sterilization became ineffective. Use of inappropriate or highly risky contraceptive methods such as natural family planning methods or the frequent use of emergency contraceptive pills were also found in this study as the emergency contraceptive pills can be purchased easily over the counter in Thailand. And lastly, some couples did not use contraception at all due to their poor health (Tharawan, 2002). In addition, a community-based study done by Whittaker found the uncomfortable and unfamiliar state-run family planning services prevented women from using modern contraceptive methods. Thailand's national policy on family planning was established in the last three decades, the tensions in the transitions between traditional medicine practicing in community and the governmental health service providers still exist. Whittaker found in her study, for example, the health workers usually encourage women to get sterilization immediately right after the birth of their second child but the women believe the method would weaken them and they would not maintain the hard work as they usually did. Women in the study also understood that new contraceptive technology would weaken their health and their fertility, for instance, the pills could dry out their uterus (Whittaker, 2000).

On the other hand, Trussell, Vanghan, and Stanford's findings show about 68 percent of pregnancies resulted from contraceptive failures were unintended pregnancies and among those with intended pregnancies resulted from contraceptive failures, 90 percent reported being happy or very happy with the pregnancy (Trussell et al., 1999). This finding indicates an important issue that pregnancies occurring from contraceptive failures may not equivalent to unwanted pregnancies. The important question is why women who reported that they intended to conceive were contraceptive users at the time she became pregnant. Trussell and his colleagues found that women and couples have a complex mix of personalities, desires and intentions resulting in a variety of behaviors regarding both preventing and achieving pregnancy that go beyond simply practicing or not practicing contraception (Trussell et al., 1999).

2.6 Pregnancy Outcome

From the medical point of view, after conception, the possible outcome could be divided to four categories consisting of: “live birth” which means a baby after delivery shown the sign of living being, for instance, crying even if for a second; “still birth” means a delivered fetus that did not show a sign of living being after woman had carried a pregnancy for at least 28 weeks; “miscarriage or spontaneous abortion” means the unintended termination of pregnancy when the pregnancy is less than 28 weeks and a fetus show no sign of living being; and the last category is “induced abortion” which means the intended termination of pregnancy (IPSR, 2004).

Most studies on pregnancy intention dealt with pregnancies resulting in live births and assumed that pregnancies resulting in abortions were unintended pregnancies (Santelli et al., 2003). There have been very few studies on pregnancy intention and the outcome of pregnancy but there have been several studies on the consequences of unintended and unwanted pregnancies on the health of the child with association of the mother’s behaviors such as smoking, drinking, or obtaining the antenatal care (Brown & Eisenberg, 1995; Santelli et al., 2003). Besides, many research mentioned unintended and unwanted pregnancy only within the context of abortion (Havanon, 1995; Ratchukul, 1998; Okonofua et al., 1999; Singh et al., 2006).

2.7 Conceptual Framework

Based on the review of literatures, the conceptual framework is constructed as shown in Figure 2. Pregnancy intention is divided into intention before conception and after conception. Before conception, pregnancy planning could be ‘planned to conceive’, ‘planned not to conceive’, and a woman had no plan to conceive. After learning about their conception, it is assumed that women who had strong decision not to carry the pregnancy to term will try to terminate the pregnancy. Therefore, the attempted pregnancy termination will be an indirect indication for pregnancy intention after conception. The outcomes of pregnancy are divided into three categories: full-term pregnancy, miscarriage, and induced abortion. The detailed definitions of these terms are described in Methodology section. It is anticipated that pregnancy intention

before conception will have association with pregnancy intention after conception and then has an effect on outcome of pregnancy. Two other characteristics are chosen to examine if they have associations with intention and outcome of pregnancy, namely age at conception and contraceptive use prior to conception.

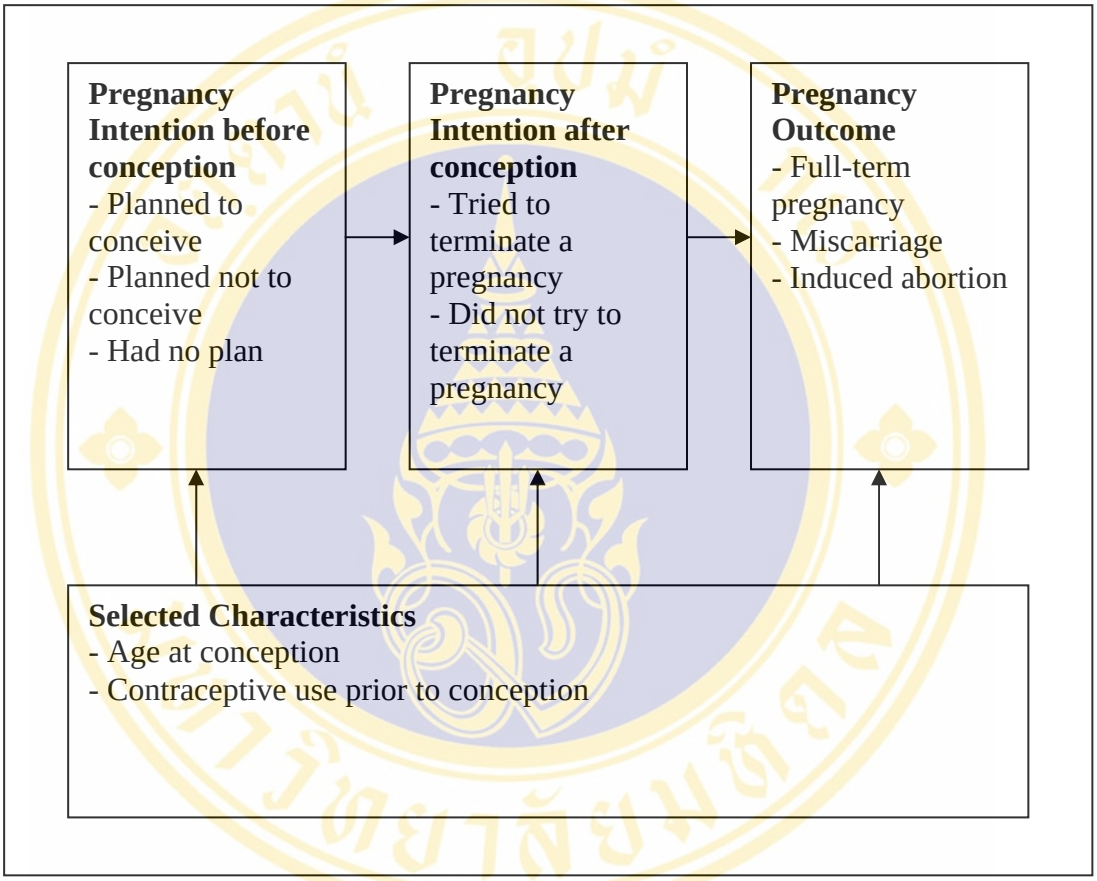


Figure 2: Conceptual Framework

CHAPTER III
RESEARCH METHODOLOGY

3.1 Sources of Data

The data was obtained from a census study on Pregnancy History of Women in Two Communities in Thailand, conducted by the Population Council-Bangkok Office in 2001. The author served as a supervisor for the data collection team. The study was a quantitative study using a structured questionnaire to interview all eligible women and collect data on demographic characteristics, general health and contraceptive utilization, and pregnancy history among women between the ages of 15-59 years old in the selected communities. The study employed the value-free survey technique (in an apparently confidential and non-threatening manner), using both direct and indirect questions in which a set of questions on pregnancy intention and its outcomes, including abortion, were included when interviewing women about their pregnancy history. Before conducting an interview, the interviewer would make herself familiar with the respondent to build a friendly environment for the interview. The interviewer would explain to the respondent about risk and confidentiality of the interview. The only possible risk was when the study participants were asked about personal matters that may have evoked emotional responses. However, the risks were minimal as researchers were trained to understand the sensitivity of the issue, and all interviews were conducted at a place where the study participants had confidence in their privacy. At the beginning of each interview, a researcher read a statement of informed consent to a potential study participant and confirmed that consent was both informed and voluntary.

The study was conducted in one community in the North and another community in the Northeast of Thailand. The two study sites were purposively selected based on their being semi-urban communities, the settings of households in the communities, being well-populated communities with low migration rates, and finally that the communities had concerned local health staff who were willing to

provide support to the study team. While the selection criteria mean that in no way can the communities be considered representative of communities in Thailand, they provided an ideal setting for the study.

Study participants included all Thai women between the ages of 15-59 years old who had lived in the study communities for at least 30 days on the day of interview, were present at the time of data collection, and were capable of understanding and responding to the questionnaire. All households of each study community were registered with household information provided by local health personnel at the two sites. If the eligible woman was not at home when the interviewer arrived, the interviewer would make an appointment to revisit her up to three times.

3.2 Unit of Analysis

This study aims to deal with all pregnancies women in the study had experienced. Of 913 women who were ever previously pregnant, the total number of pregnancies is 2,463. Since there were 29 ongoing pregnancies at the time of data collection, the total number of outcomes of pregnancies analyzed is 2,434.

3.3 Definition

In this study the dependent variable is pregnancy outcome. The independent variables are age at conception, contraceptive use at conception, pregnancy intention before conception, and pregnancy intention after conception. The following are the operational definitions of each variable.

3.3.1 Dependent Variables

The question was: *"What was the outcome of this pregnancy?"* There were seven categories of response: male live birth, female live birth, stillbirth, spontaneous abortion, induced abortion, therapeutic abortion, and an on-going pregnancy. The responses male live birth, female live birth, and stillbirth were merged together and

considered as full-term pregnancy because the number of stillbirths was very little (0.72 percent, *N* = 2434). Spontaneous abortion is classified as miscarriage. Therapeutic abortions and induced abortions were merged together and are treated as induced abortion because this study does not focus on the legality of abortion in Thailand. Therefore, this variable is categorized into three categories: full-term pregnancy, miscarriage, and induced abortion.

3.3.2 Independent Variables

3.3.2.1 Age at conception

This variable refers to the respondent's completed age at the time of conception. The variable was categorized into five categories: 1) below 20 years, 2) 20-24 years, 3) 25-29 years, 4) 30-34 years, and 5) 35 or more.

3.3.2.2 Contraceptive Use at Conception

This variable refers to the respondent's contraceptive use at the time of conception. The variable was categorized into two categories: 1) used, and 2) did not use.

3.3.2.3 Pregnancy Intention before Conception

The question was: *"Before you knew that you were pregnant, did you plan to have a child?"* There were three categories of response: 1) planned to have a child, 2) planned not to have a child, and 3) had no plan at all.

3.3.2.4 Pregnancy Intention after Conception

The question was: *"Sometimes a pregnant woman have difficult circumstances and has to do something, I would like to ask if you, after knowing about this conception, did you ever try to terminate the pregnancy?"* There were two categories

of response: 1) tried to terminate, and 2) did not try. This study chose this information to indirectly indicate women's intention after she learnt about the conception.

3.4 Proposed Analysis

Statistical Package for Social Science (SPSS 11.5 for Windows) was used for analysis. Initially, frequency distributions and cross-tabulations were used to identify some of the major background characteristics of the study population. Bivariate analysis was used to explore the relationship between the dependent and independent variables. The Chi-square test was employed to determine if the observed relationship may have occurred by chance.

3.5 Limitations of the Study

Since this study utilizes data from women's pregnancy history, the issue of recall bias is anticipated. The research team tried to reduce the recall bias as much as possible. For instance, by changing the question wording, by asking respondents to recall in more detail, and by adding more time when interviewing respondents during the pregnancy history section.

CHAPTER IV
RESULTS AND DISCUSSIONS

This chapter presents the results and discussions of the analysis of data related to the intentions and outcomes of pregnancies. The chapter commences with a description of the characteristics of women in the sample and then proceeds to examine the relationship between pregnancy intentions and outcomes, and the underlying reasons for the unplanned pregnancies. The unit of analysis for pregnancy intentions and outcomes is the individual pregnancy.

4.1 Women and Their Pregnancies

4.1.1 Socio-demographic Characteristics Background

Table 1 shows the general socio-demographic background of the women in the study (*N* = 913). The majority of women were currently married or cohabiting (81.6 percent). More than half of them were 35 years old or more (63 percent) and only small proportion were under 20 years old (1.3 percent). The oldest participant was 59 years old and the youngest one was 15. The average age of women in this study was 39 years old (*SD* = 10.626). One-third of the women had two pregnancies in their lifetime, nearly half of the women had three pregnancies or more, and 19.3 percent had only one pregnancy. The average number of pregnancies the women in this study ever had was 2.7 (*SD* = 1.5). The maximum number of pregnancies women in this study ever had was 15.

The majority of women participants have partners/husbands who were 35 years old or more (72 percent). The average age of the women's partners/husbands was 42 years old (*SD* = 10.9). The minimum age of a husband was 16 and the maximum age was 74 years old. According to levels of education, the percentage of women and their partners/husbands in each level is similar, except for the percentage of women reporting 'no schooling' is about three times greater than men. However,

the completion of primary education is quite high for both women (78.4 percent) and men (67.6 percent) reflecting the high literacy rate in Thailand.

Table 1: Percentage distribution of women by selected socio-demographic characteristics

Characteristics	Number	Percent
Partnership		
Single	11	1.2
Marriage/Cohabitated	745	81.6
Marriage but living separately	50	5.5
Divorced/Separated	65	7.1
Widowed	42	4.6
Age of respondents (years)		
below 20	12	1.3
20-24	72	7.9
25-29	105	11.5
30-34	151	16.5
35-39	131	14.3
40-44	129	14.1
45-49	129	14.1
50-54	97	10.6
55-59	87	9.5
Mean=39.23 SD=10.626 Min=15 Max=59		
Age of partner/husband (years)		
below 20	2	0.2
20-24	24	2.6
25-29	84	9.2
30-34	148	16.2
35-39	140	15.3
40-44	141	15.4
45-49	124	13.6
50-54	100	11
55-59	70	7.7
60 and more	80	8.8
Mean=42 SD=10.866 Min=16 Max=74		
Number of pregnancies (ever)		
One	176	19.3
Two	311	34.1
Three and more	426	46.7
Mean = 2.69 SD=1.475 Min=1 Max=15		

Table 1: Percentage distribution of women by selected socio-demographic characteristics (Continued)

Characteristics	Number	Percent
Respondent level of education		
No schooling	29	3.2
Primary	716	78.4
Secondary	124	13.6
Higher	44	4.8
Partner's/Husband's level of education*		
No schooling	8	0.9
Primary	613	67.6
Secondary	168	18.5
Higher	71	7.8
Do not know	47	5.2

(*6 missing cases, N=913)

4.1.2 All Pregnancies in Women Aged 15-59 Years

The total number of pregnancies in all women in this study is 2,463. The following sections explore selected characteristics of these pregnancies, namely age at conception, contraception use prior to conception, pregnancy intention before and after conception, and pregnancy outcome.

Age at Conception

Table 2 presents the frequency distribution of the age of women at conception by pregnancy order. On average, women had their first pregnancy when they were 21 years old (*SD=3.9*), the second pregnancy at 25 years old (*SD=4.5*), and later pregnancies came at age 28 years (*SD=5.2*). When looking at the minimum age at conception for each pregnancy order the data pointed to young women whose age was under 20 (13, 15, and 17 years of age). The maximum age at conception for each pregnancy order was 40 years or more (40, 41, and 47 years of age).

Table 2: Percentage distribution of total pregnancies according to age at conception

Age at Conception (years)	Pregnancy Order		
	1st	2nd	3rd and later
Below 20	35.0	10.8	1.5
20-24	46.2	43.0	22.5
25-29	14.9	32.3	37.6
30-34	2.8	10.1	24.4
35 and more	1.1	3.8	14.1
Mean	*21.4*	*24.7*	*28.4*
SD	*3.958*	*4.503*	*5.237*
Minimum age	*13*	*15*	*17*
Maximum age	*40*	*41*	*47*
n	914	740	809

(N=2463)

Contraceptive Use Prior to Conception

As can be seen in Table 3, the vast majority of women did not use contraceptive methods at the time they conceived (84.8 percent). Another 15.2 percent were using contraception but it failed resulting in an accidental pregnancy or unplanned pregnancy. The contraceptive pill was the contraceptive being used by almost two-thirds of women when contraceptive failure did occur (66 percent; *n* = 247).

Table 3: Percentage of pregnancies according to contraceptive methods used at the time of conception

Use of contraception	Number	Percent
Did not use	2089	84.8
Used	374	15.2
Pills	*247*	*66.0*
Injection	*51*	*13.6*
Intrauterine device	*44*	*11.8*
Natural family planning methods	*21*	*5.6*
Condom	*4*	*1.1*
Dual methods	*3*	*0.8*
Others (vasectomy, sterilization, implant, emergency pill)	*4*	*1.1*

(N=2463)

Pregnancy Intention Before and After Conception

Table 4 shows the frequency distribution of all pregnancies according to the women's intention before and after conception (*N* = 2463). When looking at the intention prior to conception, it was found that the percentage of those pregnancies in women planning to conceive is greater than half of the total pregnancies (54.9 percent), followed by 27.9 percent of pregnancies in women planning not to conceive, and another 16.1 percent of pregnancies in women who had no plan at all about pregnancy and childbearing at the time of conception.

Concerning women's intentions after conception, this study used the data on woman's efforts to terminate the pregnancy to indirectly indicate her intention. The findings show that only 13.9 percent of pregnancies were attempted to be terminated by women after they learned about the conception. This indicates that a large proportion of women who did not plan to conceive continued with the pregnancy after finding out they had conceived.

Table 4: Percentage of pregnancies according to intention before and after conception

Pregnancy Intention	Number	Percent
Before conception		
Planned to conceive	1353	54.9
Planned not to conceive	703	27.9
Had no plan about conception	407	16.1
After conception		
Ever attempted to terminate the pregnancy	350	13.9
Never attempted to terminate the pregnancy	2113	83.8

(N=2463)

Pregnancy Outcome

The total number of pregnancies in this study is 2,463 pregnancies, but the analysis of the outcomes of pregnancy required the exclusion of 29 pregnancies continuing at the time of data collection since the outcome of these pregnancies is still unknown. Therefore, the total number of observations for the analysis of the outcomes of pregnancy are 2,434 observations. As shown in Table 5, the majority of

conceptions occurring to women in the two communities resulted in full-term pregnancy (85.6 percent), meaning that the women carried the pregnancies to term resulting in either a live birth or a stillbirth. Pregnancies resulting in spontaneous abortion or miscarriage accounts for 6.5 percent of the total. Induced abortion, which consists of both therapeutic and non-therapeutic abortion, accounts for 7.9 percent of the total pregnancies.

Table 5: Percentage of pregnancies according to pregnancy outcome

Pregnancy outcome	Number	Percent
Full-term pregnancy	2083	85.6
Miscarriage	159	6.5
Induced abortion	192	7.9

(*29 ongoing pregnancies at the time of interview are excluded; N=2434)

4.2 Relationship between Pregnancy Intention and Pregnancy Outcome

Bivariate analysis was conducted to explore the relationship between pregnancy intention before and after conception, the outcome of pregnancy, and selected characteristics, including age at conception and contraception prior to conception. The Chi-square test was employed to determine if the observed relationship between the variables in the sample may have occurred by chance. The analysis started from the pregnancy intention before conception, followed by the pregnancy intention after conception, outcome of pregnancy, and lastly the association between pregnancy intention before and after conception and the pregnancy outcome.

4.2.1 Pregnancy Intention before Conception

Age at Conception

The findings in Table 6 show that slightly more than half of pregnancies occurring to women aged 20-24 (57.8 percent; *n* = 922), 25-29 (58.2 percent; *n* = 679), and 30-34 (58.7 percent; *n* = 298) are pregnancies the women planned to

conceive. But in the group of pregnancies occurring to women below 20 and women at 35 or more, the proportion of pregnancies the women were planning to conceive was less than half at 47.1 percent and 36.8 percent, respectively. Specifically, among women aged 35 or more, the proportion of pregnancies that occurred while the woman reported planning not to conceive is greater than the proportion of pregnancies that occurred when the woman reported she was planning to conceive (43.4 percent to 36.8 percent). Compared to the other age groups, women aged 35 or more have the highest rates of pregnancies while they 'planned not to have a child' or 'had no plan to have a child'.

Looking at the 'planned not to conceive' and the 'had no plan to conceive' pregnancies as unplanned pregnancies, it is clear that women at both ends of the reproductive age span, i.e. below 20 and 35 or more, are more likely to have unplanned pregnancies. From Table 6, the pregnancy intention before conception is associated with age at conception ($p < 0.0001$).

Table 6: Percentage of pregnancy intentions before conception by age at conception

Age at Conception* (years)	n	Pregnancy Intention before Conception		
		Planned to Conceive	Had no plan To Conceive	Planned not to Conceive
Below 20	412	47.1	18.7	34.2
20-24	922	57.8	17.0	25.2
25-29	679	58.2	15.6	26.2
30-34	298	58.7	12.4	28.9
35 or more	152	36.8	19.7	43.4
		χ^2 = 44.221, p<0.0001		

(N=2463)

Contraceptive Use Prior to Conception

Looking at Table 7 presenting each pregnancy intention before conception and the use of contraception, several questions arose. Contrary to general expectations, most pregnancies occurring to women who stated they were planning not to conceive were also pregnancies occurring to women who did not use contraception to prevent

pregnancy (62.3 percent; *n* = 703). In other words, 37 percent of pregnancies occurring to women who reported planning not to conceive among women that tried to prevent pregnancy by using some method of contraception but failed.

On the other hand, a small portion of those pregnancies among women who were planning to conceive occurred while the women were taking contraception (5.5 percent; *n* = 1353). And a relatively greater proportion of pregnancies occurred when women who had no plan to conceive were using contraception (8.6 percent; *n* = 407).

These findings reflect the complexity of women's pregnancy intentions. The Chi Square Test showed an association between pregnancy intention before conception and contraceptive use ($p < 0.0001$). However, further investigation is needed if we want to have greater insight into the relationship between the two factors, and the reasons behind the observed contradiction.

Table 7: Percentage of pregnancy intention before conception and contraception used prior to conception

Pregnancy Intention before Conception	n	Use of Contraception prior to Conception	
		Used	Did not use
Planned to conceive	1353	5.5	94.5
Had no plan to conceive	407	8.6	91.4
Planned not to conceive	703	37.7	62.3
		$\chi^2 = 389.468$, p<0.0001	

(N=2463)

4.2.2 Pregnancy Intention after Conception

As mentioned earlier, pregnancy intention after conception refers to women's experience of attempted pregnancy termination after they learned about their conception. This section explores the associations between age at conception and contraceptive use with the pregnancies the women had ever tried to terminate and the pregnancies the women had never tried to terminate.

Age at Conception

The findings from Table 8 reveal that pregnancies among women aged 35 or more had the highest rate of attempted pregnancy termination (23.7 percent, *n* = 152), followed by the rate for women below 20 (18.2 percent, *n* = 412). The other three age groups have comparable rates for attempted pregnancy termination. One possible reason is that women at both ends of reproductive age span had a greater proportion of unplanned pregnancies compared to other age groups therefore they are more likely to try to terminate their pregnancies ($p = 0.0003$).

Table 8: Percentage of pregnancy intention after conception by age at conception

Age at Conception (years)	n	Intention after Conception	
		Tried to terminate	Did not try
Below 20	412	18.2	81.8
20-24	922	12.8	87.2
25-29	679	11.9	88.1
30-34	298	13.4	86.6
35 or more	152	23.7	76.3
		χ^2 = 21.138, p=0.0003	

(N=2463)

Contraceptive Use Prior to Conception

The rate of attempted pregnancy termination is exceptionally high among pregnancies occurring when women were on contraception (38.2 percent, *n* = 374) compared to the other group (9.9 percent, *n* = 2089). It is more likely that a woman would try to terminate her pregnancy when she experiences contraceptive failure ($p < 0.0001$). Considering the proportion of pregnancies occurring despite of the use of contraception as presented in Table 3 and the proportion of 'planned not to conceive' pregnancies that women experienced while using contraception in Table 7, we could say that the attempted pregnancy termination was more common among the 'planned not to conceive' pregnancies.

Table 9: Percentage distribution of pregnancy intention after conception by the contraceptive use prior to conception

Contraceptive Use	N	Pregnancy Intention after Conception	
		Tried to terminate	Did not try
Did not use	2089	9.9	90.1
Used	374	38.2	61.8
		χ^2 = 208.778, p<0.0001	

(N=2522)

4.2.3 Pregnancy Outcome

In this section, the associations between each type of pregnancy outcome and other factors, namely age at conception, contraceptive use prior to conception, pregnancy intention before conception, and attempted pregnancy termination will be explored.

Age at Conception

The lowest percentage of pregnancies resulting in full-term pregnancy occurred to women aged 35 or more (72.8 percent; *N* = 2434), while the highest percentage of pregnancies resulting in induced abortion also occurred in this age group (16.6 percent). These results are consistent with the findings on pregnancy intention before conception and pregnancy termination in which women aged 35 or more have the highest rate of unplanned pregnancies and attempted pregnancy terminations (See Table 6 and 8 for details). The rate of miscarriages is also highest among this age group (10.6 percent) compared to other groups, reflecting an increased risk of miscarriage for older women. The second lowest percent of pregnancies resulting in full-term pregnancy is among women under 20 (84.4 percent), as well as the second highest percent of successfully induced abortions (9.0 percent). These findings also correspond to the unplanned pregnancy and the attempted pregnancy termination rates among this age group as discussed previously. It is also clear from the Chi Square test that age at conception is strongly associated with pregnancy outcome; again, this relationship needs further investigation.

Table 10: Percentage distribution of pregnancy outcome by age at conception

Age at Conception (years)	n	Outcome of Pregnancy		
		Full-term pregnancy	Miscarriage	Induced abortion
Below 20	410	84.4	6.6	9.0
20-24	912	87.4	6.5	6.1
25-29	666	85.9	6.8	7.4
30-34	295	87.5	4.1	8.5
35 or more	151	72.8	10.6	16.6
		χ^2 = 28.977, p = 0.0003		

(N=2434)

Contraceptive Use Prior to Conception

The association between pregnancy outcome and the use of contraception prior to conception is quite clear. As seen in Table 11, the percent of full-term pregnancy is higher in pregnancies among women who did not use any contraceptive methods prior to the conception (88.2 percent; *n = 2069*) than in pregnancies resulting from contraceptive failure (71.0 percent; *n = 365*). As expected, the proportion of pregnancies that ended in an induced abortion between the pregnancies with no use of contraception (5.7 percent) and the pregnancies that resulted from contraceptive failure (20.3 percent) are very different ($p < 0.0001$). It should be noted that most pregnancies occurring because of contraceptive failure are pregnancies the women planned not to conceive (37.7 percent, see Table 7 for more details).

Table 11: Percentage distribution of pregnancy outcome by the use of contraceptive methods prior to conception

Used of Contraception	n	Outcome of Pregnancy		
		Full-term pregnancy	Miscarriage	Induced abortion
Did not use	2069	88.2	6.1	5.7
Used	365	71.0	8.8	20.3
		χ^2 = 97.513, p < 0.0001		

(N=2434, 29 cases being pregnant at the time of interview are not included)

Pregnancy Intention before Conception

From Table 12, an association between pregnancy intention before conception and pregnancy outcome exists ($p < 0.0001$). As would be expected, planned pregnancies resulted in the highest percentage of full-term pregnancies (92.8 percent; $n = 1338$) compared to pregnancies occurring when women had no plan to have a child (88.9 percent; $n = 406$) and pregnancies occurring when women planned not to have a child (69.6 percent; $n = 690$). However, there were 17 cases (1.3 percent; $n = 1338$) of induced abortion in the planned pregnancies group. Seven out of 17 cases were therapeutic abortions in which the doctor gave advice to the woman that the pregnancy was harmful to her health or the fetus was defective. Ten cases in this group were planned pregnancies which ended in induced abortion because of many reasons. The most frequently mentioned reason was the irresponsibility of their male partners and the second most common reason was economic difficulties experienced after she got pregnant.

The outcome of induced abortion is very high in the 'planned not to have a child' intention group (22.5 percent; $n = 690$) compared to the other two groups, as expected. In addition, the percentage of full-term pregnancy outcomes in this group is the lowest among the three different intention groups (69.6 percent).

The pregnancy outcomes among women who had no plan at all about childbearing were in between the first two groups of pregnancy intention, with 88.9 percent of pregnancies resulting in full-term pregnancy, 6.2 percent in miscarriages, and 4.9 percent in induced abortion. This finding suggests that although many women did not think about their fertility prior to the unplanned pregnancy, the majority of the respondents decided to carry the pregnancy to term when they became aware of their unintended or unplanned pregnancy.

Table 12: Percentage distribution of pregnancy outcome by intention prior to conception

Intention before Conception	n	Outcome of Pregnancy		
		Full-term pregnancy	Miscarriage	Induced abortion
Planned to conceive	1338	92.8	5.9	1.3
Had no plan	406	88.9	6.2	4.9
Planned not to conceive	690	69.6	8.0	22.5
		χ^2 = 296.95, p<0.0001		

(N=2434)

Pregnancy Intention after Conception

The association between pregnancy intention after conception (using attempted pregnancy termination as an indirect indicator for women's pregnancy intention after conception) and the outcome of pregnancy seemed very strong (p < 0.0001). Pregnancies with attempted termination resulted in a successfully induced abortion for up to 51.7 percent of the attempts. The 0.7 percent of induced abortions for pregnancies without an attempted termination was the therapeutic abortions performed by physicians.

Table 13: Percentage distribution of pregnancy outcome by intention after conception

Intention after Conception	N	Outcome of Pregnancy		
		Full-term pregnancy	Miscarriage	Induced abortion
Tried to terminate	344	47.1	1.2	51.7
Did not try to terminate	2090	91.9	7.4	0.7
		χ^2 = 1063.829, p<0.0001		

(N=2434)

4.2.4 Intention before and after Conception and the Outcome of Pregnancy

From Table 14, the percentage of pregnancies reaching full-term is very high when there is no attempted pregnancy termination involved, ranking from 85.6

percent in the ‘planned not to conceive’ pregnancies to 93.6 percent in the ‘planned to conceive’ pregnancies. When pregnancy termination is attempted, the percentage of full-term pregnancies drops dramatically, from 48.6 percent in the ‘had no plan to conceive’ pregnancies to 47 percent of ‘planned not to conceive’ pregnancies. At the same time, the percentage of successfully induced abortions was fairly high at around 50.0 to 51.9 percent in all three pregnancy intention groups before conception if the women had tried to terminate their pregnancies.

Therefore, pregnancy outcome is strongly associated with a woman’s intention after conception ($p < 0.0001$). Regardless of pregnancy intention prior to conception, if she did not want to carry a pregnancy to term and tried to terminate her pregnancy, it is likely that a woman’s pregnancy would have resulted in a successfully induced abortion.

It should be noted in Table 14 that all pregnancies that resulted in induced abortion without an attempted termination of pregnancies were therapeutic abortions prescribed by doctors for various reasons, including ectopic pregnancy, tumors in the womb, and heavy bleeding during pregnancy.

Table 14: Percentage distribution of pregnancy intention before conception by outcome of pregnancy and intention after conception

Pregnancy intention before conception	**Pregnancy outcome**	**Pregnancy intention after conception**		**Total**	χ^2	**P Value**
		Tried to terminate	**Did not try to terminate**			
Planned to conceive					384.781*	<0.0001
	Full-term pregnancy	9	1234	1243		
		45.0	*93.6*	*92.8*		
	Miscarriage	1	78	79		
		5.0	*5.9*	*5.9*		
	Induced abortion	10	7	17		
		50.0	*0.5*	*1.3*		
	Total	20	1319	1339		
		100	*100*	*100*		

Table 14: Percentage distribution of pregnancy intention before conception by outcome of pregnancy and intention after conception (Continued)

Pregnancy intention before conception	Pregnancy outcome	Pregnancy intention after conception		Total	χ^2	P Value
		Tried to terminate	Did not try to terminate			
Planned not to conceive					254.676**	<0.0001
	Full-term pregnancy	135	344	479		
		47.0	*85.6*	*69.5*		
	Miscarriage	3	52	55		
		1.0	*12.9*	*8.0*		
	Induced abortion	149	6	155		
		51.9	*1.5*	*22.5*		
	Total	287	402	689		
		100	*100*	*100*		
Had no plan to conceive					188.048***	<0.0001
	Full-term pregnancy	18	343	361		
		48.6	*93.0*	*88.9*		
	Miscarriage	0	25	25		
		0.0	*6.8*	*6.2*		
	Induced abortion	19	1	20		
		51.4	*0.3*	*4.9*		
	Total	37	369	406		
		100	*100*	*100*		

Note: *1 cell has observations less than 5; **1 cell has observations less than 5; ***2 cells has observations less than 5, N=2434

4.2.5 Trends of Pregnancy Intention and Pregnancy Outcome in the Two Communities

This study collected data for each pregnancy a woman ever had in her reproductive lifetime, including age at each pregnancy. Therefore, the author can calculate the exact year each pregnancy occurred. This information is very useful since it provides trends of pregnancy intention and pregnancy outcome from the first pregnancy to the latest pregnancy occurring in the two communities. Also, it provides an answer to the question whether or not the issue of unplanned pregnancy is relevant to the present day.

As shown in Table 15, total numbers of pregnancies in each period rose because the number of women of reproductive age increased every year. From the period of 1959-1970 to 1991-2001, the proportion of pregnancies where the women planned not to conceive increased and the proportion of pregnancies occurring with no plan decreased, indicating that women were more aware of their fertility and were more likely to control their fertility. However, the proportion of unplanned pregnancies, consisting of pregnancies planning not to conceive and pregnancies without any plan, over the four periods are comparable and are a high proportion of the total pregnancies studied, between 40 to 51 percent. What is most interesting is that the contribution of pregnancies that occurred while women had 'planned not to conceive' to the total unplanned pregnancies has increased over time.

The proportion of women terminating their pregnancy through abortion has also increased, from 6.1 percent during 1959-1970 to 21.8 percent during 1991-2001. Consequently, the proportion of successfully induced abortion has been increasing over the periods studied. These results indicate that as the desire to control fertility has increased the motivation to terminate pregnancies has also increased. This evidence suggests that in Thailand issues related to pregnancy intentions and pregnancy outcomes have become more central to women over time.

Table 15 Percentage of pregnancies according to pregnancy intention and pregnancy outcome over four time periods

Pregnancy Intention and Outcome	Time Periods			
	1959-1970	1971-1980	1981-1990	1991-2001
Intention before conception				
Planned to conceive	49.4	52.1	60.5	55.4
Planned not to conceive	24.8	25.0	26.6	35.3
Had no plan	25.8	22.9	12.9	9.4
N	*314*	*687*	*714*	*737*
Intention after conception				
Tried to terminate a pregnancy	6.1	7.7	16.0	21.8
Did not try to terminate a pregnancy	93.9	92.3	84.0	78.2
N	*314*	*687*	*714*	*737*

Table 15 Percentage of pregnancies according to pregnancy intention and pregnancy outcome over four time periods (Continued)

Pregnancy Intention and Outcome	Time Periods			
	1959-1970	1971-1980	1981-1990	1991-2001
Pregnancy outcome*				
Full-term pregnancy	92.3	88.6	83.8	82.1
Miscarriage	4.8	6.1	7.1	6.8
Induced abortion	2.9	5.2	9.1	11.1
N	*313*	*686*	*714*	*737*

(*pregnancies at the time of interview are not included)

4.3 Reasons underlying the unplanned pregnancies

As mentioned before, the unplanned pregnancies in this study consist of pregnancies women planned not to conceive and pregnancies women had no plan to conceive. Several studies in Thailand found that there is usually more than one reason underlying any unplanned pregnancy (Havanon, 1995; Ratchukul, 1998; Tharawan, 2002). This study had similar findings. When asking the women in this study to explain why they had an unplanned pregnancy, all of them gave multiple reasons. It is interesting and useful to look at the reasons women most frequently gave for their unplanned pregnancy.

As shown in Table 16, economic difficulties is the most frequently cited reason women gave for their unplanned pregnancy (45.0 percent), followed by lack of knowledge of contraception (27.9 percent), and contraceptive failure (23.7 percent).

Other reasons mentioned by women for their unplanned pregnancy included inadequate spacing between children (20.4 percent) and they underestimated their own fertility (19.7 percent). That is, they thought that pregnancy could not occur if it was the first time they had sexual intercourse or if they seldom had sexual intercourse. Other common reasons were they had just married or cohabited at the time of conception and consequently they were not ready to raise a child (17.6 percent) and that they already had enough children (17.5 percent).

Less frequently mentioned reasons women gave as the reason for an unplanned pregnancy included because the pregnancy occurred when she was in school (0.7 percent); the pregnancy occurred as a consequence of rape (1.2 percent); the pregnancy occurred when her health was not good (2.5 percent); and the pregnancy occurred when she was unmarried (5.6 percent).

As could be expected, some reasons underlying unplanned pregnancies were frequently mentioned in some groups of age at conception. For instance, women below 20 often mentioned a lack of knowledge on contraception, just married or cohabited, too young to be a mother, pregnancy resulted from rape, being in school at the time of conception, and family disapproval of pregnancy. There are no significance differences of reasons underlying unplanned pregnancies between age group, however.

Table 16 Reasons for unplanned pregnancies by rank

Rank Order	Reasons	Percent*
1	Economic difficulties	45.0
2	Lack of knowledge of contraception	27.9
3	Contraceptive failure	23.7
4	Child spacing was too close	20.4
5	Underestimate of fertility	19.7
6	Just married or cohabited	17.6
7	Had enough children	17.5
8	Irresponsibility of husband or partner	9.3
9	Too young to be a mother	9.0
10	Family disapproval of pregnancy	6.7
11	Unmarried at the time of conception	5.6
12	Had serious health problem at the time of conception	2.5
13	Pregnancy resulted from rape	1.2
14	Being in school at the time of conception	0.7

***denominator is the total of 1,027 pregnancies**

Reasons for Planning not to Conceive

In this study, there were 644 pregnancies among women who planned not to conceive and gave reasons why they did not want to have a child. Among all reasons,

economic difficulties, contraceptive failure, and lack of knowledge about contraception were the top three reasons mentioned by women (54.0 percent, 32.8 percent, and 23.9 percent respectively). While the three most seldom reasons the women mentioned were 'being in school at the time of conception' (0.9 percent), 'had serious health problems at the time of conception' (1.6 percent), and 'pregnancies resulted from rape' (2.2 percent).

Table 17 Reasons women planned not to conceive by rank

Rank Order	Reasons	Percent*
1	Economic difficulties	54.0
2	Contraceptive failure	32.8
3	Lack of knowledge of contraception	23.9
4	Child spacing was too close	23.0
5	Had enough children	22.5
6	Underestimate of fertility	18.6
6	Just married or cohabited	18.6
7	Irresponsibility of husband or partner	11.6
8	Too young to be a mother	10.9
9	Family disapproval of pregnancy	8.5
10	Unmarried at the time of conception	7.3
11	Had serious health problem at the time of conception	2.2
12	Pregnancy resulted from rape	1.6
13	Being in school by the time of conception	0.9

***denominator is the total of 644 pregnancies**

As shown in Table 18 and Table 19, there are some differences in the reasons for an unplanned pregnancy stated by women experiencing pregnancies when they were planning not to conceive and they tried to terminate the pregnancy with the women experiencing pregnancies while planning not to conceive but who did not try to terminate the pregnancy. Women attempting to terminate their pregnancies mentioned contraceptive failure more often as the reason for their accidental pregnancy than women who did not try to terminate their pregnancy, 39.6 percent and 28.0 percent respectively. This finding supports the result found in Table 9 that women who had a pregnancy as a result of contraceptive failure are more likely to attempt pregnancy termination. The irresponsibility of her husband or partner was also mentioned more among women attempting an induced abortion compared to

women who had never attempted an induced abortion (ranked at number six and number nine, respectively, See Table 18 and 19). However, economic problems are still ranked highest among other reasons for both groups.

Table 18 Reasons for pregnancy when a woman planned not to conceive and tried to terminate the pregnancy by rank

Rank Order	Reasons	Percent*
1	Economic difficulties	56.6
2	Contraceptive failure	39.6
3	Child spacing was too close	25.7
4	Had enough children	24.2
5	Underestimate of fertility	19.2
6	Irresponsibility of husband or partner	18.1
7	Just married or cohabited	15.8
8	Lack of knowledge of contraception	15.5
9	Family disapproval of pregnancy	14.0
10	Too young to be a mother	12.1
11	Unmarried at the time of conception	11.7
12	Pregnancy resulted from rape	3.0
13	Had serious health problem at the time of conception	2.6
14	Being in school by the time of conception	1.5

***denominator is the total 265 pregnancies**

Table 19 Reasons for pregnancy when a woman planned not to conceive and did not try to terminate the pregnancy by rank

Rank Order	Reasons	Percent*
1	Economic difficulties	52.2
2	Lack of knowledge on contraception	29.8
3	Contraceptive failure	28.0
4	Had enough child	21.4
5	Child spacing was too close	21.1
6	Just married or cohabited	20.6
7	Underestimate of fertility	18.2
8	Too young to be a mother	10.0
9	Irresponsibility of husband or partner	7.1
10	Family disapproval of pregnancy	4.7
11	Unmarried at the time of conception	4.2
12	Had serious health problem at the time of conception	1.8
13	Pregnancy resulted from rape	0.5
13	Being in school by the time of conception	0.5

***denominator is the total 379 pregnancies**

Reasons for 'Had no Plan to Conceive' Pregnancies

When looking at pregnancies the women had no plan to conceive in Table 20, the first three reasons women gave for their pregnancy were lack of knowledge about contraception (34.7 percent), economic difficulties (29.8 percent), and the underestimation of their own fertility (21.4 percent). In other words, they did not think about getting pregnant because it was the first time they had sexual intercourse or they seldom had sexual intercourse. The reasons women least mentioned were the pregnancies occurred when she was in school (0.3 percent), the pregnancy resulted from rape (0.5 percent) and the pregnancy occurred when she was unmarried (2.6 percent).

Economic problems seemed to be a strong reason for attempted pregnancy termination. As shown in Table 21, women who had no plan about pregnancy and child bearing often mentioned economic difficulties as their underlying reason for pregnancy termination (52.8 percent). While in Table 22, women who had not attempted to terminate the pregnancies although they did not plan for it mentioned lack of knowledge on contraception most often as the cause of their pregnancy (36.4 percent).

These figures only describe the reasons women gave for their different pregnancy intentions. The relations or associations between these reasons and each pregnancy intention are not explored in this study.

Table 20 Reasons for pregnancy when a woman had no plan to conceive by rank

Rank Order	Reasons	Percent*
1	Lack of knowledge of contraception	34.7
2	Economic difficulties	29.8
3	Underestimate of fertility	21.4
4	Just married or cohabited	15.9
4	Child spacing was too close	15.9
5	Had enough children	9.1
6	Contraceptive failure	8.4
7	Too young to be a mother	5.7
8	Irresponsibility of husband or partner	5.2
9	Family disapproval of pregnancy	3.7
10	Had serious health problem at the time of conception	3.1

Table 20 Reasons for pregnancy when a woman had no plan to conceive by rank (Continued)

Rank Order	Reasons	Percent*
11	Unmarried at the time of conception	2.6
12	Pregnancy resulted from rape	0.5
13	Being in school by the time of conception	0.3

***denominator is the total of 383 pregnancies**

Table 21 Reasons for pregnancy when a woman had no plan to conceive and tried to terminate the pregnancy by rank

Rank Order	Reasons	Percent*
1	Economic difficulties	52.8
2	Underestimate of fertility	25.0
2	Child spacing was too close	25.0
2	Contraceptive failure	25.0
3	Lack of knowledge of contraception	19.4
3	Irresponsibility of husband or partner	19.4
4	Too young to be a mother	16.7
4	Family disapproval of pregnancy	16.7
5	Unmarried at the time of conception	13.9
6	Just married or cohabited	11.1
6	Had enough children	11.1
7	Had serious health problem at the time of conception	5.6
8	Pregnancy resulted from rape	2.8
	Being in school by the time of conception	0.0

***denominator is the total of 36 pregnancies**

Table 22 Reasons for pregnancy when a woman had no plan to conceive and did not try to terminate the pregnancy by rank

Rank Order	Reasons	Percent*
1	Lack of knowledge of contraception	36.4
2	Economic difficulties	27.5
3	Underestimate of fertility	21.1
4	Just married or cohabited	16.5
5	Child spacing was too close	15.0
6	Had enough children	9.0
7	Contraceptive failure	6.6
8	Too young to be a mother	4.6
9	Irresponsibility of husband or partner	3.8
10	Had serious health problem at the time of conception	2.9

Table 22 Reasons for pregnancy when a woman had no plan to conceive and did not try to terminate the pregnancy by rank (Continued)

Rank Order	Reasons	Percent*
11	Family disapproval of pregnancy	2.3
12	Unmarried at the time of conception	1.4
13	Pregnancy resulted from rape	0.3
13	Being in school by the time of conception	0.3

***denominator is the total of 346 pregnancies**

The main objective of this study was to examine unplanned pregnancy in women aged 15-59 living in two communities in Thailand. Among the total of 2,463 pregnancies studied, only about 55 percent of them were a planned pregnancy. The rest are so-called an “unplanned pregnancy” consisting of pregnancies women planned not to conceive and pregnancies women had no plan to conceive or had not thought about conception at the time she conceived. Therefore, an unplanned pregnancy in these two communities is estimated to be almost 45 percent of the total pregnancies.

A woman in this study who planned not to conceive or planned not to have a child had clearly already made plans about her reproduction; therefore, we could say that the conception was unwanted. This definition is similar to that of ‘unwanted conception’ used in the U.S. National Survey of Family Growth. The definition of the ‘had no plan to conceive’ in this current study is similar to the definition of ‘mistimed conception’ using the same U.S. survey, which refers to those pregnancies that were wanted by the woman at sometime but which occurred sooner than they were wanted (Brown & Eisenberg, 1995). However, the terms: mistimed conception and unwanted conception have limitations and ambiguities as Brown and Eisenberg (1995) have pointed out. The main limitation is that these terminologies focus solely on woman’s intention at the time of conception which do not reflect the woman’s changing intentions after acknowledging the conception. Several studies explored this issue and found that women’s pregnancy intentions are not stable over the course of pregnancy (Sable & Libbus, 2000; Joyce et al., 2000; D’ Angelo et al., 2004). This current study also found the same results.

In this study, 1.5 percent of pregnancies a woman planned to conceive had gone through an attempted pregnancy termination indicating changes in the decisions made by women although they had once planned to have a child. In addition, nearly 58.4 percent of pregnancies among women planning not to conceive or “unwanted pregnancies” had not gone through the attempted pregnancy termination, contrary to general expectations. Tharawan (2002) also found in her in-depth study that women with unplanned pregnancies did not always want to have an abortion.

Looking solely at preconception intention might neglect the fact that women are not always aware of their fertility and, hence, are not always planning prior to conception. Santelli and his colleagues (2003) also suggested that there are cultural factors that limit a woman’s ability to control her fertility. Thus, a researcher should not assume that pregnancy is a conscious decision. In this study, 16.1 percent of pregnancies occurred when a woman had not thought about their reproductive ability or childbearing at all at the time she conceived. As expected, the majority of these pregnancies occurred because the women did not use contraceptive methods (91.4 percent). In addition, in about nine percent of these pregnancies the women had attempted pregnancy termination, and about 51 percent resulted in successfully induced abortions. On the other hand, the fact that many women who had no plan to conceive still carried their pregnancies to term should not lead us to think that the situation is acceptable. The better choice is for a woman to plan to conceive and to be ready to raise a child.

Another specific objective of this study was to examine the association between pregnancy intention, pregnancy outcome, age at conception, and contraceptive use prior to conception. This study found that women at both ends of the reproductive age span are more likely to have unplanned pregnancies than other age groups. These results are similar to the U.S. study mentioned above (1995). Specifically, the group of women over the age of 35 had the highest rates of induced abortion and miscarriage while having the lowest rates of full-term pregnancy. This is in accordance with a 2000 Danish population-based study which found that about nine percent of recognized pregnancies for women aged 20 to 24 ended in miscarriage and the risk rose to about 20 percent at age 35 to 39, and more than 50 percent by age 42 (Anderson A.N. et al., 2000).

Contraceptive failure also has a strong association with pregnancy intention and outcome. Accidental pregnancies due to contraceptive failure resulted in successful induced abortions at about four times the rate of pregnancies occurring without contraceptive use. Westoff (2005) found in his comparative study between 12 countries that the association between abortion and contraceptive use reflects a motivation to control fertility.

Miscarriages among women experiencing accidental pregnancies are also higher and full-term pregnancies are much lower than among other groups. Pregnancies occurring due to contraceptive failure were mostly likely to occur among women who planned not to conceive as they are more motivated to use contraceptive methods correctly, and once the failure occurred they are more likely to terminate the pregnancy. Looking across methods of contraceptive use, it would appear that failure leading to unplanned pregnancy is highest among pill users. This result is consistent with the Romanian study reviewed earlier (Creanga, Acharya, Ahmed, & Tsui, 2006).

CHAPTER V
CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusions

Thailand still confronts many health and social issues resulting from unplanned pregnancies but still has very limited information concerning the problem. It is necessary to assess the magnitude and basic characteristics of unplanned pregnancies in order to improve prevention interventions. This study provides a clear picture of Thai women and their pregnancies at the community-level. The magnitude of unplanned pregnancies occurring among women in communities has been explored, and selected characteristics of these problematic pregnancies have been examined.

The main implications of this study come from the associations between pregnancy intention prior to conception, pregnancy intention after conception, and pregnancy outcome. The associations between pregnancy intention prior to conception and outcome of pregnancy are as expected. Women planning to conceive have the lowest rate of induced abortion and miscarriage, and the highest rate of full-term pregnancies. On the other hand, women planning not to conceive have the highest rates of induced abortion and miscarriage and the lowest rates of full-term pregnancy.

The important concerns, therefore, are that a large proportion of women who planned not to have a child were not contraceptive users, and also a large proportion of women who had no plan to have a child were not aware of their reproductive capabilities, as most of them reported that a lack of knowledge of contraceptive methods was the most important reason underlying their unplanned pregnancies. The issues of accessibility to knowledge of contraception and family planning services are still relevant although Thailand has quite a high rate of contraceptive prevalence of

married women aged 15-44years as reported by the Bureau of Health Promotion in 2000 (Reproductive Health Division, 2003).

This study suggests that pregnancy intention after conception changed in some women experiencing an unplanned pregnancy. What are the factors affecting a women's pregnancy intention when she experiences an unplanned pregnancy? Why do most women who had no plan to conceive decide to carry the pregnancy to term? One possible factor affecting the women's decision in this case might be the social construction of gender and motherhood in which the society and culture give the higher value to married women who have a child. Whittaker (2000) found in her ethnographic study in the Northeastern village of Thailand that female fertility was an important source of female cultural power and prestige in which a woman marked her status through childbearing and maternity. Therefore, this societal value could play an important role in encouraging a woman to carry her unplanned pregnancy to term, especially if it is a pregnancy within marriage. However, further study is needed on this issue.

The other implications from this study were found in the association between pregnancy intention after conception and pregnancy outcome. The two variables have a strong association partly because this study used attempted pregnancy termination as an indicator for pregnancy intention after conception. Attempted pregnancy termination is a strong indicator for pregnancy intention after conception as a woman who did not want to have a child and was not ready to carry the pregnancy to term would have decided to end the pregnancy as soon as possible. However, this study found that the about 52 percent of women attempting to terminate a pregnancy are successful. However, questions remain concerning what happened in the cases of unsuccessful pregnancy termination. Did it result in live birth with a baby in poor health? Or perhaps in a stillbirth? If the termination was done using unsafe procedures, did it result in complications impacting the woman's health or in her death in severe cases?

In conclusion, this study has provided a broad picture of planned and unplanned pregnancy at the community level. The findings illustrate that unplanned pregnancy is still a major public health issue in communities. In addition, it has become clear that there are several issues related to pregnancy intention and

pregnancy outcome that need further study in order to develop better policy and programs. These programs must aim to prevent unplanned pregnancy and its adverse outcomes and to promote planned and healthy pregnancy.

5.2 Recommendations

In order to reduce the magnitude and the adverse consequences of unplanned pregnancies, Thailand needs a set of policies to **promote comprehensive sexuality education for all** that aim to provide accurate and up-to-date sexual and reproductive health information, eradicate sexual prejudice underlying gender inequality, empower women's ability to control their own fertility, and enable both men and women to exercise their reproductive rights with responsibility; **improve quality, safe, and accessibility of family planning services** and information for all sexually active women regardless of their marital status and age; **develop healthy pregnancy programs** covering women's physical and mental health at both preconception and post-conception period, and **legalize abortion** to make abortion safe for women who need an abortion.

Moreover, further research has to be done on related topic, for instance, the **in-depth study of fertility awareness** especially in the case of women who are at risk of pregnancy or do not want to become pregnant but are not contraceptive users, and the conditions and characteristics of contraceptive failures; the **exploration of other indicators for pregnancy intention after conception** apart from the attempted pregnancy termination, as most women with unplanned pregnancies do not try to terminate their pregnancy; the **examination of factors affecting pregnancy intention prior to conception**; and an **in-depth study of planned and unplanned pregnancies in different communities** to compare the distribution and characteristics of pregnancies.

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BIOGRAPHY

NAME	Nattaya Boonpakdee
DATE OF BIRTH	4 December 1971
PLACE OF BIRTH	Bangkok, Thailand
INSTITUTIONS ATTENDED	Thammasat University (1989-1992) B.A. (Sociology and Anthropology) Mahidol University (2005-2006) M.A. (Population and Reproductive Health Research)
FELLOWSHIP	IPSR/William and Flora Hewlett Foundation
POSITION AND OFFICE	Coordinator (2002-) The Women's Health Advocacy Foundation Bangkok, Thailand