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**A NEW DECADE OF
FERTILITY AND FAMILY
PLANNING IN
THAILAND : 1981 CONTRACEPTIVE
PREVALENCE SURVEY**

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DEVELOPMENT ADMINISTRATION

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FOREWORD

A new Decade of Fertility and Family planning in Thailand : 1981 Contraceptive Prevalence Survey was conducted by the Research Center of the National Institute of Development Administration (NIDA) as a continued research activity of the Contraceptive Prevalence Survey. Country Report 1979. With it's larger sample size and coverage of rural, urban and regional areas, the report will be able to provide both information about the changes and estimated parameters of the Thai contraceptive phenomena. In addition, the study also explores some of the Policy issues, particularly breastfeeding, for which the Ministry of Public Health is now rigorously campaigning.

As an academic institution, NIDA gratefully appreciates its relationship with the National Family Planning Programme (NFPP). Thus, the study was undertaken with the anticipation of high utility for the NFPP while NIDA personnel benefited greatly by the scientific endeavor. Such cooperation would not have materialized without the assistance from the USAID and Westinghouse Health Systems.

With such successful past association, the future cooperation between NIDA, NFPP, USAID and Westinghouse Health Systems is assured.

Titaya Suvanajata, Ph.D.
Rector
The National Institute of
Development Administration

FOREWORD

In 1979, the National Institute of Development Administration (NIDA) published Round I of the Contraceptive Prevalence Survey (CPS) for Thailand. We can now observe that the Round I survey occurred at a most auspicious time : Contraceptive practice had exceeded the 50% mark and, for the first time, fertility had begun to decline in Thailand's most populous Northeast region, thus following the pattern set by the North and Central regions.

As program evaluators now turn to prevalence and fertility as the appropriate achievement indicators for mature family planning programs, the CPS series becomes critically important to the Ministry of Public Health (MOPH) and other government agencies with a stake in the success of Thailand's program.

The bountiful information in this report will serve wide-ranging needs from those who are interested in the shift of users to the more efficient methods to those interested in regional fertility differentials.

More importantly, at the request of the MOPH, NIDA expanded its sample size and coverage for Round II in order to generate accurate regional prevalence and fertility data.

The MOPH is confident in the quality of data collection, processing and analysis of the NIDA team as demonstrated in Round I. It is hoped that this report will be widely disseminated and studied for the implications it holds for the Thai Development effort.

Somsak Varakamin, M.D., Dr.P.H.
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The second round of the Thailand Contraceptive Prevalence Survey (CPS) was carried out by the Research Center, National Institute of Development Administration (NIDA). Financial support for the project was provided by Westinghouse Health Systems under a large international technical support contract with the Bureau of Science and Technology, Office of Population, Research Division of the U.S. Agency for International Development, U.S. Department of State. Without this support the project would never have been started; and the support for this project is gratefully acknowledged.

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Assistance in computer work and time were provided by the Computer Center of the National Statistical Office. Programs for computer editing were prepared by Mrs. Subha Kirtibutr and Mr. Pichai Saiyasombat. Other programs necessary to complete the tabulation were prepared by Mrs. Jean Cushing. Their endurance and perseverance to work hard even late at night under the pressure of deadlines is greatly appreciated.

Appreciation is also expressed for the guidance and advice in the sampling design provided by Dr. Prachoom Suwattee, Dean of the School of Applied Statistics, NIDA.

Dr. Titaya Suvanajata, Rector of NIDA, served as a senior advisor to the project. His experience from serving as Project Director in the first round of the Thailand Contraceptive Prevalence Survey and his skill in administration was instrumental to the completion and success of the project.

Dr. Somsak Varakmin, Deputy Director -General of the Department of Health, Ministry of Public Health, not only initiated the survey but provided both the needed logistical and moral support. Mr. Suthon Panyadilok and Mr. Tony Bennett from the Family Health Division also Played an important role in promoting the atmosphere of full cooperation between the Research Center and the Family Health Division while conducting the survey.

Other agencies and individuals also contributed to the success of the survey, among them are the officials of the Ministry of Interior in the sampled areas, and the 7,038 respondents who cooperated so fully with our interviewers.

Finally, we would like to express our appreciation to Dr. John Knodel, Professor, Population Studies Center, University of Michigan, for his comments and assistance during the analysis of data, especially on fertility and breastfeeding. His experiences and expertise, which he shared with us, have made it easier for us to carry out our task.

With so much help from so many sources and persons, responsibility for the contents of the report or any flaws which may remain lie entirely with the authors.

**Peerasit Kamnuansilpa
Aphichat Charatrithirong
June, 1982.**

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CHAPTER 1

INTRODUCTION

Planners have long realized the significant role of population growth in the success of social and economic development programs. Rapid population growth represents a serious hindrance to government goals of improving social and economic conditions in Thailand. In the Third National Development Plan (1972), by the Social and Economic Development Board, an explicit demographic policy for the country was stated. The policy goal, which was to reduce the growth rate of approximately 3.2 percent per annum to 2.5 percent at the end of 1976, was successfully achieved by the end of the Third Five Year Plan. With no less emphasis, the Fourth National Economic and Social Development Plan (1977-1981) set a target of reducing the population growth rate to 2.1 percent at the end of 1981. Recent surveys have indicated a rapid fertility decline during the period. The population growth rate had probably fallen to or below 2.0 percent per year by 1980 (Knodel et. al., 1980). Despite the rapid decline in fertility, Thailand still faces serious demographic pressure. At the current estimated level of growth, the present population of over 45 million can double within the relatively short span of 35 years. Realizing the adverse effects of the current pace of population growth, the Fifth National Economic and Social Development Plan puts forward policies aimed at further lowering the annual growth rate to 1.5 percent by 1986.

While an active national family planning program has contributed significantly to the rapid decline of fertility, the demographic future of Thailand still rests on the continuing concerted efforts of both government and private agencies. Since the task will meet even a greater challenge in the future, more efforts will be required to motivate and recruit new acceptors.

The task of providing family planning services has become increasingly complicated. Target populations need to be more specifically

defined. Efforts to lower desired family size have to be increased. In addition, efforts to make contraceptive services more widely available must be continued. However, plans for the delivery of family planning services require increased planning and innovation.

Research and evaluation of government and private contraceptive programs, including basic statistics on the current pattern of family planning use, are important to understanding program direction and impact. One essential aspect of fertility and family planning program planning in the 1980's is the increased use of scientific knowledge on the "determinants" of fertility and contraceptive practices both at the micro and macro levels. The Contraceptive Prevalence Survey of 1981 (CPS), helping mark the new decade of Thai family planning, is aimed at gaining comprehensive information to assist in the planning and development of population policies important to the future of Thailand.

HISTORY AND DEVELOPMENT OF CPS IN THAILAND

During the period prior to World War II, the Thai Government's policy was to encourage population growth. At that time various nations including Thailand, had adopted the geopolitical doctrine that national power was reflected in population size. In keeping with this pro-natalist stance, the Government actively promoted marriage, using various approaches, including the establishment of a National Committee on Marriage Promotion, and the sponsoring of contests in which awards were given for large and healthy families. This pro-natalist policy did not show any adverse effect on the country as a whole until after World War II when the successful application of antibiotic medicine and epidemic control measures quickly reduced the death rates in Thailand to an unprecedented level of 11 per 1,000 by

the mid-1960's. At that time the growth rate increased to more than 3.0 percent per annum. It was not until 1958 when concern about the population issue was voiced. The Economic Survey Commission of the World Bank warned the Thai Government about the population problem and recommended the adoption of a policy of population control. The Government responded half-heartedly.

The story was different among most of the members of the academic communities. In 1963, the first national seminar on population was held by the National Research Council. The participants were close to unanimous in their opinion that the high rates of population growth could be detrimental to the goal of economic development. The seminar adopted a resolution that called for a thorough and careful study of attitude toward family size and family planning among both the urban and rural segments of the population, and that a family planning action program be launched in a selected site. This action program would have a dual role of (1) arousing interest in and motivation for family planning and (2) collecting information necessary for evaluation and planning of future population control programs. This gave rise to two demographic surveys of Knowledge, Attitude and Practice of family planning, commonly known as KAP studies, in Thailand. The first one in 1964 was conducted in Photharam, a rural district in the Central Region, by Hawley and Prachuabmoh (1966). They found that two-thirds of the women had absolutely no knowledge of contraceptive practices. One year after the initiation of the family planning action program, only 12 percent of the sample had "no knowledge" while 53 percent had heard about some methods of contraception, and 35 percent know how to use at least one method (Hawley and Prachuabmoh, 1966). In contrast to the Photharam study, a family planning study in Bangkok, a suburban area of Bangkok, obtained data showing that 96 percent of women had some knowledge while only three percent had no knowledge of any method of contraception (Burnight et. al., 1968). Both the Photharam and Bangkok studies

found that attitudes toward the use of contraception were favorable. The evidences from the two studies confirmed the hypothesis that there were more favorable attitudes toward contraceptive practices in urban than in rural areas. Specifically it was found that 53 percent of women in the rural area of Photharam approved and 13 percent gave qualified approval, while 72 percent of the women in Bangkok approved and an additional 9 percent gave qualified approval of contraceptive practices.

In terms of motivation related to the use of contraception, it was found that 39.7 percent of the 1964 sample and 43 percent of the 1965 sample of Photharam showed high motivation to use contraception (Hawley and Prachuabmoh, 1966). Although motivation to practice contraception is a vital link in the chain of limiting family size, the studies at the time indicated a low level of contraceptive use. In Photharam, only 3.5 percent of ever married women aged 15-49 adopted the method of female sterilization. In contrast, however, in Bangkok 22.5 percent of the married couples had been sterilized (Cowgill et. al., 1969). This figure was quite striking and showed that there was a strong desire to limit family size in the suburban and probably urban area.

The results from the two surveys led the Government to seriously reconsider the issue of population growth and the previous pro-natalist policies. In 1968, after years of discussion and deliberation, the Cabinet decided that families with four or more children were eligible to receive assistance in birth control.

In 1970, the Cabinet finally recognized population control as a national policy. However, the commitment enunciated by the Thai government did not assure a rigorous campaign to make the population program a top priority. The policy read "...to support voluntary family planning in order to help resolve various problems related to the very high rate of population growth which constitutes an important obstacle to the economic and social development in Thailand" (National Family Planning Program, 1972).

While the government's recognition and commitment may have served as an important catalyst, the Ministry of Public Health was instrumental in carrying out an active and effective family planning program. To implement the family planning programs, the Ministry trained paramedic personnel and medical doctors to provide more services. In 1970, 330 medical doctors, 700 nurses, 3,000 midwives, and 1,985 health personnel were trained in family planning skills by the Ministry.

Because of the goals of curtailing population growth and ultimately the size of the population, there was a need for detailed national information on population issues. To help meet this need, with a focus on detailed fertility and family planning data, the national Longitudinal Study of Social, Economic and Demographic Change (referred to here as LS) was conducted by the Institute of Population Studies at Chulalongkorn University. There were two rounds of the LS. Field work for LS1 in rural areas was conducted in April and May of 1969; urban field work was carried out in April and May of 1970. For LS2, rural field work was carried out in April and May of 1972, urban field work, in April and May of the following year. The third major survey was the Survey of Fertility in Thailand (SOFT), a part of World Fertility Survey, conducted in April and May of 1975. The two recent surveys are the Contraceptive Prevalence Survey (CPS1), conducted in late November 1978 to early January 1979, and the National Study of Family Planning Practices, Fertility and Mortality (NS), conducted in April and May 1979. All of these surveys put together indicate that there has been a dramatic reduction in fertility and an increase in the rates of contraceptive use during the decade of the 70's. The greatest drop in fertility occurred after 1975, an observation from a major comparison of the results from SOFT and CPS1.

CPS'S OBJECTIVE

The CPS, as carried out in Thailand and other countries, is designed to provide the rapid

feedback necessary to evaluate and improve family planning information and service delivery programs.

The design of CPS is useful in determining how many women are at risk of unwanted pregnancy -- that is, how many do not want to become pregnant but may do so because they are fecund, sexually active, and not using contraception. Included among these are the women who have not yet been reached by family planning services. Identifying these groups of women is of prime importance to program administrators. In Thailand, like most developing countries, the percentage of women at risk is quite high. The results from the CPS1 indicated that approximately 40 percent of currently married women were at risk of pregnancy.

Another objective of CPS is the way it is designed to examine the availability of contraceptive supplies and services. Availability can be an important factor in facilitating or discouraging the use of contraception. The widespread dissemination of family planning services and supplies has been a major thrust of family planning programs in many countries, including Thailand.

Another use of CPS data is to check service statistics from family planning programs and to estimate the level of usage of contraceptives obtained from private sources such as pharmacies and private physicians. While the National Family Planning Programs (NFPP) has kept fairly accurate service statistics, these data by no means represent the total picture of contraceptive use.

A goal of the NFPP in Thailand is to reduce fertility. CPS data, when compared with data from previous demographic and fertility surveys, can be used to examine current fertility levels and trends. In the first round of Thailand's CPS, a decline in fertility was found to be matched by an upsurge in the level of contraceptive use. Marital fertility in Thailand declined almost 40 percent between 1969 and 1979. Total fertility rates fell from 6.3 in 1969 to only 3.8 in 1978. The decrease occurred in

both urban and rural areas, but was proportionately sharper in rural areas than in the cities.

Overall, a timely CPS can help policy-makers and program administrators by measuring knowledge, use, and preference for methods of contraception, by identifying women who may need services, by revealing obstacles to the use of services, and by uncovering opportunities to make services available. A CPS can also gather information about utilization of other health services and sanitation, child feeding behaviors; child mortality can also be indirectly estimated from child survivorship data.

A BRIEF REVIEW OF CPS1

A brief description of the methodology and results of the first round of Thai CPS are presented here in order to provide readers with some background information for better understanding of the CPS2 results. A sample of 4,025 Thai women aged 15-49 years were interviewed for CPS1 in late November 1978 through early January 1979. These women were asked questions on the following topics: a) socio-demographic characteristics, b) reproductive behavior and intentions, c) knowledge of fertility regulation methods, d) current and past contraceptive use, e) availability of fertility regulation methods, and f) reasons for contraceptive non-use.

The first Thai CPS was based on multi-stage self-weighting sample of households designed to yield approximately 4,000 women between 15 and 49 years of age. The procedures used to select the CPS sample were similar to those used in the Survey of Fertility in Thailand (SOFT). These procedures generated a sample with 11 strata grouped by geographical areas, comprising the Northern, Northeastern, Central, and Southern regions. The sample excluded urban areas outside Bangkok for cost-benefit reasons.

The CPS1 found that single and married women of all ages, educational levels, and geographical regions were aware of contraceptive methods with 98 percent knowing at least one

modern method. The median number of methods known after prompting was six. Knowledge was so widespread that some differentials typically seen in developing countries were no longer evident in Thailand.

At the time of interview, slightly more than half (51 percent) of currently married women were using a method of contraception. The most popular method was pill (40% of currently married users). Female sterilization was the second most widely used method (25%), followed by injectables (9%), all of which were obtained primarily from government sources.

The CPS1 estimated that levels of unmet need for family planning services were greater in the Southern and Northeastern regions than in other parts of Thailand. Other findings suggested that awareness of methods, and knowledge of sources of contraception do not explain the geographic differentials in levels of unmet need.

One of the most interesting findings from the first CPS is that the family planning program of Thailand has been able to penetrate and disperse services and information to all geographic regions, social classes and education levels. Consequently, fertility has declined at a pace unprecedented in the developing world. The fast decline in fertility rates accompanied by a rapid increase in family planning use, therefore, deserves a close and timely monitoring and evaluation. It was felt that the time since the first round was enough to warrant another survey in order to gauge the changes and to provide more detailed analysis of the determinants of such changes. The CPS2 will serve as a baseline source of information for further understanding the family planning and fertility situation at the beginning of the new decade of 1980's.

ORGANIZATION OF REPORT

In the remainder of this report, Chapter 2 covers the methodology of the survey. Detailed information about the preparation of the survey, the questionnaire design, the recruitment and

training of field staff, and results of the pretest are given. The sample design, activities in the field, and procedures for coding and editing of data are also discussed. Chapter 3 is the beginning of the presentation of substantive findings of the survey. More specifically the fertility of Thai women is examined in terms of levels and differentials. Chapter 4 focuses on contracep-

tive awareness. Chapter 5 deals with the findings on contraceptive use. The availability of contraception is examined in Chapter 6. Chapter 7 examines the status of infant feeding practices in Thailand. Chapter 8 presents the conclusions of the report of the 1981 Contraceptive Prevalence Survey. Included also, there is a discussion of issues related to population policy.

CHAPTER 2

METHODOLOGY

Field work for the second round of the Thailand National Contraceptive Prevalence Survey was conducted between March 25 and June 10, 1981. Unlike CPS1 the survey universe for the CPS2 was comprised of only ever married women aged 15-49 years. The decision to exclude single women from CPS2 arose from the desire to increase the effective sample size in order to make valid regional comparisons of fertility and contraceptive use without significantly increasing costs. Since CPS1 found that in Thailand fertility and contraceptive use take place almost exclusively within the context of marriage, interviewing single women on these topics was felt to be unnecessary.

PREPARATORY ACTIVITIES

The Questionnaire Design

Like the first CPS, a simple questionnaire was designed to collect information to assist family planning program administrators in monitoring the progress of family planning efforts, and determining the level of fertility. Unlike the first CSP, however, CPS2 included additional questions on breastfeeding practices, health, and sanitation. In addition, a community module was also designed to collect information on the characteristics of villages in the rural areas. The core questionnaire, altogether, contained questions regarding:

- Background characteristics;
- Reproductive behavior and intention;
- Knowledge of fertility regulation method;
- Current and past contraceptive use;
- Availability of fertility regulation services;
- Reasons for contraceptive non-use;
- Infant feeding practices;
- Health and sanitation;
- Village characteristics.

A brief discussion of the rationale of inclusion of questions on these topics follows.

Background Characteristics

A series of questions was asked of each eligible woman to provide a respondent "profile" and permit more meaningful analysis of the survey data. The data derived from these questions provided an overall description of the characteristics of the sampled women and served both as the basis for developing determinants of past and present patterns of contraceptive use and as independent variables in the analysis of contraceptive practices and fertility. A discussion of the background characteristics which were used and the rationale for their inclusion follows.

Age of Respondent - Two questions -- age and date of birth -- were asked of each respondent. Age was used to identify eligible women and it also served as a control variable in the analysis.

Marital Status - Marital status served as a surrogate measure of sexual activity. The classification of marital status in terms of those who were currently married and those who were not currently married was essential in the analysis of fertility.

Place of Residence - Information was obtained on the place of residence. The information was used to analyze the survey results by region and/or urban-rural residence.

Education - In the survey information on both husband's and wife's education was collected. It served as an explanatory variable for understanding differences in fertility, knowledge and practices of family planning.

Occupation - A simple question asking "what is your occupation" was used to elicit both information on occupation and work status. This variable, along with work status, was used as an independent variable in the analysis of contraceptive usage and fertility.

Reproductive Behavior and Intentions

Three sets of questions focused on past and intended fertility were asked:

Pregnancies and Live Births. The questions on pregnancy experience were asked to measure parity, identify women not in need of contraception, and estimate current levels of fertility.

Number of Living Children. Number of living children provided data for calculating desired family size, and more importantly, provided data on actual current family size, which can be a major influence on the decision to use contraception.

Desire for Additional Children. Desire for additional children helped determine the respondent's potential for contraceptive use and to differentiate contraceptive spacers from non-spacers.

Knowledge and Use of Fertility Regulation Methods

Knowledge of contraceptive methods (prompted and unprompted) and contraceptive use levels were the most important variables collected in this survey. Identifying the relationships between these and the background characteristics mentioned previously was one of the major goals of the analyses.

Availability of Fertility Regulation Services

The CPS2 also measured the respondent's perception of her access to sources of modern birth control methods. For each method mentioned, the respondent was asked about her transportation to the source, estimated travel time, and the location's convenience. Each current user was asked the same information about the methods she was currently using.

Reason for Contraceptive Non-Use

Respondents were asked the main reasons they were not using any family planning method. An attitudinal question, asking respondent if they approved or disapproved of a couple using family planning, was also asked to see the relationship between attitudes and actual contraceptive behavior.

Infant Feeding Practices

The CPS2 broadened the areas of interest to cover lactation. The rationale of asking questions on breastfeeding stemmed from the fact that breastfeeding has a well documented contraceptive effect (Bongaarts, 1978). In addition, breastfeeding practices can have a significant impact on infant mortality and morbidity, making the data useful for public health policy planners.

Health and Sanitation

The family planning program in Thailand, as in most countries, has been viewed as a part of health programs. In the CPS2 questions on health and sanitation were asked in order to provide some measure of the use of the medical infrastructure and sources of potable water. However, the results of these questions will not be covered in this report but will instead be presented in a separate paper.

Village Characteristics

There has been an increased interest in the structural aspects of family planning programs. In this survey, for each of the selected rural village's information was collected on distance to the nearest district office and tambol health center, availability of contraceptive outlets (in the village), size of village population, number of households, electrification and types of schools. These data will be used in the analyses of contraceptive use and fertility.

Recruitment and Training of Field Staff*

The interviewing was conducted by 30 female interviewers, all B.A. degrees from universities in Thailand. Experiences from the CPS1 and CPS2 indicated that female interviewers did not have any problem in establishing the rapport necessary for respondents to discuss sexually related topics openly.

* See appendix for a detailed schedule of survey operations.

Six field assistants (a new position which did not exist for CPS1) were recruited from experienced interviewers. The position of field assistant was created to help resolve field problems and to maximize the quality of data collection. They were responsible for assisting the supervisor in logistical planning, editing and coding completed questionnaires, reinterviewing (for quality control), and serving as a substitute interviewer when staff shortages arose.

Both interviewers and field assistants were chosen after an interview with project staff and field supervisors. Selection was based upon field experiences, fluency in at least one of the local dialects, ability to solve field problems, and personality. After selection, trainees went through an intensive two-week training program which included both classroom and field training. As in CPS1, trainees were hired only after they had passed a performance evaluation at the end of the training.

The classroom training was designed to provide background knowledge of research methodology, with special emphasis on data collection and interviewing techniques. Trainees were also provided with a detailed description of contraceptive methods. An understanding of these methods was essential for effective communication between interviewer and respondent. In addition, instructions on village listing techniques and the importance of the sample in the survey were given to the trainees. A presentation of the survey's objectives and a review of the interview schedule concluded the first part of the training.

Following the classroom training, the interviewers were provided with practical field experience. Trainees were divided up into six teams corresponding to the North, Northeast, South, East, Central and Bangkok Metropolitan. Each team was instructed to select a tambol in Klong Laung District, Pratoomtee Province, as a site for interviewing a sample of ever-married women. During this phase of the training, each team was instructed to list households (construct the sampling frame) in a chosen village and then interview selected women.

The field training was done under close supervision by the regional field supervisors. It was during this period of field training that field assistants also learned how to effectively assist their teams, and generally learn their roles in the field. The field trials were also useful to allow trainees to prepare themselves for living in the field and to develop the team spirit essential for successful field operations.

All field supervisors were faculty members of NIDA with a number of years of experience in field research. Almost all of them participated in the CPS1 and all shared the objective of matching the high standards of the previous survey.

Results of the Pretest

Principal investigators and field supervisors met prior to the training of interviewers to discuss the problems encountered during the pretesting of the survey instruments. Since the CPS2 core questionnaire had already been employed in the first round of the CPS, substantial changes were neither anticipated nor required. The focus of the pre test was on the new questions which were not included in the first round. As planned, responses to the open-ended questions were used to construct the coded responses used in the actual field work.

Based on the results from the pretest, some of the wording which respondents found difficult was refined. In addition, some questions which had no significance to the respondents or no variation in the responses were deleted. Specifically two questions were deleted: 1) "In general would it be most convenient for you to get family planning in the morning, afternoon or evening?" and 2) "What day of the week would be most convenient for you to get family planning services?" We found that Thais, especially those in the rural area, had no preference for any particular time or day. In the rural area there is a close relationship among the members of the community, so people can visit the house of the health center staff at any time they wished. In Bangkok, people were conditioned to use the facilities at the office

hours, so that they would not consider any time that was not an office hour. In addition, durg stores in Bangkok are open late every day making service timing questions useless. In any event, the answers had no programmatic value and so were dropped from the questionnaire.

SAMPLE DESIGN

The sampling procedures employed in the second round of Thailand Contraceptive Prevalence Survey (CPS2) were designed to yield a self-weighting nationally and regionally representative sample. The dual goals of drawing a self-weighting national and regional

sample made it necessary to have a larger sample than the one drawn in the first round. The total size of sample in CPS2 was 7,038 *ever-married* women (ages of 15 to 49), as compared to 4,025 women (ages 15 to 49) for the CPS1. A description of the rural and urban phases of the CPS2 sample selection process follows.

Selection of the Rural Sample

The procedures used to select the rural portion of the CPS2 sample paralleled those in the CPS1. In order to maximize comparability between the two rounds of the surveys, 17 provinces covered in CPS1 were included. Seven more provinces were randomly

TABLE 2.1: PROVINCES INCLUDED IN THE RURAL SAMPLE FRAME FOR THE CONTRACEPTIVE PREVALENCE SURVEY ROUND TWO IN THAILAND

Provinces	Region
North	Chiengmai
	Chiengrai
	Nan*
	Sukho Thai
Northeast	Phetchaboon
	Sakon Nakorn
	Nakorn Rajchasi
	Buri Rum
	Ubon Rajchatani*
	Udon Thani
Central	Suphun Buri
	Sing Buri
	Ayudthaya
	Samut Prakarn
	Rayong
	Chachoengsao
	Trat*
	Raj Buri*
	Lop Buri*
	South
Songkhla	
Narathiwas	
Phang Nga*	
Pattani*	

*New province added in the CPS2

selected with probability proportional to size from the rest of provinces and added in, making a total of 24 provinces. From each province two districts were selected. In each of the 17 provinces included in CPS1, one district was randomly drawn from the two districts covered in the first round, while the other was independently and randomly selected from those districts not included in the CPS1. In the new provinces both districts were new to the sample.

Like the CPS1, multi-stage sampling techniques were employed in the selection of rural respondents in CPS2. More specifically, the selection process comprised five stages. A brief description of each of these stages follows.

First Stage. The 17 provinces included in CPS1 were selected. These 17 provinces were originally derived from the list of 34 provinces selected by the Survey of Fertility in Thailand (SOFT). They were randomly drawn, after being stratified into four geographic regions (North, Northeast, Central and South), with a probability of inclusion at the magnitude of 0.5. To cover more provinces, and to select a larger sample than that of the first round, seven more provinces were randomly selected with probability proportional to size from the four regions of Thailand.

Second Stage. In the second stage, two districts were drawn, using simple random sampling without replacement, from the rural areas of each province selected in the first stage. From the provinces covered in CPS1, one of the two districts from those districts selected in the first round was randomly selected, while the other was randomly selected from the remaining districts. In the new provinces, both districts were new. A total of 48 districts was thus selected from the 24 provinces (24×2).

Third Stage. The next step was to randomly draw a sample of subdistricts (tambols). Two subdistricts were randomly chosen from each selected district. In the provinces

which were also selected in CPS1, one of the two subdistricts was the same as the one in the first round. In new provinces, each subdistrict was new. A total of 96 ($24 \times 2 \times 2$) subdistricts was selected.

Fourth Stage. In the fourth stage, two villages (mubans) were randomly selected from each subdistrict drawn in the third stage. In the subdistrict which was selected in the first round, the two villages were the same as in the first round. A total of 192 ($24 \times 2 \times 2 \times 2$) villages were included in the sample at this stage.

Fifth Stage. In the final stage the respondents were randomly selected from among eligible women (ever-married women 15 to 49 years of age) in each village chosen in the fourth stage. The probability of being included in the sample was directly proportional to the number of eligible women in the provinces selected in the first stage. Furthermore, the respondents were proportionally drawn from among the selected districts, subdistricts, and villages according to the number of eligible women. A total of 5,823 respondents were selected in the rural portion of the CPS2 sample.

Selection of the Urban Sample

Multi-stage sampling techniques were also employed in randomly selecting the urban portion of the sample. In the process of selecting the urban sample, the urban population was stratified into two groups: those in Bangkok metropolitan area and those in provincial municipal areas. In each category, sample size was proportional to the total number of eligible women. A total of 765 respondents were selected in the metropolitan area of Bangkok. In selecting the sample of women in the Bangkok metropolitan area, artificial census blocks were constructed. The construction of new blocks was required because the census block listings were out of date. Random points were selected from Kwang (sub-administrative area) and mapping teams made household enumerations.

tion lists. Each constructed block consisted of 105 households. The new blocks were then used to randomly select a sample of eligible women. In so doing all 24 administrative areas (Khet) in Bangkok were covered and the number of blocks was determined by the number of households and subsequently the size of the population within each Khet.

Interviewers were instructed to select, within the Khet, the sub-administrative areas (Kwang) analogous to the tambols in the rural districts. Once the Kwang in the Khet was located, the interviewing team was instructed to arbitrarily select a starting point, and construct a list of eligible women. No more than one block was constructed per Kwang.

In each block 15 eligible women were randomly selected for interviewing. A total of 51 blocks with 105 households each were constructed in Bangkok.

In the selection of eligible women in the provincial urban areas, census blocks similar to those created for Bangkok were constructed. However, the provincial urban sample blocks had a smaller number of households (35) than the Bangkok blocks (105). This was done to ensure a greater areal coverage in the municipal areas, which were much smaller than Bangkok. Clustering of the sample in any particular area or segment can lead to systematic errors in the findings. After getting the size of the provincial urban population to determine the appropriate number of blocks, from each selected block five eligible women were randomly selected for interviewing. A total of 450 respondents were selected from provincial urban centers.

ACTIVITIES IN THE FIELD

Timing of Field Work

The field work for the CPS was carried out between March 25 and June 10, 1981, by six teams, each composed of a supervisor, a field assistant and five interviewers. In all

selected provinces the teams stayed either in the provincial or district town until all the interviews were completed. If the interviewers were unable to complete an interview after three callbacks, a previously selected substitute respondent was interviewed. Substitute respondents were selected at the time of the selection of the original sample. Because the time of field work corresponded with the slack season, we were able to locate most of the respondents on the first visit. The average duration of an interview was 25 minutes -- five minutes longer than the average interview for CPS1.

Quality Control During the Field Work

As data quality was emphasized, during the early stages of the field work each supervisor and assistant were instructed to observe the interviews and to provide assistance if the interviewer or the respondent failed to communicate effectively. This procedure was followed during the first week of interviewing in order to detect and correct any systematic errors. The interviewers submitted the completed questionnaires to the supervisors daily, and all questionnaires were examined carefully to identify errors in data entry, as well as inconsistent or doubtful responses.

Field supervisors and their assistants reinterviewed some respondents to verify interview results. This was done more frequently when responses were omitted or there were major inconsistencies. Spot checks were also made by field assistants and sometimes by supervisors during the field work to be sure that the interviewers were following the correct sample selection procedure.

FIELD WORK PROBLEMS

CPS1 provided valuable experiences for preparation of the field work of CPS2. As a result only minimal problems were encountered during the field work. Two problems encountered in CPS1 were solved or mini-

mized by proper planning. More specifically, communication problems, due to the interviewers inability to communicate in the Yave language which is used by some residents in the two Southern provinces (Narathiwat and Pattani), were resolved by hiring an interviewer who could speak the language. This not only solved the communication problem but made it easier to build the rapport. Another problem which was at least minimized was the difficulty in locating the respondents. The field work of CPS1 coincided with the harvest season, making it inconvenient for respondents to be interviewed. With a change in the timing of field operations, the CPS2 survey was able to reduce the number of callbacks and evening interviews. This contributed to greater cooperation from the farmers, and possibly better quality data. Despite a conscious attempt to guard against problems, a few were encountered which are worth mentioning.

Construction of the Sampling List.

Ideally, the sampling frame would have been constructed only after conducting a census-type enumeration of all eligible women in each selected area. Due to cost-efficiency and time factors this procedure was modified in the urban segment of the sample. In Bangkok and provincial urban areas, the listing operation was started at a randomly selected area and continued until the requisite number of households was listed. The final selection of the urban sample was made from these lists.

In rural areas this procedure was modified. The district office village listings was used to create the lists of women to be sampled. The supervisor contacted the District Officer (the Government appointed administrator for the district) who provided the names and addresses of the eligible women in the sample village from the District Register. This listing was then updated from Health Center records and presented, one household at a time, to the village headman, who made corrections by deleting women who had

died or moved. The headman was also asked to indicate houses (usually new) which had not been included in the district household listing. Usually, these new houses were easily identified because they lacked a house number assigned by the district. The new households were then listed by the interviewers. Generally the respondents in these new households were found to be those who were newly married and previously listed in other households in the same village. Very few were intervillage migrants.

The above procedure worked quite well in small villages, where the headman knew all members of the community. However, in big villages where the headman was not knowledgeable enough to update the listing, the interviews had to do door-to-door household enumeration.

In the villages which were covered before in the CPS1, the earlier lists were updated in a manner similar to the generation of the new lists.

It was found that the net error in the absolute number of eligible women in a village as listed in the District Register was small. Experiences from the first survey told us that the errors were of a reasonably comparable magnitude among all districts, thus allowing us to calculate the sampling proportion in advance of visiting the village, so that the listing and interviewing could be done during the same visit. When the registration list was not used, each selected village in the district had to be listed before the sample proportion could be calculated and interviewing begun.

Substitution of Sample Clusters

In national survey research it is frequently necessary to substitute some of the unit sample. Substitution may be required not only of an individual respondent, but also at the aggregate or cluster level. In some cases it was impossible to interview women in the selected village, and so another was drawn from the sample. Four villages out of 192

(2.1%) had to be substituted by new villages. These villages were selected from within the same subdistrict and were similar in size and demographic characteristics. Substitutions were required for two reasons: changes in administrative boundaries moved "selected" villages out of selected districts, so new villages within the district had to be chosen; during the dry season some villages were inaccessible by boat, the only transportation route, and other villages were substituted.

CODING AND EDITING

Field Coding

After being carefully reviewed by the field supervisors, the questionnaires were returned to the interviewers for coding in the field. Field coding was made possible by the pre-coded format of the questionnaire. To limit the amount of work so that the quality could be maintained, a quota of five interviews and five coded questionnaire per interviewer per day were required. The basic coding was completed before the teams returned from the field. Interviewers were also assigned to review the coding of other interviewers before a final review by field assistants.

The field assistants served as coding editors. After the coding was edited, the supervisors would recheck the entries. The completed questionnaires were then sent to the Research Center at NIDA for editing, punching, and further data processing.

Machine Editing

All punched cards were edited by computer. Editing instructions were prepared, and the editing program was written by the project technical staff. It included the following steps:

- 1) List all cards to see that the number of card is correct;
- 2) Check that only legitimate codes appear in each column and that no "wild" codes are present;
- 3) Check the logical consistency of codes between columns and cards.

The editing was done step by step. Mistakes in each step were corrected before beginning the next step. After the machine editing, the frequency distributions of all variables were reviewed to identify any unusual responses.

CHARACTERISTICS OF THE SAMPLE

A brief summary of the characteristics of the women interviewed provides a reference for interpreting the findings presented in this report. Two types of sample characteristics, namely demographic and socio-economic are included. Table 2.2 presents figures on some selected demographic characteristics of the sample by region. The average age for the entire sample of women was 32.5 years. When classified by region the difference in the age was small. The mean age at marriage for the sample was 20.2 years.

TABLE 2.2: SELECTED DEMOGRAPHIC CHARACTERISTICS OF RESPONDENTS BY REGION.

MEANS (X)	Whole Kingdom	Bangkok	North	Northeast	Central	South
Age	32.5	32.6	32.1	32.6	32.5	33.1
Age at marriage	20.2	22.2	19.1	19.6	20.4	19.2
Children ever born	3.3	2.4	3.0	3.8	3.1	3.9
Living children	3.0	2.3	2.6	3.3	2.8	3.5
Ideal family size	2.9	2.4	2.5	3.1	2.8	3.7
Expected family size	3.6	2.8	3.1	3.8	3.3	4.2

Women in the sample were also described by the average number of children ever born, living children, ideal family size and expected family size. The average number of children ever born was 3.3 for the whole Kingdom. The average ideal family size was 2.9.

Table 2.3 shows the matching age distributions for the sample population from the different surveys. Table 2.4 presents the age distribution of the sample by region. About 20

percent of the sample is comprised of women younger than 24 years; 40 percent are between 25-34 years of age. Women in ages 35-49 make up the remaining 40 percent. Differences in the age distribution by region are small. Despite the small differences, it should be noted that the proportion of the sample of ever married women aged 15-24 years in Bangkok is smaller than in other regions. This may be a function of higher age at marriage in Bangkok.

TABLE 2.3 PERCENT DISTRIBUTION OF EVER-MARRIED WOMEN BY AGE, 1975, 1978 AND 1981

Age Group of Woman	SPC 1975	CPS 1 1978	CPS 2 1981
15 - 19	7.5	4.5	4.1
20 - 24	17.3	15.8	16.0
25 - 29	17.7	19.4	20.5
30 - 34	15.8	18.0	19.2
35 - 39	16.0	16.1	15.5
40 - 44	14.1	15.0	14.7
45 - 49	11.7	11.2	10.0
Total	100.0	100.0	100.0

Source: Suvanajata, T. and P. Kamnuansilpa, 1979. Thailand Contraceptive Prevalence Survey: Country Report 1979. National Institute of Development Administration, Ministry of Public Health and Westinghouse Health System, Bangkok, Table 2.3.

TABLE 2.4: AGE DISTRIBUTION OF EVER-MARRIED WOMEN AGED 15-49 BY REGION.

Age	Whole Kingdom	Bangkok	North	Northeast	Central	South
15-19	4.1	2.6	4.4	4.7	3.8	4.0
20-24	16.0	12.9	17.8	16.4	16.5	13.9
25-29	20.5	23.5	21.0	19.5	21.4	18.4
30-34	19.2	21.4	19.1	18.2	18.9	20.5
35-39	15.5	17.4	15.4	15.4	14.9	15.8
40-44	14.7	14.6	12.6	15.3	14.2	16.9
45-49	10.0	7.6	9.7	10.5	10.3	10.5
Total	100.0	100.0	100.0	100.0	100.0	100.0
(N)	(7,038)	(765)	(1,265)	(2,403)	(1,736)	(869)

Table 2.5 presents the marital status of all respondents in the CPS sample by region. The distribution of respondents by marital status served as a surrogate measure for sexual activity which may be significant for understanding the fertility of Thai women. On average, almost 91 percent of the women in the sample were still living with their husbands. When broken down by region, the

data show that the Northeast has the highest proportion of married women whose husbands were not present at the time of survey. This may be due to the high rate of temporary migration to Bangkok. Aside from the lower proportion of women who were living with their spouse in the Northeast, there were not many other differences in the distribution of women by marital status.

TABLE 2.5: MARITAL STATUS OF EVER MARRIED WOMEN AGED 15-49 BY REGION

Marital Status	Whole Kingdom	Bangkok	North	Northeast	Central	South
Married spouse present	90.7	92.5	93.8	87.7	91.1	92.0
Married spouse not present	3.4	2.2	2.0	5.2	3.5	1.2
Separated	0.8	1.1	0.3	0.6	1.4	0.7
Divorced	2.5	2.8	1.9	3.0	1.7	3.2
Widowed	2.6	1.4	2.0	3.5	2.2	2.9
Total	100.0	100.0	100.0	100.0	100.0	100.0
(N)	(7,038)	(765)	(1,265)	(2,403)	(1,736)	(869)

As can be seen from Table 2.6, almost 86 percent of the respondents had no more than 4 years of school. In terms of husband's education, the level of school completed was a little higher than that of the respondents, but

still relatively low by western standard. Except for those in Bangkok, less than 23 percent of the respondents had husbands with five or more years of education.

TABLE 2.6: EDUCATION OF WIFE AND HUSBAND BY REGION.

Education	Whole Kingdom	Bangkok	North	Northeast	Central	South
Wife						
No education	9.0	8.1	11.2	4.8	8.8	18.6
Grade 1-3	7.8	4.2	11.1	6.1	9.6	7.5
Grade 4	70.0	44.8	69.2	82.0	68.5	62.9
Grade 5 +	13.2	42.9	8.5	7.1	13.0	11.0
Other	0.0	0.0	0.0	0.0	0.1	0.0
Total	100.0	100.0	100.0	100.0	100.0	100.0
(N)	(7,038)	(765)	(1,265)	(2,403)	(1,736)	(869)
Husband						
No education	4.5	4.6	7.0	1.8	2.7	12.2
Grade 1-3	4.3	2.4	6.2	3.3	4.0	6.3
Grade 4	67.6	29.8	73.3	78.1	68.7	60.9
Grade 5 +	22.2	61.9	13.3	15.2	22.0	19.9
Other	0.2	0.1	0.2	0.4	0.2	0.0
Don't know	1.2	1.2	0.0	1.2	2.4	0.7
Total	100.0	100.0	100.0	100.0	100.0	100.0
(N)	(7,038)	(765)	(1,265)	(2,403)	(1,736)	(869)

Generally, it is assumed that there is a relationship between occupational or work status and economic status such as earned income. In this study there is no direct measure of income in either cash or in kind, but occupational types can be seen in Table 2.7. Agriculture is still a predominant occupation in Thailand with almost 58 percent of the respondents working in agricultural and related activities. Nearly 16 percent of the respondents were housewives and unemployed. Due to highly urbanized characteristics of the Bangkok Metropolitan area, it was not surprising

to find that only 1 percent of women worked in agriculture. It was somewhat surprising to find that a high proportion, 48.2 percent, of the respondents reported themselves as housewife. Women in the Central Region also had a smaller proportion in agricultural activities than other regions. In general, women in the sample were quite economically active with about 84 percent of the women in the sample in the labor force (see Table 2.6). Women in Bangkok were less economically active than women of other regions.

TABLE 2.7: OCCUPATION AND WORK STATUS OF EVER-MARRIED WOMEN AGED 15-49 BY REGION.

Occupation and work status	Whole Kingdom	Bangkok	North	Northeast	Central	South
Occupation						
Agriculture	57.6	1.0	75.1	75.7	43.8	59.0
Professional	3.3	13.5	1.0	1.7	2.6	3.6
Sales and bussiness	11.2	15.2	9.2	8.2	15.0	11.4
Skill and semi-skill	2.9	8.8	3.2	0.7	3.6	2.3
Labor-servant	8.3	7.7	4.7	3.7	15.8	11.6
Other	0.1	0.0	0.2	0.0	0.2	0.3
Housewife	15.9	48.1	6.6	10.0	18.7	11.7
Student	0.1	0.3	0.0	0.0	0.2	0.1
Services	0.6	5.4	0.0	0.0	0.1	0.0
Total	100.0	100.0	100.0	100.0	100.0	100.0
(N)	(7,038)	(765)	(1,265)	(2,403)	(1,736)	(869)
Work status						
Outside labor force	16.0	48.5	6.6	10.0	18.9	11.7
In labor force	84.0	51.5	93.4	90.0	81.1	88.3
Farm	57.6	1.0	74.7	75.6	42.0	57.1
Non-farm	26.4	50.5	18.7	14.4	39.1	31.2
Total	100.0	100.0	100.0	100.0	100.0	100.0
(N)	(7,038)	(765)	(1,265)	(2,403)	(1,736)	(869)

CHAPTER 3

FERTILITY

AGE AT MARRIAGE

The age at which a woman marries has a direct bearing on her fertility and reproductive behavior. In Thailand, the date of first marriage ordinarily indicates initial experience with sexual intercourse. Because age at marriage influences fertility by governing the number of years of exposure to the risk of conception, it is important to understand the marriage patterns. Table 3.1 shows the mean

age at marriage by age group for ever married women by region. The mean age at marriage for ever married women at the time of survey was 20 years. The mean age for residents of Bangkok was about two years higher than the national average. Women in the Central Region also marry later, but their average is only a half year later than the national average. The differences in the mean age at marriage among women in other regions are relatively small.

TABLE 3.1 : MEAN AGE AT MARRIAGE FOR EVER-MARRIED WOMEN, AGED 15-49 BY REGION:

Age	Whole Kingdom	Bangkok	North	Northeast	Central	South
15-19	16.4	16.5	16.5	16.6	16.5	15.7
20-24	18.5	19.0	18.6	18.5	18.7	17.9
25-29	20.0	21.5	19.6	19.6	20.7	18.8
30-34	20.6	23.1	19.5	20.4	20.8	19.8
35-39	20.5	23.5	19.4	20.1	20.6	19.8
40-34	20.8	24.4	19.8	19.8	21.6	20.2
45-49	20.5	22.6	20.5	20.1	21.0	19.4
All ages (N)	20.0 (7,038)	22.3 (765)	19.4 (1,265)	19.6 (2,403)	20.4 (1,736)	19.2 (869)

Looking at the mean age at marriage for respondents presently aged 25 years and over, it appears that the mean age at marriage in Thailand has remained relatively constant for at least 20 years. However, the mean age at marriage within each region shows more variation than the national figures. These data indicate that the Thai pattern is one of a "moderate" age at marriage (20 years for the country as a whole). This pattern of moderate age at marriage and universality of nuptiality among those 25 years and over provide a background for understanding finding on fertility. Since there is no indication of a significant change in the mean age at marriage, any change in fertility may not be attributable to changes in nuptiality patterns.

CUMULATIVE FERTILITY

In this section the mean number of children ever born and number of living children are presented by rural-urban residence and region. Table 3.2 shows that ever married women aged 15-49 had an average of 3.3 children ever born alive. Out of these children, approximately 3.0 children were still living. The number of children ever born and living children increased gradually by age of woman. At the end of the reproductive period (age 45-49) a woman had an average completed family size of 6.1, with 5.1 children still living. When the figures from the CPS2 are standardized by age, using the standard population of ever-married women in the 1970 Cen-

sus, slightly lower current estimates of average numbers of children ever born and living children are revealed.

Cumulative fertility, measured here in terms of average number of children ever born alive and living children is also presented for Bangkok, provincial urban and rural areas of Thailand in Table 3.2. For both measures, the figures are lowest in Bangkok, followed by those of other urban places. The fertility gap between Bangkok and rural areas is the largest

(an average of 2.4 children ever born among women aged 15-49 in Bangkok, compared to 3.5 in the rural areas). It is interesting to note that the urban/rural gap in number of children ever born is larger than that in living children. This is due to higher levels of mortality among infants and children in the rural areas. Fertility is higher for the rural areas for all age groups. In both urban and rural places, cumulative fertility continued to increase consistently even after age 40.

TABLE 3.2: AVERAGE NUMBER OF CHILDREN EVER BORN (CEB) AND LIVING CHILDREN (LC) PER EVER-MARRIED WOMAN BY AGE AND RURAL-URBAN RESIDENCE.

Age	Whole Kingdom		Bangkok		Provincial Urban		Rural	
	CEB	LC	CEB	LC	CEB	LC	CEB	LC
15-19	0.653	0.622	0.600	0.600	0.842	0.842	0.643	0.607
20-24	1.388	1.313	1.141	1.101	1.421	1.395	1.412	1.328
25-29	2.144	1.991	1.648	1.570	1.905	1.758	2.246	2.074
30-34	3.127	2.853	2.287	2.213	2.678	2.598	3.288	2.970
35-39	4.230	3.820	3.165	3.045	3.456	3.250	4.448	3.979
40-44	5.305	4.569	3.455	3.304	4.441	4.068	5.605	4.768
45-49	6.132	5.147	4.397	4.069	5.196	4.435	6.372	5.306
Total 15-44	3.026	2.727	2.296	2.178	2.527	2.416	3.141	2.826
Total 15-49	3.336	2.969	2.429	2.322	2.831	2.622	3.495	3.081
Total 15-44*	2.982	2.689	2.176	2.093	2.582	2.436	3.126	2.792
Total 15-49*	3.321	2.953	2.415	2.305	2.863	2.651	3.475	3.062

**Standardized for age using the age distribution of ever married women from the 1970 census as standard population*

Regional differentials in cumulative fertility are shown in Table 3.3. Apart from Bangkok, the Central and the North were characterized by the lowest fertility, while the South and the Northeast were higher. For the younger ages, i.e., below 35, fertility of the Northeast was lower than the South. The opposite was true for the older age groups. The implication derived from the data here is that women in the South tended to extend their fertility over a longer period than their counterparts from other regions.

Differentials in cumulative fertility can also be examined by some measures of socioeconomic status. Besides place of residence,

probably no other social variable has been so consistently associated with fertility differentials as education. It is generally expected that at any point in time, fertility and educational level are inversely related. Table 3.4 presents the mean number of children ever born to ever-married women by age and education. It can be seen that in all age groups, except 15-19 and 40-44, those who had more education had fewer children. The results indicate that women with less than four years of formal school had an average of more than 4 children, compared to 3.3 and 1.9 respectively for those who had 4 years (completed primary) and 5 or more years.

TABLE 3.3: AVERAGE NUMBER OF CHILDREN EVER BORN (CEB) AND LIVING CHILDREN (LC) PER EVER-MARRIED WOMAN BY AGE AND REGION.

Age	Bangkok		North		Northeast		Central		South	
	CEB	LC	CEB	LC	CEB	LC	CEB	LC	CEB	LC
15-19	0.600	0.600	0.554	0.536	0.649	0.605	0.742	0.727	0.686	0.629
20-24	1.141	1.101	1.258	1.173	1.434	1.363	1.402	1.346	1.653	1.504
25-29	1.848	1.570	2.015	1.830	2.301	2.160	2.005	1.852	2.775	2.556
30-34	2.287	2.213	2.855	2.492	3.461	3.160	2.994	2.762	3.691	3.348
35-39	3.165	3.045	4.123	3.574	4.668	4.178	4.039	3.660	4.599	4.256
40-44	3.455	3.304	5.069	4.269	6.185	5.128	4.813	4.297	5.599	4.918
45-49	4.397	4.069	5.675	4.699	7.103	5.742	5.570	4.799	6.275	5.473
Total 15-44	2.267	2.178	2.760	2.417	3.361	2.989	2.831	2.590	3.571	3.233
Total 15-49	2.429	2.322	3.044	2.639	3.753	3.278	3.114	2.818	3.854	3.467
Total 15.44*	2.176	2.093	2.813	2.458	3.308	2.947	2.824	2.584	3.389	3.074
Total 15-49*	2.415	2.305	3.121	2.699	3.716	3.219	3.119	2.822	3.699	3.332

*Standardized for age using the age distribution of ever married women from the 1970 census as standard population

TABLE 3.4: AVERAGE NUMBER OF CHILDREN EVER BORN PER EVER-MARRIED WOMAN BY AGE AND BY EDUCATION

Age	Education			
	No Ed.	1-3 Yrs.	4 Yrs.	5 Yrs and Over
(N)	(634)	(549)	(4,924)	(928)
15-19	0.9	1.1	0.7	0.5
20-24	1.9	1.6	1.4	1.1
25-29	2.8	2.5	2.2	1.5
30-34	3.9	3.4	3.2	2.2
35-39	5.0	4.8	4.3	2.8
40-44	5.4	5.5	5.5	3.1
45-49	6.6	6.3	6.1	3.6
Total	4.6	4.5	3.3	1.9
Total Standardized*	3.9	3.6	3.4	2.2

*Standardized by age to the 1970 census distribution of ever married women aged 15-49

Differentials in fertility by occupation can be seen in Table 3.5 which shows that women who worked in agriculture had the largest number of children ever born (3.6) while professionals (1.8) were among those occupational groups which had smallest family size.

In general, the data confirm the expectation that there is a tendency toward smaller families among women of high occupational status. The average number of children ever born among professionals was lower than that for women in other occupations. Women who

were skilled or semi-skilled workers (2.4) had smaller number of children than those in the sale and business (3.3) and unskilled labor (3.4).

TABLE 3.5: AVERAGE NUMBER OF CHILDREN EVER BORN PER EVER-MARRIED WOMAN BY AGE AND BY OCCUPATION

Age	Occupation					
	Agriculture	Professional	Sales & Business	Skilled & Semi-skilled	unskilled Labor	Housewife
(N)	(4,051)	(233)	(788)	(205)	(584)	(1,119)
15-19	0.6	*	0.4	*	0.7	0.8
20-24	1.4	0.6	1.5	1.1	1.7	1.4
25-29	2.3	1.3	2.1	1.7	2.3	2.1
30-34	3.3	1.9	3.0	2.4	3.6	3.0
35-39	4.6	2.3	3.8	3.2	4.4	3.7
40-44	5.8	2.4	4.5	3.9	5.5	4.7
45-49	6.7	3.9	5.2	4.3	5.3	5.4
Total	3.6	1.8	3.3	2.4	3.4	2.8
Standardized Total**	3.6	1.8	3.0	2.5	3.5	3.1

*Less than 10 cases.

**Standardized for age, using the age distribution of ever-married women from the 1970 census as standard population

TABLE 3.6: AVERAGE NUMBER OF CHILDREN EVER BORN TO EVER-MARRIED WOMEN BY AGE AND WORK STATUS

Age	Work Status		
	Outside of Labor Force	In Labor Force Farming	In Labor Force Non-Farm
(N)	(1,125)	(3,996)	(1,917)
15-19	0.8	0.6	0.6
20-24	1.4	1.4	1.4
25-29	2.1	2.3	2.0
30-34	3.0	3.3	2.8
35-39	3.7	4.6	3.8
40-44	4.7	5.8	4.5
45-49	5.4	6.7	5.1
Total	2.8	3.6	3.0
Standardized Total*	3.1	3.6	2.9

*Standardized for age, using the age distribution of ever-married women from the 1970 census as standard population

Table 3.6 gives data on employment status and age as they relate to mean number of children ever born. As can be seen the major factor in the role of employment status on fertility is whether the woman is involved in farm work. Of course a number of socio-demographic variables could influence this relationship but their exact role was not within the scope of this survey and so they were not measured. When the impact of age and occupational status is examined, it results in some shifts that are unexpected. When the total children ever-born is age standardized, the initially lower level of completed fertility enjoyed by women outside the labor force was replaced by women in non-farm employment. Within age groups there is only little variation, except for the gradual increase in the farm labor group.

Infant Mortality

Although the CPS2 questionnaire was not designed with the objective of collecting data on mortality, it is possible to estimate infant mortality rates from the information on the number of live births a woman has had and the number of children still living. The proportion dead among children ever born (which is merely one minus the proportion still living) classified by age groups of mothers, can be interpreted as probabilities of dying from birth to exact ages of childhood when appropriate modifications have been made. Since the method

used to indirectly estimate infant mortality rates is somewhat complicated, it will not be described here; instead, a brief description along with detailed calculations can be found in Appendix D.

The resulting infant mortality rates by urban-rural residence are given in Table 3.7, with analogous data from CPS1 for comparison. The rate of 52 deaths per thousand births from CPS2 represents a decline from the rate of 57 in CPS1. A steeper decline in infant mortality appears to have taken place in rural areas where the rate dropped from 63 in CPS1 to 55 in CPS2. However, what appears to be an increase in infant mortality in Bangkok is most probably not real but is due instead to the small sample sizes, especially in CPS1. In fact, CPS1 data show some abnormalities for all sectors (See Appendix D) and are probably less reliable than the estimates from CPS2. These indirect estimating procedures are usually applied to data from large sample surveys and censuses and are less useful in smaller, more intricate studies such as CPSs. In addition, there were changes in the wording of the questions between the two surveys. Despite these drawbacks, it is probably safe to say that infant mortality in Thailand is around 52 deaths per thousand births, that the level is higher in rural than urban areas and that there is some evidence of a decline over recent years.

TABLE 3.7: INFANT MORTALITY RATES ESTIMATED FROM DATA ON THE PROPORTION DEAD AMONG CHILDREN EVER BORN, RURAL-URBAN, 1978-1981.

Sector	CPS1 1978	CPS2 1981
Whole Kingdom	57	52
Rural	63	55
Bangkok	23	31
Total Urban	--	31

Source: Appendix D

CURRENT FERTILITY

An examination of general marital fertility rates as presented in Table 3.8 shows that in 1981 there were about 179 births per 1000 currently married women in the whole kingdom of Thailand. Comparisons of the marital general fertility rates from the CPS1 and CPS2

show a difference of about 4.4 percent. The small difference was in the direction of higher fertility in the CPS2 than in the CPS1, a result which may be attributed to real variations in period fertility rates, or small differences in methodology between the two rounds of the survey.

TABLE 3.8: AGE-STANDARDIZED* GENERAL MARITAL FERTILITY RATES AMONG CURRENTLY MARRIED WOMEN AGED 15-49 BY REGION, 1978 AND 1981.

Region	CPS1 1978	CPS2 1981	Percent Change
Whole Kingdom	171.6	179.2	4.4
Bangkok	173.8	178.4	2.6
North	128.3	141.1	10.0
Central	179.1	184.4	3.0
Northeast	173.9	193.5	12.2
South	225.9	187.3	-17.1

*Standardized directly using the age distribution of currently married women from the 1970 census as a standard.

The differences in rates are too small and too subject to bias to be taken as evidence of increasing fertility in Thailand.

An examination of the fertility level by region shows variation in the fertility rate. In CPS2, fertility was highest in the Northeast (193.5 per thousand -- about 8 percent higher than the national rate -- and was lowest in the North (141.1 per thousand), about 21.3 percent lower than the national level. Interestingly, the rate for the North was even considerably below that of Bangkok (178.4 per thousand).

Estimates of current fertility rates can be shown as age-specific fertility rates. In order to summarize the current level of fertility, the total fertility rate was also calculated and is shown in Table 3.9, which presents comparable figures

from various surveys between 1964 and 1981. In each round of the survey after the first Survey of Population Change (SPC) in 1964-65 until the first CPS in 1978 the data all show that fertility fell steadily. In the CPS2 total fertility rate shows no further decline. In fact it shows a nominal (0.1) increase over the first round of CPS. As mentioned before, the slightly higher fertility rates in the second round should not be construed as an evidence of increase in fertility. Sampling fluctuation, the difference in methodology between the two rounds, and fluctuations in period measures of fertility, may all have attributed to some of the nominal difference in figures. Since single women were excluded in the CPS2, the total fertility rate was calculated by multiplying age-specific fertility rates for ever-married women by the proportion ever-married by age group as reported in the CPS1.

TABLE 3.9: AGE-SPECIFIC FERTILITY RATES FOR THAILAND, 1964-65, 1975, 1974-76, 1978, 1981.

Age Group	SPC ¹	SOFT ²	SPC ¹	CPS1*	CPS2**
	1964-1965	1975 (1970-74)	1974-1976	1978	1981
15-19	.07	.08	.08	.06	.06
20-24	.26	.23	.24	.20	.22
25-29	.30	.23	.25	.19	.22
30-34	.27	.19	.18	.13	.14
35-39	.22	.17	.14	.11	.09
40-44	.11	.08	.07	.04	.05
45-49	.02	.03	.02	.02	.01
Total Fertility Rate	6.3	5.1	4.9	3.8	3.9

Source : 1. National Statistical Office, 1981. Report of The Survey of Population Change, 1974-1976. Bangkok.

2. Piampiti, S. and J. Knodel, 1978. Revised Estimates of Age-Specific Fertility Rates From the Survey of Fertility in Thailand, Institute of Population Studies, Chulalongkorn University and Population Survey Division, National Statistical Office, Bangkok.

* Calculated using births occurring 0-11 months before the survey plus one-half of births occurring one year prior to the survey (assuming that the latter category included births occurring between 11.5 and 12.5 months before survey). These figures include births to women regardless of marital status and differ slightly from previously published figures which disregarded a small number of births to women who were not currently married.

** Calculated by multiplying the age-specific fertility rates for ever-married women by the proportion ever-married by age reported in the CPS1, since CPS2 sampled ever-married women only.

TABLE 3.10: PERCENT CURRENTLY PREGNANT AMONG CURRENTLY MARRIED WOMEN BY AGE AND BY REGION.

Age	Region					
	Whole Kingdom	Bangkok	North	Northeast	Central	South
(N)	(6,552)	(725)	(1,197)	(2,204)	(1,628)	(798)
15-19	23.3	33.3	23.6	23.6	23.0	16.1
20-24	15.9	23.7	12.8	15.9	14.5	18.3
25-29	10.2	15.3	6.7	9.1	9.1	15.8
30-34	6.5	8.3	4.8	6.2	5.8	9.0
35-39	4.0	4.0	1.1	6.3	2.4	5.4
40-44	2.6	0.0	2.7	2.7	3.1	3.0
45-49	0.0	0.0	0.0	0.0	0.0	0.0
Total	7.9	10.2	6.2	8.1	7.2	9.4
Standardized*						
Age 15-44	9.1	12.3	7.0	9.3	8.3	11.0

Note: Table excludes 75 women who were coded don't know or not sure with respect to pregnancy status.

*Standardized directly using the age distribution of currently married women in the 1970 Census as standard population

Additional information on current fertility can be provided by looking at the data on the proportion of women currently pregnant in Table 3.10. It can be seen that for the country as a whole about 7.9 percent of currently married women age 15-49 were pregnant at the time of interview in 1981. Surprisingly, women in Bangkok had the highest proportion (10.2%) of pregnant women among the regions. The result here may be in part attributed to the fact that women in Bangkok may have been better educated than women in the rural area, thus being more likely to be aware of their own pregnancy earlier than rural women. In other regions, the data show the lowest proportion of pregnant women in the North (6.2%). Data also indicate that Central Thailand had a slightly lower percentage pregnant than the national level. In both the Northeast (8.1%) and the South (9.4%) percentage pregnant were higher than the national average.

Analysis of current fertility was also carried out by looking at the mean interval since last birth. Table 3.11 demonstrates the average duration in months since last live birth for currently married women aged 15-49 by age and region. For the country as a whole the mean duration was

61.3 months for women aged 15-49 and was 51.5 months for women aged 15-44. As expected, the average open interval increases with advanced age in all regions. Comparison across the region found that the South had the shortest open interval (48.3), as compared to the North (64.3) which had the longest open interval. Women in Bangkok (52.9) had a shorter interval since last birth than those in the central (56.0) but longer than those in the Northeast (49.1).

TRENDS IN FERTILITY

While current measures of fertility did not show a decline in fertility between the years 1978 and 1981, there is some evidence that suggests Thailand is on the verge of experiencing a further decline in fertility. By comparing the data on the average number of children ever born from various sources (see Table 3.12) the data indicate that there is a steady decrease in the average number of children ever born, especially among those women who were older than 25 years. This decline in the number of children ever born occurred, despite the fact that older women experienced much of their childbearing a number of years in the past.

TABLE 3.11: AVERAGE OPEN INTERVAL (IN MONTHS) AMONG CURRENTLY MARRIED WOMEN AGED 15-49 BY AGE AND REGION OF RESIDENCE

Age	Whole Kingdom	Bangkok	North	Northeast	Central	South
15-19	11.8	15.0	14.1	9.1	11.4	15.8
20-24	19.9	17.7	23.7	18.8	18.8	20.3
25-29	33.5	31.1	40.7	32.2	32.1	30.4
30-34	52.7	43.5	72.0	47.0	55.7	43.4
35-39	75.3	68.3	93.2	68.3	83.1	60.1
40-44	102.9	118.7	118.7	91.6	109.9	90.1
45-49	130.5	165.5	143.0	109.6	145.7	120.4
15-44	51.5	52.9	64.3	49.1	56.0	48.3
15-49	61.3	63.6	71.8	55.3	64.6	55.5
15-44*	51.4	49.9	63.5	46.6	54.0	44.5
15-49*	59.2	61.2	71.2	52.8	63.0	51.9

*Standardized by age using currently married women in 1970 census as standard population.

Nevertheless, for most age groups the number of children ever born was lower in 1981, with the overall trend from 1969 to the present, in the direction of fewer children. The pattern is inconsistent only for SPC data (1974-1976) which tended to be lower than the CPSI (1978) in three age groups-- 20-24, 40-44 and 45-49--and tend to be higher than the SOFT (1975) in the 35-39 age group. It should be noted that the SPC represents a major dif-

ference in methodology (a dual record system versus a retrospective sample survey), so comparisons between SPC and other survey data should be used with caution. Despite inconsistencies in some age groups, when compared across the surveys, the average number of children ever born for all ever married women aged 15-49 shows a steady decline both before and after age standardization.

TABLE 3.12: AVERAGE NUMBER OF CHILDREN EVER BORN TO EVER-MARRIED WOMEN BY AGE GROUP FROM SEVERAL SOURCES, THAILAND, 1969-70, 1972-73, 1975, 1974-76, 1978 AND 1981.

Age Group	LS 1 ¹ 1969/70	LS 2 ¹ 1972/73	SOFT ¹ 1975	SPC ² 1974/1976	CPS 1 ³ 1978	CPS2 1981
15-19	0.7	0.8	0.7	0.6	0.7	0.7
20-24	1.5	1.4	1.5	1.3	1.4	1.4
25-29	2.8	2.8	2.6	2.5	2.4	2.1
30-34	4.0	4.1	3.9	3.8	3.4	3.1
35-39	5.8	5.2	4.9	5.9	4.6	4.2
40-44	6.5	6.9	6.1	5.8	5.7	5.3
45-49	6.9	6.9	6.7	6.4	6.5	6.1
15-49	4.5	4.4	3.9	3.5	3.7	3.3
15-49*	4.1	4.1	3.9	3.7	3.6	3.3

* Standardized directly for age, using the distribution of ever-married women from the 1970 census as a standard.

¹ Knodel, John and Nibhon Debavalya. 1978. *Thailand's Reproductive Revolution. International Family Planning Perspectives and Digest* 4:34-39.

² National Statistical Office, 1978, *Report of the Survey of Population Change, 1974-1976. Bangkok.*

³ These figures were recalculated from CPSI raw data.

The decline in the number of children ever born is consistent with the decline in the proportion of women currently pregnant (see Table 3.13) and the increase in the mean interval since last birth (see Table 3.14). The proportion of married women currently pregnant at the time of LS1 in 1969-70 was as high as 15.3 percent. Since then the percentage pregnant has been declining steadily. In 1981, only 9.1 percent of currently married women were pregnant at the time of interviewing.

The mean interval since the last birth among currently married women aged 15-44 increased steadily from 31 months in 1969-70 to 49 months in 1978 and 51 months in 1981. While this measure is derived from the information on recent fertility and is not independent of the marital fertility rate, together with the proportion pregnant, it still suggests that marital fertility may have declined and the population may experience a further decline in the near future.

TABLE 3.13: AGE-STANDARDIZED* PERCENT CURRENTLY PREGNANT AMONG CURRENTLY MARRIED WOMEN AGED 15-44, 1969-70, 1972-73, 1975, 1978 AND 1981.

LS1 1969-70	LS2 1972-73	SOFT 1975	CPS1 1978	CPS2 1981
15.3	14.3	11.8	10.1	9.1

* Standardized directly using the distribution of currently married women from the 1970 census as a standard population.

Source: Suvanajata, T. and P. Kamnansilpa. 1979. *Thailand Contraceptive Prevalence Survey : Country Report 1979*. National Institute of Development Administration, Ministry of Public Health and Westinghouse Health System Bangkok, P.20.

TABLE 3.14: MEAN NUMBER OF MONTHS SINCE LAST BIRTH AMONG CURRENTLY MARRIED WOMEN AGED 15-44, 1961-78*

LS1 1969-70	LS2 1972-73	SOFT 1975	CPS1 1978	CPS2 1981
31	36	43	49	51

* Standardized directly using the distribution of currently married women from 1970 census as a standard

Source: Knodel, John, Debavalya, Nibhon and P. Kamnuansilpa. 1980. *Thailand's Continuing Reproductive Revolution, International Family Planning Perspectives*, 6:88.

DESIRE FOR ADDITIONAL CHILDREN

In the CPS survey women were asked whether they wanted any more children. The answer to this question lends some insight into the process of changing family-size norms. In general, the desire for more children is a function of current age and the number of living children. By putting together the number of additional desired children with the respondent's actual number of living children, the total number gives a good surrogate measure of current individual family-size norms. Family size norms may have the programmatic value to the extent that the decision to adopt contraception will be in part influenced by the individual family-size norms. A married couple may not adopt contraception until they have reached their expected family size; and if they do, it is very likely that they will adopt a temporary method for the purpose

of spacing rather than terminating their reproduction.

Table 3.15 shows the percent distribution of currently married women who wanted no more children by age and region. It can be seen that for the country as a whole about 66 percent of currently married women did not want any more children. The South is the region that had the lowest proportion of women who wanted no more children (59%). The differences in other regions were small, with the North, North-east and Central showing almost an identical percentage of women who wanted no more children. The data in the table also show that after the age of 29 years, no more than only 40 percent of the women wanted any more children. Also, it can be seen from the table that almost all women completed their desired family by the age of 40 years.

TABLE 3.15: PERCENT OF CURRENTLY MARRIED WOMEN WHO WANTED NO MORE CHILDREN BY AGE AND REGION

Age	Whole Kingdom	Bangkok	North	Northeast	Central	South
(N)	(6,627)	(725)	(1,212)	(2,235)	(1,645)	(810)
15-19	12.7	27.8	10.9	7.4	22.2	6.3
20-24	30.1	35.1	29.3	31.2	33.1	16.8
25-29	54.3	52.0	61.2	57.1	52.1	42.9
30-34	72.1	63.7	77.3	73.9	74.4	63.7
35-39	86.1	83.2	87.4	87.9	87.6	79.1
40-44	92.7	92.1	95.4	96.0	93.0	81.5
45-49	95.2	96.0	98.2	94.5	95.4	92.4
Total	66.2	65.7	67.7	67.6	67.1	59.1

Women in the sample were also asked the number of additional children desired. By adding the number of children a woman already has with the additional number desired, we get a measure called the "expected" number of children. When the number of expected children is examined using age as an independent variable, the relationship, as one would expect, is that younger women want fewer children than older women (see Table 3.16). The data from

CPS1 and CPS2 both show a positive relationship between age and expected children among all currently married women.

Mean expected number of children may serve as a surrogate measure of family size norm in the society. The data from the CPS suggest that the young cohorts who have recently begun childbearing have a smaller family-size norm than those in the earlier cohorts.

TABLE 3.16: MEAN NUMBER OF CHILDREN EXPECTED* FOR CURRENTLY MARRIED WOMEN AGED 15-49 BY AGE

		Age						
		15-19	20-24	25-29	30-34	35-39	40-44	45-49
All currently married women	(CPS1)	2.3	2.5	3.0	3.6	4.4	5.2	5.8
All currently married women	(CPS2)	2.3	2.5	2.7	3.3	4.0	4.7	5.3
Currently married women who want more Children	(CPS1)	2.6	2.8	3.3	3.3	3.9	4.0	2.9
Currently married women who want more children	(CPS2)	2.5	2.7	2.9	3.3	3.7	3.9	3.7

* Number of Expected children is calculated by adding living children and the number of additional children desired.

Comparison of data from CPS1 with CPS2 shows a decline in the family-size norm during the period between 1978 and 1981. If family-size norm continues to decline, or remain constant, especially among those in the younger cohorts, it would mean a decline in completed fertility.

Differentials in mean number of expected children can also be examined by region as show in Table 3.17. The table shows a decline in the mean expected number of children in the period between the CPS1 and CPS2. Family-size norms declined in all regions of Thailand. Bangkok and the Central both had a decline of about 15 percent. In other regions the declines were smaller. When consideration is given only to those who wanted more children, the declines in most regions were lower.

Expected family size can also be analyzed

by the respondents' educational level. It is clear that in both the 1978 and 1981 surveys, education was negatively correlated with the expected family size. In CPS2 currently married women who had no education expected to have 4.5 children. The number of expected children declines consistently with increases in years of education. For those who had more than four years of education, the expected family size is 2.5. It is particularly interesting to note that for all educational groups, the expected family size declined during the two surveys.

When consideration is given only to those who wanted more children, it was found that the same pattern still persists. That is to say, expected family size declines with increase in years of schooling. During the two surveys, expected family size declined slightly for all educational groups except among women with no education.

TABLE 3.17: MEAN NUMBER OF CHILDREN EXPECTED* FOR CURRENTLY MARRIED WOMEN AGED 15-49 BY REGION

	Region					
	Whole Kingdom	Bangkok	North	Northeast	Central	South
All currently married women (CPS1)	3.8	3.3	3.4	4.2	3.9	4.6
All currently married women (CPS2)	3.5	2.8	3.1	3.9	3.3	4.2
Currently married women who want more children (CPS1)	3.1	3.0	2.5	3.4	2.7	3.8
Currently married women who want more children (CPS2)	2.9	2.4	2.7	3.1	2.7	3.7

* Number of expected children is calculated by adding living children and the number of additional children desired.

TABLE 3.18: MEAN NUMBER OF CHILDREN EXPECTED* AMONG CURRENTLY MARRIED WOMEN AGED 15-49 BY EDUCATION

	Education			
	No Education	1-3 yrs.	4 yrs.	5 yrs. and over
All currently married women * (CPS1)	4.8	4.7	3.7	2.8
All currently married women (CPS2)	4.5	4.2	3.5	2.5
Currently married women who want more children (CPS1)	3.5	3.3	3.1	2.9
Currently married women who want more children (CPS2)	4.1	3.2	3.0	2.4

* Number of expected children is calculated by adding living children and the number of additional children desired.

CHAPTER 4

CONTRACEPTIVE AWARENESS

One of the objectives of the Contraceptive Prevalence Survey is to determine the proportion of the female population in reproductive ages who are aware of family planning. The CPS2 findings presented in this chapter confirm that Thai women generally know about family planning and that most of them recognize all of the modern methods. Achieving the highest level of knowledge over the broadest range of contraceptive methods has been a major goal of Thailand population program. The CPS results document virtual achievement of this program goal.

MEASURING CONTRACEPTIVE KNOWLEDGE

The CPS measured the level of contraceptive knowledge through a series of questions similar to those used in the first round of the Thai CPS, and the Survey of Fertility in Thailand (SOFT). In all three surveys a general question on awareness of ways for delaying or preventing pregnancy was asked. Respondents were also asked to indicate the specific methods they knew. The CPS data collection methodology did differ from the earlier SOFT approach in terms of the techniques used in prompting respondents who did not spontaneously mention specific methods. While SOFT prompted on methods the respondents did not name by giving a brief method description, CPS prompted only with the commoner colloquial name for the method. As will be seen later in the discussion, the differences in approach do not appear to have resulted in significant differences in knowledge levels when the results of the surveys were compared. The impact of contraceptive method prompting procedures on CPS results can be seen in Figure 4.1. Prompting leads to some impressive increases in the reporting of contraceptive knowledge by respondents. The specific methods which showed substantial increases provide insights into possible response biases. Other research has shown that women in many cultures are hesitant to indicate know-

ledge of male associated methods. This same bias is clearly illustrated in Figure 4.1, where knowledge for male sterilization and condom jumped significantly under prompting. The relatively high level of knowledge for both methods, a large proportion of which was garnered by prompting, clearly indicates that there is some hesitancy to respond to questions on male methods, despite relatively high levels of knowledge.

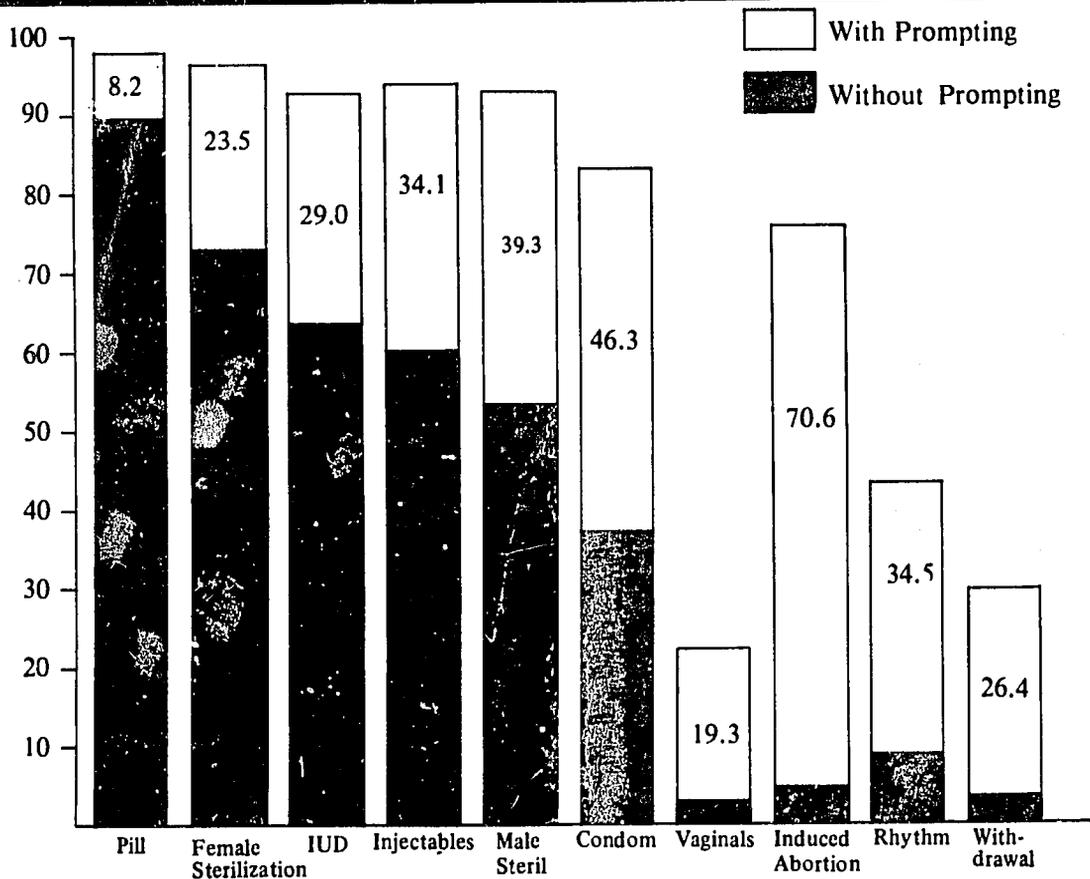
Knowledge of abortion also increases significantly following prompting. Abortion is not included in Thailand's organized family planning efforts so is not marketed or offered by program workers. This may explain why Thai women do not appear to consider abortion as a fertility regulation method, unless they are specifically prompted on it.

When the levels of contraceptive awareness are compared with those obtained in CPS1 (data not shown), male sterilization was the method with the largest increase in the proportion who indicated method knowledge without prompting (59% up to 73%) in 1981. Injections also increased the proportion providing unprompted knowledge of the method (40% up to 60.4% in 1981).

In addition it should be noted that vaginal methods, induced abortion, rhythm and withdrawal yielded very low unprompted knowledge proportions. While there was some increase with prompting (especially for abortion), the prompting for the remaining three methods never raises to the levels seen for the methods promoted under the National Family Planning Program.

In addition to the possible effect of prompting on the proportion of women claiming knowledge of a specific method, the quality of contraceptive knowledge should be considered. The CPS measure only the most rudimentary aspects of contraceptive awareness. Knowledge,

FIGURE 4.1: PERCENT OF EVER-MARRIED WOMEN AGED 15-49 AWARE OF SPECIFIC CONTRACEPTIVE METHODS WITH AND WITHOUT PROMPTING



in this case, is only an indication that the woman has heard of the method, and not that she understands its contraceptive effect or its proper use. In addition it should be noted that knowledge of a specific contraceptive method does not signify approval of that method nor any intention to use that method or any other method.

Throughout the following discussion of levels of contraceptive knowledge in Thailand it is assumed that women are aware of a specific method if they reported that they have heard of that method, either with or without prompting from the interviewer. Inclusion of prompted responses may result in some over-reporting of knowledge; however, it is no likely that the over-reporting is extensive given the extremely high levels of method knowledge.

TRENDS IN CONTRACEPTIVE KNOWLEDGE

Contraceptive awareness is virtually universal in Thailand. Table 4.1 compares the percentage of respondents reporting knowledge of methods in the SOFT and the two rounds of the CPS. These data show clearly that knowledge levels were already quite high in 1975, then increased significantly by the beginning of 1979, and achieved near universality by 1981. In the six year interval between SOFT and CPS2, the most significant increases have been for injectables (up 25%), male sterilization (up 23%), condom (up 35%), and induced abortion. The increased awareness of specific methods of fertility regulation can be attributed to several factors including effective social marketing, increased availability, and rising levels of family planning awareness in general among Thai couples.

TABLE 4.1 : PERCENT OF EVER-MARRIED WOMEN AWARE OF SPECIFIC, CONTRACEPTIVE METHODS, 1975, 1978 AND 1981.

Method	SOFT	CPS1	CPS2
	1975	1978	1981
Pill	92	99	98
Female Sterilization	87	96	97
IUD	86	92	93
Injectables	70	90	95
Male Sterilization	70	87	93
Condom	48	82	83
Vaginals	22	19	22
Induced Abortion	-	62	75
Rhythm	-	-	43
Withdrawal	-	-	29

Source: Suvanajata, T. and Peerasit Kamnuansilpa. 1979. *Thailand Contraceptive Prevalence Survey : Country Report 1979*. National Institute of Development Administration, Ministry of Public Health and Westinghouse Health System, Bangkok. Tables 4.1 and 4.3.

The change in levels of contraceptive awareness is further illustrated in Table 4.2. In the interval between 1969 and 1981, the proportion of currently married women who knew five or more methods increased by ten-fold in the rural areas and six-fold in the urban area. The increase for the whole kingdom matches very closely the ten-fold increase experienced by rural areas, as one would expect with a high proportion of the Thai population in rural areas. The expectation that urban levels of knowledge

would be higher than rural levels in not born out in Table 4.2. If similar distribution and means are calculated which include prompted knowledge, the urban area indicates higher levels of knowledge than rural areas. This suggests that there is a greater hesitancy on the part of urban women to respond to this question. (Mean number of prompted and unprompted method know: Rural-6.5, Provincial urban - 6.9, Bangkok - 7.2, whole kingdom- 6.6).

TABLE 4.2: NUMBER OF MODERN CONTRACEPTIVE METHODS KNOWN WITHOUT PROMPTING AMONG CURRENTLY MARRIED WOMEN AGED 15-44 BY RESIDENCE

Number of Methods Known without Prompting	Rural			Urban			Kingdom		
	LS1	SOFT	CPS2	LS1	SOFT	CPS2	LS1	SOFT	CPS2
	1969	1975	1981	1970	1975	1981	1969/70	1975	1982
0	51.6	13.6	3.8	25.6	8.0	1.6	47.0	12.9	3.5
1	20.9	18.1	7.5	25.6	13.9	4.9	21.8	17.5	7.1
2	11.5	22.3	10.7	18.4	22.6	10.6	12.7	22.3	10.7
3	7.7	22.2	16.3	16.2	25.9	19.7	9.2	22.7	16.9
4	4.4	16.7	22.1	7.6	15.4	24.8	5.0	16.5	22.6
5+	3.8	7.1	39.6	6.7	14.3	38.4	4.3	8.1	39.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Mean number known	1.11	2.34	3.9	1.80	2.86	3.9	1.23	2.41	3.9

Source : N. Debavalya and J. Knodel, 1978. *Fertility Transition in Thailand : A Comparative Analysis of Survey Data, World Fertility Survey-Survey of Fertility in Thailand, Report No. 3, P. 11.*

DEMOGRAPHIC AND SOCIO-ECONOMIC DIFFERENTIALS

Age Differentials

Age levels of knowledge are generally so high among respondents in the Thai CPS that discriminative analysis is not very fruitful for uncovering meaningful differences among subgroups. The data is provided in this report primarily for reference to better understand patterns of contraceptive usage which will be presented later in this report, and for researchers and program managers using these in comparison with other programs.

In Table 4.3, the proportion with knowledge of each method by age is presented. The pattern for knowledge appears to be that younger and older women tend to have slightly less knowledge of methods than those in the middle age groups (25 to 39 years). The only exception to this is abortion where younger women tended to have slightly higher levels of knowledge than older women. The differences between the proportions with knowledge of a specific method in any age group are not particularly large, reaffirming the wide spread awareness of contraception through all the age groups in Thailand.

TABLE 4.3: PERCENT OF EVER-MARRIED WOMEN AWARE OF SPECIFIC CONTRACEPTIVE METHODS BY AGE.

Method	Age							
	All Ages	15-19 N=291	20-24 N=1125	25-29 N=1443	30-34 N=1350	35-39 N=1094	40-44 N=1032	45-49 N=703
Pill	98	98	98	99	99	98	98	95
Female Sterilization	97	93	97	97	98	97	96	94
IUD	93	88	94	94	93	94	92	88
Injectables	95	93	96	97	96	94	93	88
Male Sterilization	93	88	94	94	94	92	92	89
Condom	83	80	88	90	88	83	77	51
Vaginals	22	13	16	22	26	25	23	20
Induced Abortion	75	79	75	79	77	75	73	67

Educational Status

Table 4.4 shows that levels of knowledge follow an expected pattern when related to education. Those women with lower education levels tend to have lower levels of contraceptive knowledge. In the first round of the CPS there were some inconsistencies in this pattern for condoms. However, the second round found a more consistent and expected pattern for this methods. There were also differences by education in the knowledge of abortion, vaginal methods and condoms. The likelihood that the respondent would recognize any of these methods tends to vary more directly with education than for the other more commonly used and known family planning methods.

SUB-NATIONAL PATTERNS

Urban-Rural Differentials in Contraceptive Awareness

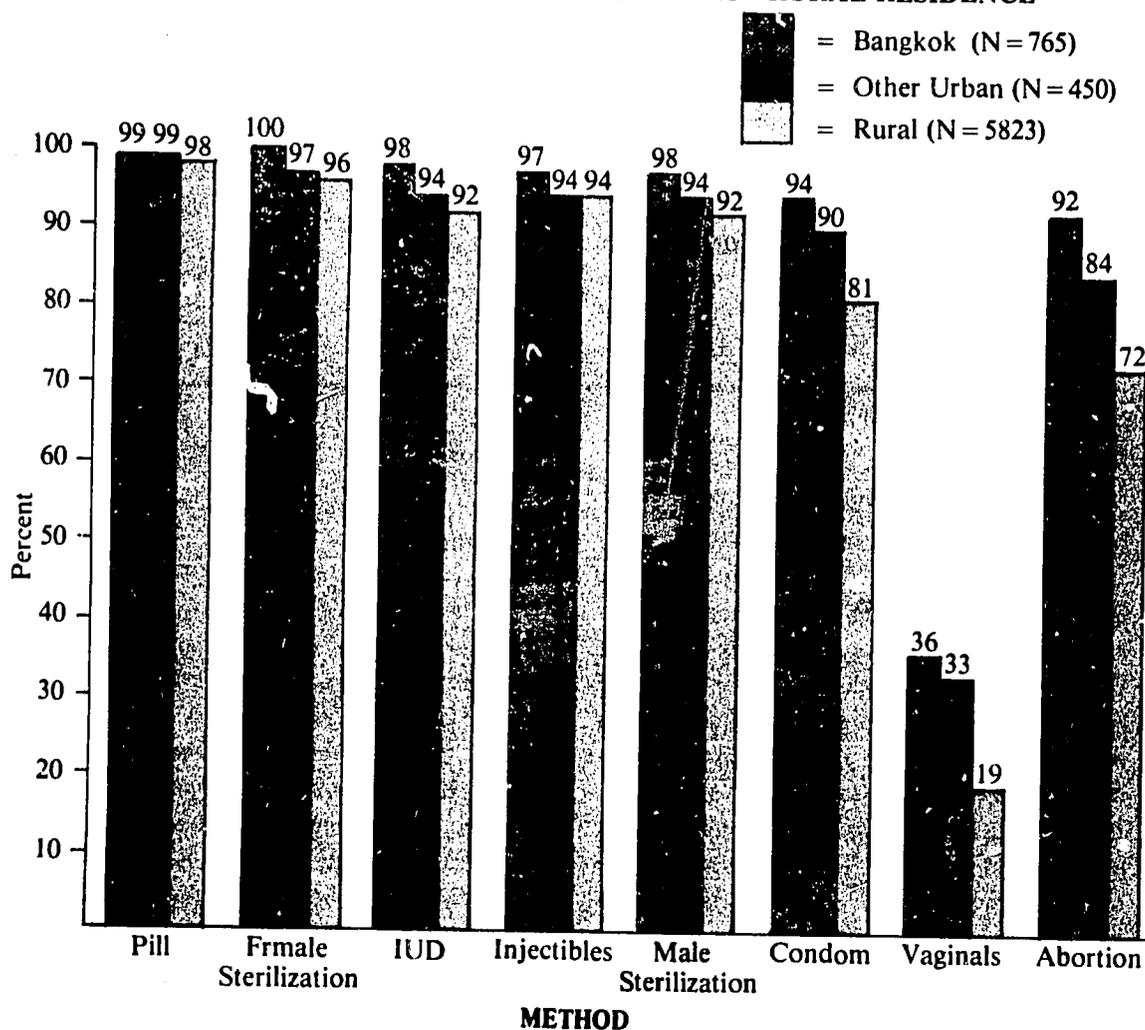
The pattern of awareness of specific contraceptive methods by rural and urban (Bangkok/other urban) is presented in Figure 4.2. In this figure, the near universal knowledge of certain methods makes differential analysis useless. Bangkok is always highest, other urban areas equal or marginally less than Bangkok, and rural areas only slightly lower than Bangkok/other urban areas. The only methods for which there is any real difference between urban and rural areas appears to be condoms, vaginals and abortion.

TABLE 4.4 : PERCENT OF EVER-MARRIED WOMEN AWARE OF SPECIFIC CONTRACEPTIVE METHODS BY EDUCATIONAL STATUS.

Method	Educational Status				
	All Categories n = 7038	No Education N = 634	Grades 1-3 N = 549	Grade 4 N = 4924	Grade 5 and above N = 928
Pill	98.0	92.1	97.8	98.5	99.9
Female Sterilization	96.6	88.6	95.4	97.4	98.3
IUD	92.7	77.8	89.6	94.2	97.0
Injectables	94.5	83.8	92.9	95.5	97.4
Male Sterilization	92.7	81.1	90.9	93.6	96.9
Condom	83.3	65.3	72.7	84.4	96.1
Vaginals	21.8	15.1	19.9	19.2	41.7
Induced Abortion	75.2	66.9	72.1	74.0	89.2

Note : Three women were reported as "not stated" as to educational status.

FIGURE 4.2 : PERCENT OF EVER-MARRIED WOMEN AWARE OF SPECIFIC CONTRACEPTIVE METHODS BY URBAN-RURAL RESIDENCE



Regional Differentials in Contraceptive Awareness

Regional variations in contraceptive knowledge are presented in Table 4.5. Again, high levels of knowledge are prevalent in all regions of Thailand. There are a few unusual aspects of regional analysis which require further analysis. For example, condom awareness is higher in Bangkok than any other region of the country. One unexpected inconsistency is the relatively poor showing of the North in levels of awareness of specific methods. This poor showing may be the result of lagging program efforts in the North, but use and fertility data do not support this. It is more likely that the relative

decline in contraceptive knowledge in the North of Thailand is an artifact of random sample selection procedures.

ATTITUDES TOWARDS FAMILY PLANNING

The CPS2 asked a question on attitude toward family planning among non-users. For the respondents the results are presented in Table 4.6. As can be seen in the Table, proportion of women that were opposed to family planning was relatively small. Among Thai women, family planning is an acceptable practice.

TABLE 4.5 : PERCENT OF EVER-MARRIED WOMEN AGED 15-49 AWARE OF SPECIFIC CONTRACEPTIVE METHODS BY REGION OF RESIDENCE

Method	Region					
	Whole Kingdom N = 7038	Bangkok N = 765	North N = 1265	Central N = 1736	Northeast N = 2403	South N = 869
Pill	98.0	99.1	96.3	99.5	98.7	94.8
Female Steril	96.6	99.8	90.8	99.4	98.1	91.9
IUD	92.7	97.5	85.1	96.3	96.9	80.9
Injectables	94.5	97.1	89.3	97.6	95.3	91.3
Male Steril	92.7	98.4	81.7	96.7	95.0	89.2
Condom	83.3	94.2	75.0	84.9	82.9	83.7
Vaginals	21.8	36.1	9.9	21.2	22.2	26.8
Induced Abortion	75.2	92.3	55.3	84.4	71.3	81.7
Any Method	99.4	100.0	98.8	99.9	99.8	97.6

TABLE 4.6: ATTITUDES TOWARDS FAMILY PLANNING AMONG EVER-MARRIED WOMEN, AGED 15-49 BY REGION

	Whole Kingdom	Bangkok	North	North-east	Central	South
Currently Using	54.0	62.2	60.4	49.3	59.8	39.5
Acceptable	42.4	35.6	37.7	46.8	38.1	51.5
Not Acceptable	1.5	0.9	0.6	1.3	1.4	4.0
Depends	1.2	1.3	0.8	1.6	0.4	2.0
Not Dure, don't know	0.0	0.0	0.5	1.0	0.3	3.0
Total (N)	100.0 (7,038)	100.0 (765)	100.0 (1,265)	100.0 (2,403)	100.0 (1,736)	100.0 (869)

The respondent's perceptions of her husband's attitude toward family planning is presented in Table 4.7. As can be seen in the Table, the level of husbands, who find family planning

unacceptable, is higher than the similar measure for their wives. However, the overall proportions of husbands, who find family planning acceptable, are still quite high.

TABLE 4.7 : WIFE'S PERCEPTIONS OF HUSBAND'S ATTITUDE TOWARDS FAMILY PLANNING

Husband's Attitudes	Whole Kingdom	Bangkok	North	North-east	Central	South
Acceptable	87.1	92.0	88.6	85.6	86.6	85.7
Not Acceptable	4.8	3.4	3.5	4.3	4.7	9.8
No Opinion	4.3	3.8	3.1	5.3	5.4	1.2
Depends	0.4	0.8	0.6	0.5	0.2	0.4
Not sure, don't know	3.4	0.0	4.2	4.3	3.1	2.9
Total	100.0	100.0	100.0	100.0	100.0	100.0
(N)	(7,038)	(765)	(1,265)	(2,403)	(1,736)	(869)

CHAPTER 5

CONTRACEPTIVE USE

Some of the most important data collected in the Thailand CPS were those on the use of contraception. As this chapter will show, contraceptive use has been steadily increasing in Thailand since the beginning of the 1970s. Thai women appear to be rapidly adopting family planning to both limit and space births.

The Thailand CPS collected information on both past and current use of modern and traditional methods of fertility regulation. Current use was defined as the use of a method within the month preceding the date of interview. It must be noted that the respondents defined themselves as current users, and no data were collected to judge the effectiveness of use. It is possible that some of the respondent reported intermittent use as current use. However, because of the method mix and the relative sophistication of Thai women, the effect of this factor on the reported figure is probably relatively minor.

EVER USE OF CONTRACEPTION

Evidence from the surveys clearly indicates that the level of contraceptive use in Thailand has been increasing. The proportion of ever married women aged 15-49 years who had ever used at least one method of contraception rose from 45 percent in 1975 to 69 percent in 1978, and to 76 percent in 1981. Most of the ever users had tried some efficient method, with the pill the most widely used method. Among ever married women in CPS2, 51 percent reported that they had used the pill. This compared with only 26 percent in 1975 and 47 percent in 1979 of ever married women who reported ever use of the pill. Injectables and female sterilization had an equal share of percentage distribution of ever users. Eighteen percent of ever married women either use injectables or female sterilization. For both methods, the percentage ever using increased from the time of both SOFT and CPS1. Proportion of ever married women

who used condom, IUD or rhythm also increased, but not by a significant amount. Other methods of contraception either remained at the same level or declined slightly in the proportion of ever users (see Table 5.1.)

Sub-National Patterns

The percentage of women who had ever used birth control varied by region. As Table 5.2 indicates, the level of ever use of any method was highest in the Bangkok metropolitan areas where about 85 percent of ever-married women had tried some method of contraception. The level of ever use in other regions while lower than in Bangkok was still high, particularly in the Central (82%) and the North (80.4%), followed by the Northeast (71.7%) and the South (59.3%).

As Table 5.2 shows, there was also considerable variation by region in experiences with specific methods. Despite the fact that most women have tried the pill, women in the North (62.5%) and those in Bangkok (58.3%) were more likely than women in other regions to have used this method. The percentage of ever married women who had ever used the pill varied considerably among the regions ranging from only 28.8 percent in the South to 62.5 percent in the North.

The popularity of other methods also varied among the regions (Table 5.2.). Ever married women in the North were, for example, more likely to have tried injectables than those in the other regions. More couples had used condoms in Bangkok than in the other areas. Couples in Bangkok were also more likely to use permanent methods -- female and male sterilization. These two methods accounted for nearly 30 percent of ever-users in Bangkok. The higher ever use levels for these methods observed in Bangkok were perhaps a function of the greater availability of methods in the urban center of Thailand. The central region also had a higher proportion of ever-married

women who used sterilization, again possibly explained by the proximity to the medical services of Bangkok. Interestingly, ever married

women in Bangkok were more likely to have had experience with traditional methods (second only to the South).

TABLE 5.1 : PERCENT OF EVER-MARRIED WOMEN AGED 15-49 WHO HAD EVER USED SPECIFIC CONTRACEPTION BY METHOD, 1975 TO 1981

Method	SOFT ¹ 1975	CPS1 ² 1978	CPS2 1981
Any Method	45	69	76
Pill	26	47	51
Condom	4	10	11
Vaginal Methods	1	2	2
Injectables	5	12	18
IUD	9	10	12
Female Sterilization	6	13	18
Male Sterilization	2	4	4
Abortion	NA	3	2
Rhythm	NA	8	10
Withdrawal	NA	8	7
Other	NA	1	1

Source : ¹ SOFT - Institute of Population Studies and National Statistical Office, 1977. *The Survey of Fertility in Thailand, Vol. 1, Bangkok: National Statistical Office, Table 49, p. 79.*

² Suvanajata, T. And P. Kamnuansilpa, 1979. *Thailand Contraceptive Prevalence Survey: Country Report 1979. National Institute of Development Administration, Ministry of Public Health and Westinghouse Health Systems, Bangkok.*

TABLE 5.2 : PERCENT OF EVER-MARRIED WOMEN AGED 15-49 WHO EVER USED SPECIFIC CONTRACEPTION BY METHOD AND REGION.

Method	Bangkok	North	North-east	Central	South
Any method (N)	85.1 (765)	80.4 (1,265)	71.7 (2,403)	82.0 (1,736)	59.3 (869)
Pill	58.3	62.5	45.6	58.4	28.8
Condom	29.8	7.8	8.3	10.2	8.2
Vaginal	2.5	0.6	1.9	2.1	1.8
Injectables	12.3	24.9	10.7	22.9	12.0
IUD	12.4	8.9	16.8	12.4	4.8
Female sterilization	24.7	18.7	16.3	20.9	11.4
Male sterilization	4.7	1.9	3.6	6.4	4.4
Abortion	2.0	4.7	2.3	1.3	0.8
Rhythm	20.9	6.0	8.1	11.0	12.2
Withdrawal	11.6	5.2	4.6	5.2	17.7
Other	0.0	0.2	0.6	0.3	4.5

Age Patterns of Ever-Use

CPS results indicate the likelihood that contraceptive use varies according to age. The data in Table 5.3 show that the proportion of women who have ever used contraception increases from 51.2 percent at the age of 15-19 to as high as 83.1 percent at the ages of 35-39. At the ages of 40-44, the proportion of women who have ever used contraception declines by almost 8 percent and by as much as nearly 31 percent after age 44.

Women in Bangkok also had a similar pattern of contraceptive use by age. The only difference was that women in Bangkok seemed to have ever used contraception at a relatively younger age than women in other regions. Women in the provincial urban areas also demonstrated

a high proportion of contraceptive users at young age than their rural counterparts. Women in rural areas were less likely to have ever practiced contraception, and they also tended to start contraceptive use at a later age than their urban counterparts.

In general, data in Table 5.3 show that younger and older ever-married women were less likely than those in the 20-44 age groups to have had experience with contraception. The obvious reason for this is that younger women were more likely to have not achieved desired family-size. On the other hand, women in the older age groups were more likely to be sub-fecund or infecund and therefore less in need of contraception. As a result, the relationship between contraceptive use and age was a curvilinear one.

TABLE 5.3 : PERCENT OF EVER-MARRIED WOMEN WHO HAD EVER USED OF CONTRACEPTION BY AGE AND RURAL-URBAN RESIDENCE.

Age	Whole Kingdom	Bangkok	Provincial Urban	Rural
15-19	51.2	75.0	68.4	48.0
20-24	71.8	80.8	81.6	70.1
25-29	82.6	86.6	83.2	82.0
30-34	83.2	89.0	92.0	81.6
35-39	83.1	91.0	83.8	81.9
40-44	75.3	81.3	86.4	73.8
45-49	52.6	74.1	63.0	49.7
Total	75.7	85.1	82.4	73.9
Total Standardized*	74.8	84.0	81.9	73.2

* Standardized directly for age, using ever-married women in 1970 census as standard population.

Number of Methods Ever Used

It is suspected that women who have used contraception do not have equal experiences with different methods. In order to investigate the differences in the number of methods ever used, CPS analysed the average number of modern contraceptive ever used by age, region and rural-urban residence. Table 5.4 shows a

consistent pattern of age and number of methods used, similar to the pattern of age and use in Table 5.3. The number of methods used has a curvilinear relationship with age. For the country as a whole, the mean number of methods used increases from 0.59 at the ages of 15-19 to as high as 1.44 at the ages of 30-34. After that the mean declines steadily to 0.71 for the ages 45 and over. This pattern is consistent,

TABLE 5.4 : AVERAGE NUMBER OF MODERN CONTRACEPTIVE METHODS EVER USED BY EVER-MARRIED WOMEN AGED 15-49 BY AGE AND REGION AND RURAL-URBAN RESIDENCE.

Age	Whole	Rural-Urban Residence			Region			
	Kingdom	Bangkok	Provincial Urban	Rural	North	North Central east	South	South
15-19	0.59	0.80	0.74	0.56	0.61	0.49	0.88	0.23
20-24	1.01	1.20	1.32	0.96	1.27	0.86	1.13	0.61
25-29	1.33	1.45	1.55	1.30	1.60	1.27	1.39	0.81
30-34	1.44	1.68	1.85	1.37	1.58	1.34	1.62	0.92
35-39	1.37	1.71	1.50	1.30	1.37	1.28	1.59	0.83
40-44	1.13	1.40	1.41	1.07	1.08	1.10	1.35	0.66
45-49	0.71	1.10	0.93	0.65	0.65	0.61	0.89	0.45
Total	1.18 (7,038)	1.47 (765)	1.44 (450)	1.23 (5,823)	1.30 (1,265)	1.08 (2,403)	1.34 (1,736)	0.72 (869)

regardless of classification by urban-rural residence or region.

Women in Bangkok (1.47) and those in the provincial urban areas (1.44) had experience with more methods of contraception than those in the rural areas (1.23). In terms of region, women in the Central (1.34) have ever used more methods of contraception than those in other regions. The difference between number of methods ever used between the Central and the North (1.30), however, were not significant. Women in the South had the least experience with contraception. On an average, a Southerner tried only 0.72 method -- about 0.36 less than the Northeasterner. Despite all these variations in number of methods ever used, it can be said that Thai women have had a broad experience with contraception. On average, Thai women have tried more than one method for preventing a birth, and the average number of methods ever used could be even higher if traditional methods were included.

CURRENT USE OF CONTRACEPTIVE

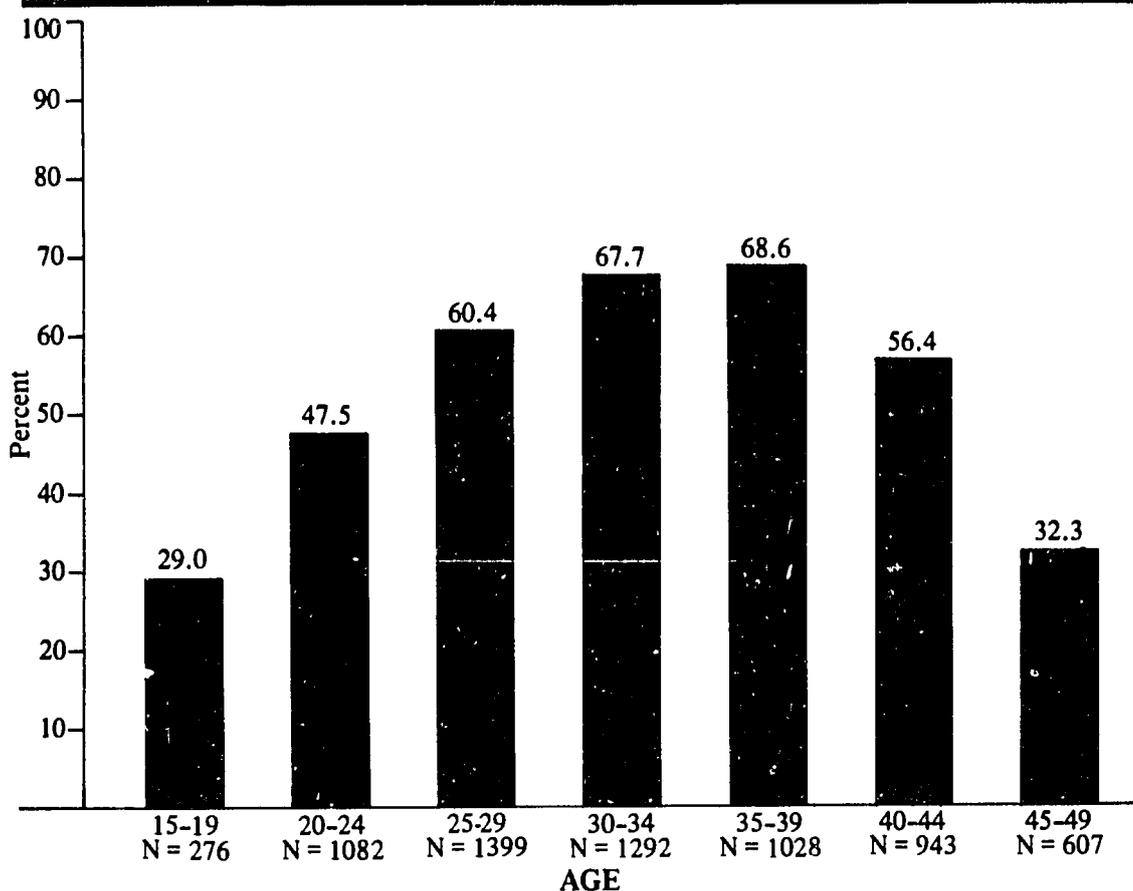
The CPS2 found contraceptive prevalence levels to be very high in Thailand.

Almost 56 percent of currently married women aged 15-49 were practicing contraception at the time of the survey. When age consideration was restricted to ages 15-44, the prevalence rate was at 59 percent. Almost all of the current users (95 percent) were employing a modern method.

Age Pattern of Current Use

The relationship between age and the current use of contraception can be seen in Figure 5.1. Age and current use demonstrate the same curvilinear relationship observed between age and ever use. The likelihood that a woman would be using a method of contraception increased for every subsequent age group through the age group 35-39 years, and other declined. Women who were 15-19 years of age were least likely to use contraception (29 percent). At the ages of 20-24, the percentage of women who were currently using was 47.5 percent. At the ages of 25-29, the level of use rose to 60.4 percent. After that the increment of current users became smaller, and reached the asymptote at ages 35-29.

FIGURE 5.1 : PERCENT OF CURRENTLY MARRIED PRACTICING CONTRACEPTION BY AGE.



Regional Variation in Current Use

The CPS2 showed that there were substantial regional differences in the percentage of women practicing contraception in Thailand. Not surprisingly, the levels of use among currently married women aged 15-49 were higher in the Bangkok Metropolitan Area (64.3%) than in the other regions (North-62.5%) (Central-62.1%) (Northeast-52.2%) (South-41.2%). When consideration was limited to currently married women aged 15-44, the levels of use were, however, slightly higher in the North (65.8 percent) than in the Bangkok Metropolitan Area. The differentials in levels of use were consistent both before and after standardization

Table 5.5 shows that there was also variation in the levels of current use of contracep-

tion by age and region. Women in the North were more likely to use contraception at the younger ages than women in other regions. In fact, the proportion of currently married women aged 20-34 who were practicing contraception in the North was the highest in the country - even higher than that of Bangkok. The results suggest that women in the North were more likely to use contraception to space births, in addition to using it to limit births, than those women in other regions.

Table 5.5 also shows the variation in the level of current use by urban-rural residence. As would be expected, women in the rural areas were less likely to be practicing contraception than women in the urban areas. However, it is interesting that, both before and after standardization, the levels of current contraceptive use in the provincial urban areas were as high as that of Bangkok.

TABLE 5.5 : PERCENT OF CURRENTLY MARRIED WOMEN AGED 15-49 PRACTICING CONTRACEPTIVE METHODS BY AGE AND REGION

Age	Whole Kingdom	Urban/Rural Residence			Region			
		Bangkok	Pro-Vincial Urban	Rural	North	North-east	Central	South
15-19	29.0	44.4	38.9	27.1	40.0	19.4	39.7	12.5
20-24	47.5	50.5	60.8	46.1	62.2	40.0	49.5	36.3
25-29	60.4	58.2	60.2	60.8	74.4	57.8	64.1	38.3
30-34	67.7	69.4	73.8	67.0	73.8	65.3	75.7	48.8
35-39	68.6	78.4	71.9	66.9	70.5	65.3	73.3	55.8
40-44	56.4	72.3	66.7	53.7	48.0	55.2	63.9	44.4
45-49	32.3	52.0	51.2	28.9	29.4	28.0	40.4	20.3
Total 15-44	59.0	65.2	65.1	57.7	65.8	54.8	64.3	43.4
Total 15-49	56.5	64.3	63.8	55.0	62.5	52.2	62.1	41.2
Total 15-44*	58.2	64.0	64.7	57.1	64.9	54.3	63.8	42.4
Total 15-49*	55.7	62.8	63.4	54.3	61.5	51.8	61.5	40.2

**The results have been standardized by direct method using the age distribution of currently married women from the 1970 census for the whole kingdom as a standard.*

Differentials in Use by Socio-Economic Status

Variation in proportion of currently married women who were practicing contraception are examined by socio-economic status in Table 5.6. A Clear pattern of association between contraceptive use and level of educational attainment is apparent. Women who were better educated were more likely to adopt a method of fertility regulation. Women who had no formal education were least likely to practice family planning (49%). Nearly 53 percent of women who finished less than three years of school were practicing some method of contraception, compared to 57 percent for those who finished four years of school, and 61 percent for those who had more than 4 years of education. However, inverse relationship between contraceptive use and education was not consistent in every age group. Only three age groups, namely

15-19, 20-24 and 35-39 show a consistent and regular relationship.

In terms of differentials in use by occupation, the data show that women who were professionals had the highest proportion (68%) who were practicing contraception. Sales/business (61%) and skill/semi-skill (62%) also had a higher proportion of contraceptive users than the other occupational groups. The differences in levels of current use among other occupational groups were small.

Analysis of current users by work status found that, surprisingly, those women who were not in the labor force (59%) were as likely as those who worked outside of agriculture (59%) to be practicing contraception. Women who worked in farming had the lowest proportion of contraceptive users (55%).

**TABLE 5.6 : PERCENT CURRENTLY MARRIED WOMEN AGED 15-49
CURRENTLY PRACTICING CONTRACEPTIVE METHODS BY AGE
AND SOCIO-ECONOMIC STATUS.**

Socio-economic Characteristics	Age							Total
	15-19	20-24	25-29	30-34	35-39	40-44	45-49	
Education								
No education	9.1	49.1	52.9	55.3	60.6	53.3	28.4	49.0
1 - 3 years	16.7	51.4	61.4	68.0	63.1	52.2	36.7	52.7
4 years	26.1	45.9	61.7	67.8	69.7	56.6	30.4	57.0
5 years and above	45.8	51.8	55.9	73.9	72.2	63.7	56.5	61.2
Occupation								
Agriculture	23.1	45.3	63.6	66.7	69.2	50.3	26.3	54.5
Professional	*	44.4	56.1	81.4	73.0	74.1	60.0	67.7
Sales and business	21.4	54.9	54.7	68.4	68.6	70.9	41.3	60.9
Skill and semi-skill	*	54.8	68.4	63.8	73.1	57.1	30.0	62.0
Labor-servant	38.5	61.4	57.8	64.5	57.5	50.0	28.2	55.5
Housewife	39.7	45.4	55.7	72.0	71.2	69.5	55.6	58.6
Work Status								
Not in labor force	39.7	46.1	56.1	72.0	71.4	69.5	55.6	58.8
In labor force								
Farm	23.4	45.4	63.5	67.0	69.0	50.3	26.5	54.5
Non-farm	29.6	55.0	57.3	67.1	66.5	64.5	36.6	59.4

*Less than 10 cases

Trends in Level of Contraceptive Use

In an attempt to document changes in contraceptive usage in Thailand, the results from the CPS2 are compared in Table 5.7 with the results of four previous demographic surveys: the two rounds of the National Longitudinal Study of Social, Economic and Demographic Change (LS1 and LS2), the Survey of Fertility in Thailand (SOFT), and the CPS1. Data in Table 5.7 show a striking increase in contraceptive practice in Thailand. The proportion of currently married women in the reproductive ages 15-44 who were using contraceptive increased substantially--from 15 to 59 percent--over the 12 year period covered by these surveys.

Changes in Method Mix

Much of the total increase in the prevalence of contraceptive use in Thailand between 1969 and 1981 was due to the increased adoption of two methods, the pill and female sterilization. As table 5.8 shows, by 1978, nearly

22 percent of married women aged 15-44 were using the pill, compared to only about 4 percent of married women who had been using that method at the time of the first round of the 1969 Longitudinal Survey (LS). During that period almost half of the total increase in contraceptive use can be attributed to the increased use of the pill.

Figure 5.2 clearly documents the changes in the relative percentages of users relying on specific method. The change in the proportions of users relying on female sterilization among users is particularly interesting. At the time of the first round of the LS, more users (37 percent) were relying on sterilization than on any other method. The proportions sterilized apparently decreased in 1970's perhaps in response to the greater availability of alternative methods, especially the pill. The substantial increase in the proportions using female sterilization, as measured by the CPS1 and CPS2, suggest major program initiatives for sterilization are having an impact.

TABLE 5.7 : PERCENT OF CURRENTLY MARRIED WOMEN AGED 15-44 PRACTICING CONTRACEPTION BY AGE 1969 TO 1981.

Age Group	LS1 1969-1970	LS2 1972-1973	SOFT 1975	CPS1 1978	CPS2 1981
All Ages	14.8	26.3	36.7	53.4	59.0
15-19	3.8	6.0	18.1	31.3	29.0
20-24	11.0	20.1	30.9	44.2	47.5
25-29	14.4	28.6	41.0	54.4	60.4
30-34	22.0	31.4	44.0	61.1	67.7
35-39	18.0	35.6	42.3	62.8	68.6
40-44	13.1	19.4	30.5	49.5	56.4
Total*	14.4	26.0	36.8	53.1	58.2

**The results have been standardized by direct method using the age distribution of currently married women from the 1970 census for the whole kingdom as a standard.*

TABLE 5.8 : PERCENT OF CURRENTLY MARRIED WOMEN AGED 15-44 PRACTICING CONTRACEPTION BY METHOD USED, 1969 TO 1981.

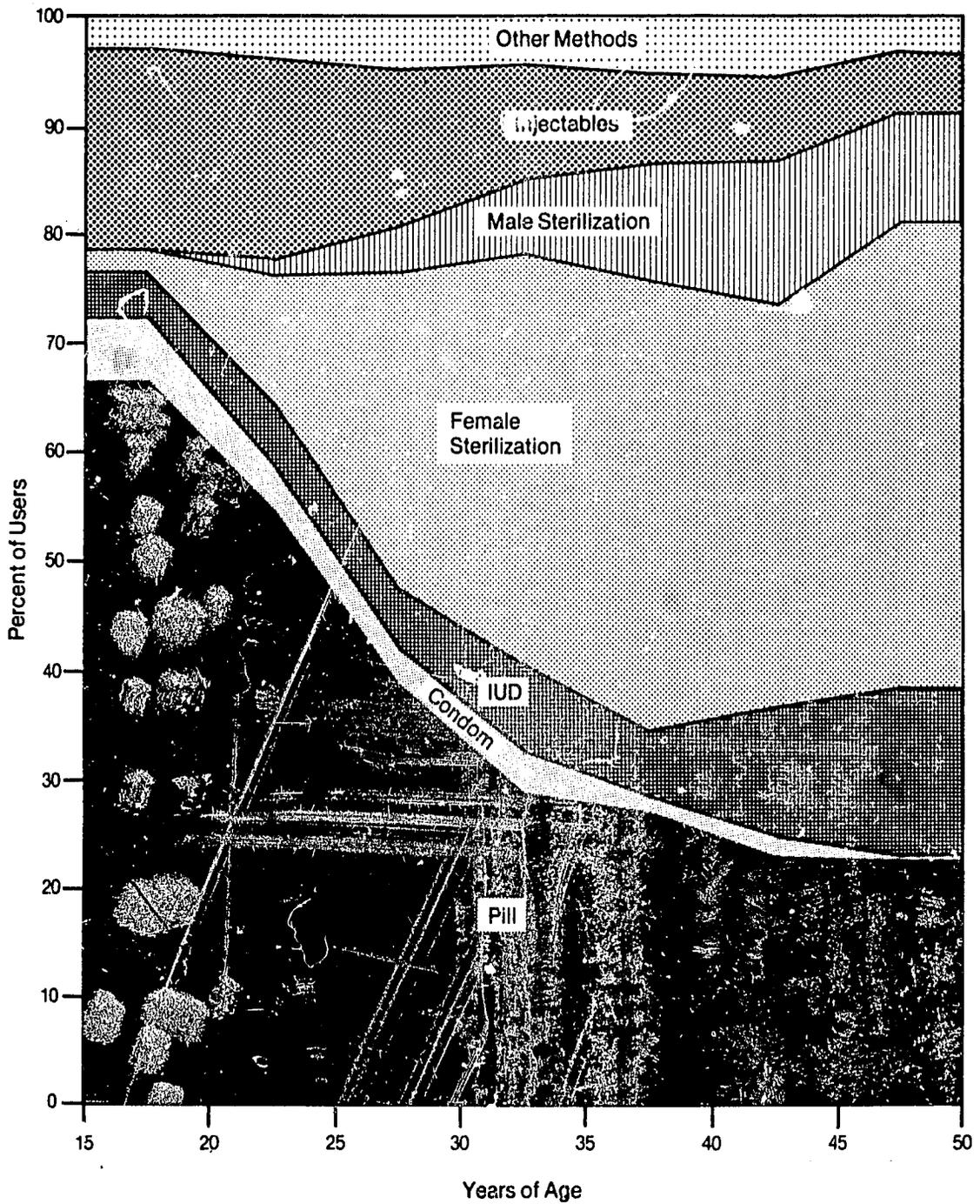
Method Being Used	LS1 1969-1970	LS2 1972-1973	SOFT 1975	CPS1 1978	CPS2 1981
Total	14.8	26.3	36.7	53.4	59.0
Pill	3.8	10.4	15.2	21.9	20.2
Female Sterilization	5.5	6.8	7.4	13.0	18.7
IUD	2.2	4.6	6.5	4.0	4.2
Injectables	0.4	0.9	2.1	4.7	7.1
Male Sterilization	2.1	2.9	2.2	3.5	4.2
Condom	0.8	0.1	0.5	2.2	1.9
Other		0.6	2.9	4.1	2.7

Figure 5.2 also shows the increase in the relative popularity of injectables. Although the increase between 1978 and 1981 was smaller than the increase in female sterilization, injectables have slowly but steadily increased in acceptance among currently married users. Accompanied by the increased adoption of female sterilization and injectables, the proportion using oral contraceptives declined slightly among current users by about 7 percent.

The IUD also experienced a relative decline in popularity, especially since the SOFT in 1975.

Vasectomy also seems to lose its popularity. Almost 30 percent of currently married users in the first round of the LS were relying either on the IUD or vasectomy as their birth control method. In the CPS1 as well as in CPS2, only 14 percent of users reported reliance on either one of these methods. In terms of absolute numbers, those couples protected by either one of the methods has increased, but the relatively greater increase in use of other methods has reduced the proportions of these two methods.

FIGURE 5.2 : DISTRIBUTION OF CURRENTLY MARRIED USERS AGED 15-49 BY AGE AND METHOD CURRENTLY USED.



^a Percentages are shown at the midpoint of each five-year age group. The reader should keep in mind that actually each interval estimate should be averaged over five years.

Age and Method Mix

The relationship between age and the specific method used by currently married users in the CPS2 is examined in Figure 5.3. There was a decline in the proportion of current users in temporary methods like the pill, condom and injectables as the ages of women advanced.

The decline was accompanied by a greater use of more permanent methods with about 38 percent of currently married users aged 25 years and older having adopted female or male sterilization. The fact that a large number of couples have adopted a permanent method indicates that many Thai couples have decided to terminate fertility.

FIGURE 5.3 : DISTRIBUTION OF CURRENTLY MARRIED WOMEN AGED 15-44 PRACTICING CONTRACEPTION. ACCORDING TO THE SPECIFIC METHOD.

other* 5%	other* 3%	other* 9%	other* 12%	Other* 8%
Inject 3%	inject 3%	Inject 6%	inject 9%	Inject 12%
IUD 15%	IUD 17%	IUD 18%	IUD 8%	IUD 7%
Male Steril 14%	Male Steril 11%	Male Steril 6%	Male Steril 6%	Male Steril 7%
Female Steril. 37%	Female Steril. 26%	Female Steril. 20%	Female Steril. 24%	Female Steril. 32%
Pill 26%	Pill 40%	Pill 41%	Pill 41%	Pill 34%
LS1 1969-70	LS2 1972-73	SOFT 1975	CPS1 1978	CPS2 1981

* Other-Includes condom, rhythm, withdrawal and folk methods.

UNMET NEED FOR FAMILY PLANNING

Previous discussions in this chapter have focused on the patterns of contraceptive usage. However, these patterns may not provide a total picture of the extent of the population

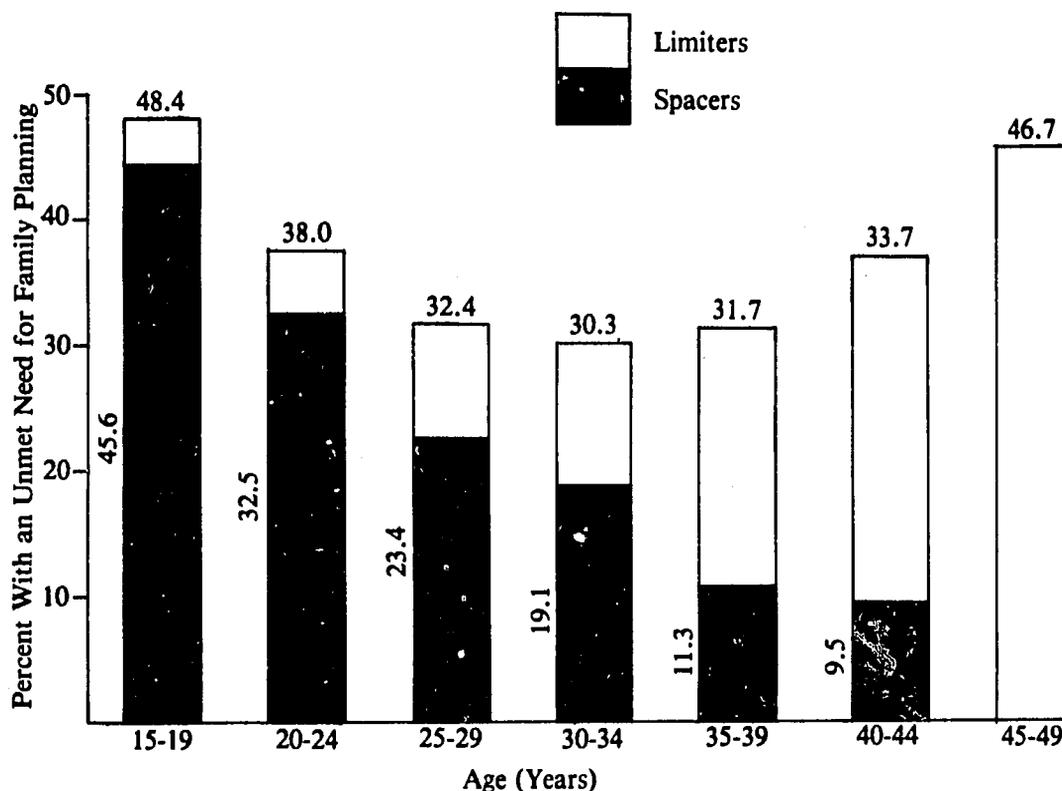
who are not using family planning to achieve fertility desires. For the remainder of this chapter discussion will focus on the proportion of various populations with an unmet need for family planning. This group can also be considered to be those at risk of an unwanted pregnancy.

Methodology

The methodology used to calculate the level of unmet need of family planning in Thailand is somewhat different from methodologies used in the past (Westoff, 1978 and Westoff and Pebley, 1981). For this reason some discussion of the procedure for calculating unmet need will be given. This methodology was first developed by Dorothy Nortman and presented in a paper by Lewis and Nortman. (Lewis and Nortman, 1981)*. The two major differences between the methodology used here and previous methodologies is that this methodology calculates the couple years of protection (CYP) required by the population, over the one year following the survey, and desired timing of next birth is incorporated into the model. The population

base considered is married women of reproductive age who are fecund. For the purpose of this analysis women who were sterilized for contraceptive reasons are considered to be fecund. From this base population women who want no more children (limiters) are considered to require one year of contraceptive protection or one couple year of protection (CYP). Women who want more children but not in the next year (spacers) will also require one CYP. Women who are seeking pregnancy will not require any CYP. The problem arises when one tries to allocate the portion of the year following the survey in which a contraceptive protection will be required by those women who are pregnant at the time of interview. To calculate the proportion of CYP consider that: those women whose point of conception occurred at -1 to -9

FIGURE 5.4 : PERCENT OF CURRENTLY MARRIED FECUND WOMEN, AGED 15-49 WITH AN UNMET NEED FOR FAMILY PLANNING BY AGE.



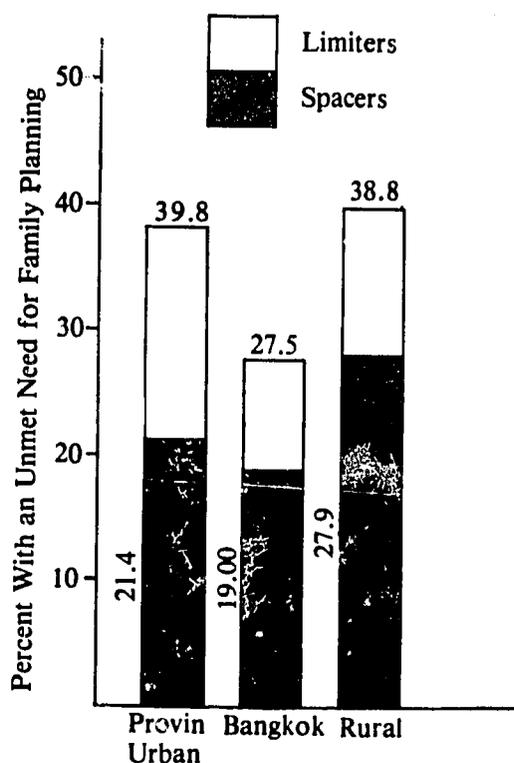
* A more detailed description of the methodology for calculating unmet need is forthcoming in a paper by D. Nortman in *International Family Family Planning Perspectives*

months from the survey date represents 2/3 of next year's mothers. For these women the average point of conception equals -5 months from the survey date. The average delivery date equals +4 months from the survey date. Assuming a 4 month period of postpartum amenorrhea, the average date of termination of postpartum amenorrhea would equal +8 months from the survey date, leaving these women exposed to the risk of pregnancy for 4 months or 1/3 of the next year. Thus the average contraceptive protection time required per woman in the group under discussion equals (2/3), (1/3) or (2/9) CYP. The results of this methodology are the couple years of protection produced by 100 women broken down by those who want to delay the next birth (spacers) and those who want no more births (limiters). For the sake of convenience the following analysis will present the CYP as percentages rather than as rates.

Unmet Need for Family Planning

The following analysis is an effort to examine some of the various sub-populations which have differential proportions of unmet need for family planning. The first population breakdowns by age are presented in Figure 5.4. The 15-19 age group has a strikingly high proportion (48%) who are at risk of an unwanted pregnancy. Most of these young women want to have additional children but would like to delay or space their next birth. The overall proportions declined until age 30-34, and then make a gradual increase until the final age group 45-49. As would be expected, the proportion of those with unmet need who are spacers declined with increases in age until in the latter age groups virtually none of the unmet need for family planning is for spacing. These latter groups may be protected from an unwanted pregnancy,

FIGURE 5.5 : PERCENT OF CURRENTLY MARRIED FECUND WOMEN, WITH AN UNMET NEED OF FAMILY PLANNING, BY URBAN-RURAL RESIDENCE

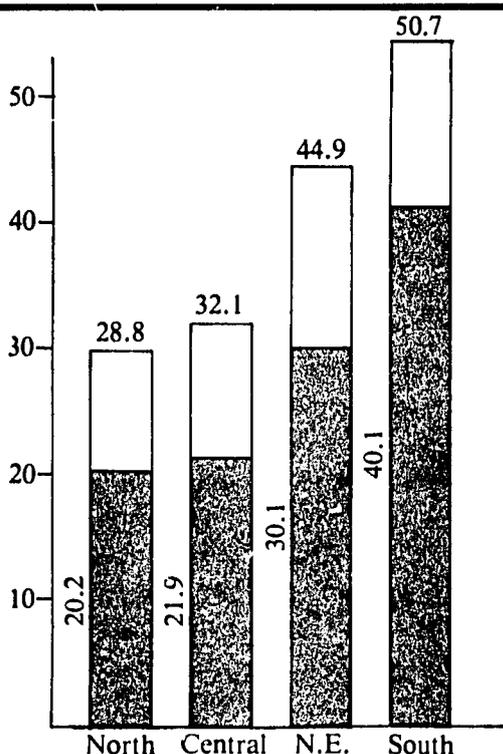


to some extent, by subfecundity or even infecundity. However, these women indicated that they were not subfecund and so they would be expected to be using some means of preventing pregnancy. If these women are fecund or subfecund, the availability of abortion to terminate an unplanned pregnancy may explain some of their failures to use methods of contraception.

In Figure 5.6 the proportion of currently married fecund women at risk of an unwanted pregnancy (unmet need) by place of residence is presented. Consistent with the discussions found in

previous sections (Fertility and Use) the geographic pattern of unmet need for family planning services is not surprising. Rural areas have the highest proportion of unmet need while Bangkok has the lowest. The need for spacing services is significant across all residential units. The South currently has the highest proportion of women at risk of an unwanted pregnancy, but the Northeast region is not far behind. The Northeast also shows a relatively greater proportion of women seeking to limit further fertility. This coincides with earlier observations on the smaller level of use of permanent methods in the Northeast.

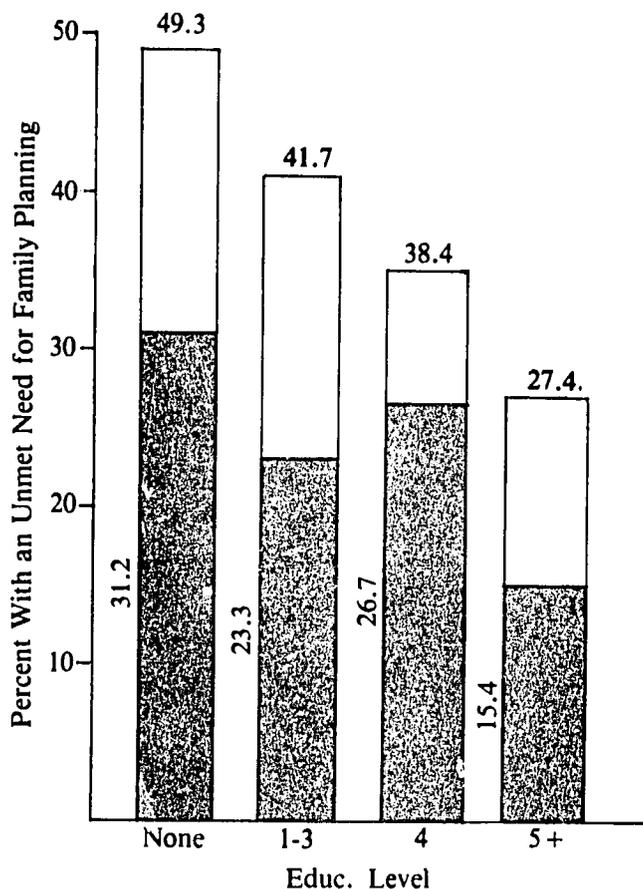
FIGURE 5.6 : PERCENT OF CURRENTLY MARRIED FECUND WOMEN, WITH AN UNMET NEED FOR FAMILY PLANNING, BY REGION.



In Figure 5.7 the level of unmet need for family planning is examined in light of the respondent's level of education. The traditional pattern of greater levels of unmet need among less educated women is observed. The propor-

tion of limiters in the lower educational groups is greater than in the two highest educational groups. This suggests that women with less education may have some constraints to using more permanent methods.

FIGURE 5.7 : PERCENT OF CURRENTLY MARRIED FECUND WOMEN WITH AN UNMET NEED FOR FAMILY PLANNING BY EDUCATIONAL STATUS.



It is clear from the preceding analysis that while the family planning efforts in Thailand have achieved incredible results both in terms of acceptance and reduced fertility, there is still a considerable amount of work to be done. Future program efforts can expect increased demand for non-permanent methods

as spacers finally begin using contraception to achieve the birth intervals they think desirable. The data on unmet need also suggest that there is still a considerable pool of potential sterilization acceptors which has not been touched by program motivational efforts.

CHAPTER 6

CONTRACEPTIVE AVAILABILITY

INTRODUCTION

Contraceptive availability is a necessary prerequisite to contraceptive use. Many national family planning programs have put considerable effort into making family planning services available. The dissemination of family planning services and supplies to achieve widespread availability has been a major thrust of family planning programs in Thailand. From the program manager's point of view, the widespread availability of family planning service is usually measured in terms of funding levels and the number of field workers in place, family planning centers, clinics and other facilities, and outlets for non-clinical methods. All of these indicators measure national program inputs, but little or no attention has been given to the perception of the existence of the services among the general population. In order to look at the demand side of the family planning program, the CPS-2 examines contraceptive availability among the general population for which the services are targeted.

Availability in this report is defined in terms of effective knowledge of a source of family planning services (i.e., whether couples have sufficient knowledge of a source to obtain contraception if they so desire) and proximity to that source, i.e., travel time, travel mode and convenience (see Lewis and Novak, 1982).

Two aspects of availability are important to understand: perceived availability and actual availability. Perceived availability involves the awareness of family planning services among the eligible couple population. It also involves the individual's perceived estimates of their access to these services. Perceived availability can be influenced by actual availability, educational and information programs, and utilization of services. Actual availability can be defined as the number and location of services and supply sources. It is often a function of deci-

sions concerning resource allocation within the public and private sectors.

Perceived availability as measured in CPS has analytical value in that it provides an operational measure of availability. While the measure has value in its own right, its utility is augmented significantly by comparative analysis with actual levels of availability. However, a problem arises when perceived availability data are analyzed without some estimate of actual levels of availability, because there is no basis against which to compare the variations in levels of perceived availability. If respondents indicate that contraceptives are not available and if there is no adequate information on actual availability, it is almost impossible to determine if knowledge levels are low because perceptions are wrong and family planning is available or because the services do not, in fact, exist. Without some understanding of the service infrastructure, it is difficult to evaluate and determine the actual (and potential) contribution of the various service providers to the provision of family planning services. However, any examination of service providers must be specific to the method provided. Clinical methods like IUD and sterilization, or abortion, can only be provided by trained health personnel while the pill and condom can be dispensed at a variety of places ranging from clinical facilities to small shops. Because of the variations in providers, recipients, and demand, each method has a different pattern of actual and perceived availability.

KNOWLEDGE OF A SOURCE

An important aspect of family planning availability is the knowledge of the sources of family planning outlets. A woman may know about a specific family planning method but that knowledge must also be accompanied by knowledge of at least a source or outlet to create

a necessary pre-condition for contraceptive use. It is not enough that a woman has heard of a specific method of family planning if she does not have the information required to acquire services or supplies, if she should want them. However, among Thai women, knowledge of specific methods and a source where the method is available is widespread.

As indicated in Table 6.1, (Table 6.2 is provided for reference) knowledge of at least a source of one effective family planning method in Thailand is close to universal. Almost 99 percent of ever-married women knew at least one source of family planning, with all women

in Bangkok knowing at least a source. In the South, the level knowledge of a source was the lowest (93.6%), but was still quite high.

Consistent with the high percentages of women who knew at least one family planning outlet, the mean number of sources of modern contraceptives known to a Thai woman was 5.5 sources. Women in Bangkok knew more sources of contraceptives (6.4) than those in other regions. Despite the high level of contraceptive use, women in the North knew the least number of sources (4.9). This may be due to a greater popularity of particular sources in the North.

TABLE 6.1 : PERCENT KNOWING A SOURCE AND MEAN NUMBER KNOWN AMONG EVER-MARRIED WOMEN, AGED 15-49 BY REGION.

Region	% Know at Least a Source	\bar{X} Number of Known Sources
Whole kingdom	98.7	5.5
Bangkok	100.0	6.4
North	98.3	4.9
Northeast	99.5	5.6
Central	99.7	5.4
South	93.6	5.1

TABLE 6.2: PERCENT KNOWING A SOURCE AND MEAN NUMBER OF KNOWN SOURCES AMONG WOMEN WHO WERE NON-CURRENT USERS, AGED 15-49 BY REGION

Region	% Know at Least A Source	\bar{X} Number of Known Sources
Whole Kingdom	97.1	5.4
Bangkok	100.0	6.4
North	95.8	4.9
Northeast	99.0	5.7
Central	99.1	6.4
South	89.7	5.1

The levels of source knowledge for each method are presented by region in Table 6.3. The percentage distribution in Table 6.3 was calculated from those women who were not current users of the specific method of contraception. Despite their status on contraceptive use, a very high proportion of women reported that they knew at least one contraceptive source. In some cases, the proportions are near universal. For example, all women in Bangkok who were non-users of the pill knew a source for the pill. In other regions, more than nine out of ten women knew a pill source. Aside from the pill, sources for three methods (female sterilization, male sterilization, and injection) were known by more than 90 percent of non-

users in every region. For the condom, only in Bangkok did more than 90 percent of the non-using women know a source. The low level of knowledge of a source for the condom in other regions may be due to its status as "male" method. Women would not buy condoms and so might not be aware of a source.

As expected, the level of source knowledge for abortion was lowest. This can be explained by the illegal status of induced abortion in Thailand, which could and probably did, heavily bias the responses. Interestingly, almost all women who knew of a source for abortion mentioned quacks or traditional abortionists as a source for the method.

TABLE 6.3: PERCENT OF NON-USERS OF THE SPECIFIC METHOD, WHO KNEW A SOURCE FOR THE METHOD BY REGION

Method	Whole Kingdom	Region				
		Bangkok	North	North-east	Central	South
Pill	97.3	100.0	97.7	99.1	97.4	90.8
Condom	75.7	92.4	67.7	79.6	66.5	78.2
IUD	98.5	99.4	86.7	97.1	86.3	79.3
Female sterilization	96.4	99.7	95.8	97.8	95.6	92.4
Male sterilization	91.5	98.7	90.7	94.3	84.7	92.2
Abortion	44.6	66.7	42.7	41.0	39.5	43.5
Injection	94.6	99.3	90.7	96.1	94.2	91.6

The actual source of contraception for women who are currently using contraception is important information because it provides insights into the nature of the actual distribution system. Table 6.4 presents the distribution of sources of contraceptive supplies among women who are using contraception by rural-urban residence and region. As can be seen in Table 6.4, for the country as a whole, as well as for each region or rural-urban classification, hospitals have been a major supplier of contraceptive services in Thailand. About 50 percent of the current users received their contraceptive services from the hospitals. In terms of regional variation, the South had the lowest

(37%) proportion of women who had gone to the hospital for contraceptive services. The Northeast had the largest (63%) proportion who had received the contraceptives from the hospital. Although not shown in this table, the role of hospitals is heavily weighted by the high proportion of users using sterilization.

Women in Bangkok (53%) and those in the provincial urban (54%) had a larger proportion that went to hospitals than those in the rural areas (49%). These results were not surprising because most hospitals are located in the urban areas.

Tambol health centers were the second

most important supplier of contraceptives, with about 18 percent for going there for contraception. As would be expected from the nature of the health program, less than one percent of women in the urban areas went to tambol health centers which are all located in rural areas.

Drugstores also served a considerable proportion of women who were in need of some

contraceptive methods. However, their contribution tends to be greater in Bangkok than in other areas. This may be because drugstores are satisfying a demand for supplies in the urban areas. The same may be true for private clinics which are operated and located almost exclusively in the urban areas and served about 7.6 percent of couples who were currently using.

TABLE 6.4: PERCENT OF CURRENT USERS USING A SPECIFIC SOURCE OF CONTRACEPTION BY RURAL-URBAN RESIDENCE AND REGION

Source	Whole Kingdom	Region				Rural-urban Residence		
		North	North east	Central	South	Bangkok	Provincial Urban	Rural
Tambol health cntr.	18.3	33.4	12.3	20.5	22.6	0.2	0.8	22.6
District health cntr.	2.7	0.8	1.5	1.7	20.1	0.2	2.7	3.0
Hospital	49.8	39.3	63.2	44.9	36.9	53.0	54.1	49.0
Clinic	7.6	7.5	4.6	10.0	8.8	8.9	11.8	7.0
Drugstore	12.2	7.2	11.3	14.1	4.7	23.3	16.5	10.1
Mobile unit	1.8	6.3	1.2	0.3	0.0	0.7	0.0	2.2
MCH center	4.6	2.8	3.6	4.8	6.2	9.1	12.9	3.2
Other	2.8	2.7	2.2	3.4	0.8	4.1	1.2	2.7
Unknown	0.2	0.0	0.1	0.4	0.0	0.5	0.0	0.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
N	3,581	748	1,120	1,001	274	438	255	2,888

In terms of public and private sector contribution to providing contraceptive services,

the data show that the government sources have served a larger proportion of population than

TABLE 6.5: PERCENT OF CURRENT USERS BY STATED SOURCE OF FAMILY PLANNING AND METHOD

	Pill		Condom		IUD		Injection		Female Ster.		Vasectomy		All methods	
	CPS 1	CPS 2	CPS 1	CPS 2	CPS 1	CPS 2	CPS 1	CPS 2	CPS 1	CPS 2	CPS 1	CPS 2	CPS 1	CPS 2
	N = 574	N = 1260	N = 57	N = 117	N = 114	N = 280	N = 123	N = 436	N = 376	N = 1214	N = 101	N = 265	N = 134	N = 2793
Government outlets	73.8	65.2	29.9	23.1	80.7	96.1	76.5	73.4	95.5	95.6	66.7	72.8	76.9	78.2
Private outlets	26.2	34.8	70.1	76.9	19.3	3.9	23.5	26.6	4.5	4.4	43.3	27.2	23.1	21.8

the private sector. About 77 percent of currently using couples were relying on the government sources (See Table 6.5). The remaining women were able to use the usually higher-cost-service of private source.

Table 6.5 also provides comparable data from the first round of the Thai CPS. There appeared to be some major shifts in the patterns of supply sources between the two surveys. Two re-supply methods (pills and condoms) have shown declines in the proportion using government sources in the period between the two surveys. Government sources increased in popularity among users of the IUD between

the two surveys. However, it should be remembered that IUDs represent a relatively small and declining proportion of current users. Sterilization both male and female showed relatively little change between the two surveys.

However, the reader is reminded that the sources for these two methods are cumulative so that the source the user referred to may have been used several years before the time of interview. With only two points, and a relatively short interval it is impossible to draw any inferences from these patterns. However, further observation and more indepth analysis of sources of contraceptive services should be carried out.

TABLE 6.6: AVERAGE TRAVEL TIME IN MINUTES BY METHOD BY REGION AMONG CURRENT USERS

Method	Whole Kingdom	Region			
		North	Central	Northeast	South
Pill	21.1	20.9	18.2	25.2	22.1
Condom	16.6	16.8	18.0	18.0	27.3
Injection	29.0	32.0	24.8	30.9	26.0
IUD	67.7	46.0	95.5	69.4	53.8
Female Ster.	62.5	55.3	66.6	70.6	86.9
Vasectomy	75.1	82.5	65.2	79.8	115.8

TABLE 6.7: AVERAGE TRAVEL TIME IN MINUTES BY METHOD BY RURAL-URBAN RESIDENCE AMONG CURRENT USERS

Method	Whole Kingdom	Residence		
		Bangkok	Provincial Urban	Rural
Pill	21.1	17.6	15.4	22.2
Condom	16.6	11.4	12.1	20.7
Injection	29.0	29.6	20.7	30.0
IUD	67.7	36.2	30.6	72.3
Female Ster.	62.5	34.4	36.9	71.2
Vasectomy	75.1	37.6	61.4	77.9

Tables 6.6 and 6.7 present data on average travel times to specific method sources by residence and region. The pattern for the country

as a whole indicates, as would be expected, the clinical methods have longer travel times than re-supply methods. This pattern is consistent

for every region and place of residence for the country. Between regions there seems to be only minimal differences in mean travel time, with the exception of the IUD users from the Central region. Of course, this number is subject to a considerable amount of sampling error because of the small number of IUD users involved. It also appears that sterilization is

relatively less available in the Northeast and the South than it is in the other regions of the country. Rural areas have somewhat longer mean travel time to source especially for clinical methods. This pattern of availability is measured by travel time, and is the one that would be expected given the nature of the service delivery program in Thailand.

CHAPTER 7

INFANT FEEDING PRACTICES

Due to the recent interest in the implication of infant feeding practices for the health of infants as well as their potentially important impact on fertility, a series of questions was added to the second Contraceptive Prevalence Survey to provide information on the prevalence and duration of breastfeeding and on the introduction of non-milk foods into the child's diet. All women who reported having had a surviving birth within the 24 months prior to interview were asked if they were currently breastfeeding or had ever breastfed their child, how long they had breastfed the child (if the child had been weaned already), whether the child had been fed any non-milk food, what the non-milk food was, and at what age the child was first given non-milk food (see Questionnaire in Appendix E).

LIFE TABLE ANALYSIS OF BREASTFEEDING

Based on the information about whether the child was ever breastfed, whether it was still being breastfed, and at what age it was weaned if it was no longer being breastfed, it is possible to use life table techniques to estimate the probability that a woman would still be breast-feeding her last born child for each successive month since its birth. In interpreting the results of this procedure, as applied to the data collected in the CPS2, it is important to keep several points in mind. Firstly, the results apply only to women whose last birth survived until the time of interview. Women whose last birth died are thus excluded. Since women whose last birth died are probably more likely not to have breastfed their child at all or to have breastfed the child for a short duration, their exclusion increased the estimated extent of breastfeeding. Less than two percent of women reporting a live birth in the two years prior to interview reported that the birth did not survive, so excluding these women from the analysis has only a slight influence. However, given the prevailing levels of infant and child mortality in Thailand,

the low percent of women reporting a non-surviving last birth suggests that there is some under-reporting of those last births which died early in life. A second point the reader should be aware of in reviewing the data is that the analysis applies to a sample of women rather than to a sample of children since the data refer only to the most recent birth within the last 24 months and not to all births that occurred within that period. Births occurring within 24 months of the survey but which were prior to the last birth are excluded. Thus while each woman who had at least one birth during the reference period is counted, not each birth is. Children born within the last two years who have already been followed by a subsequent birth are likely to have experience shorter-than-average breastfeeding, so the focus on feeding of last births only must yield lower estimates of the probability that a child is still breastfeeding at various ages than the population of all surviving births is subject to. Finally, reported ages of children at weaning are subject to some concentration (heaping) at 6, 12, 18 or 24 months since some mothers round their answers to half years. The extent of such heaping is not severe in the present case with less than one in four women who reported having weaned their last child reporting age at weaning as 6, 12, 18, or 24 months. With these qualifications in mind, the results of the life table analysis of infant feeding practices can be discussed.

Figure 7.1 graphically portrays the estimated probability of a woman still breastfeeding her last born child at successive months of age. Results are shown both for the entire sample and for the rural and urban components separately. Sharp rural-urban differences are evident with the more prolonged breastfeeding typical of rural women reflected in the high proportions of rural mothers estimated as still breastfeeding at each month since birth.

Life table results of breastfeeding are summarized in Table 7.1 by rural-urban resi-

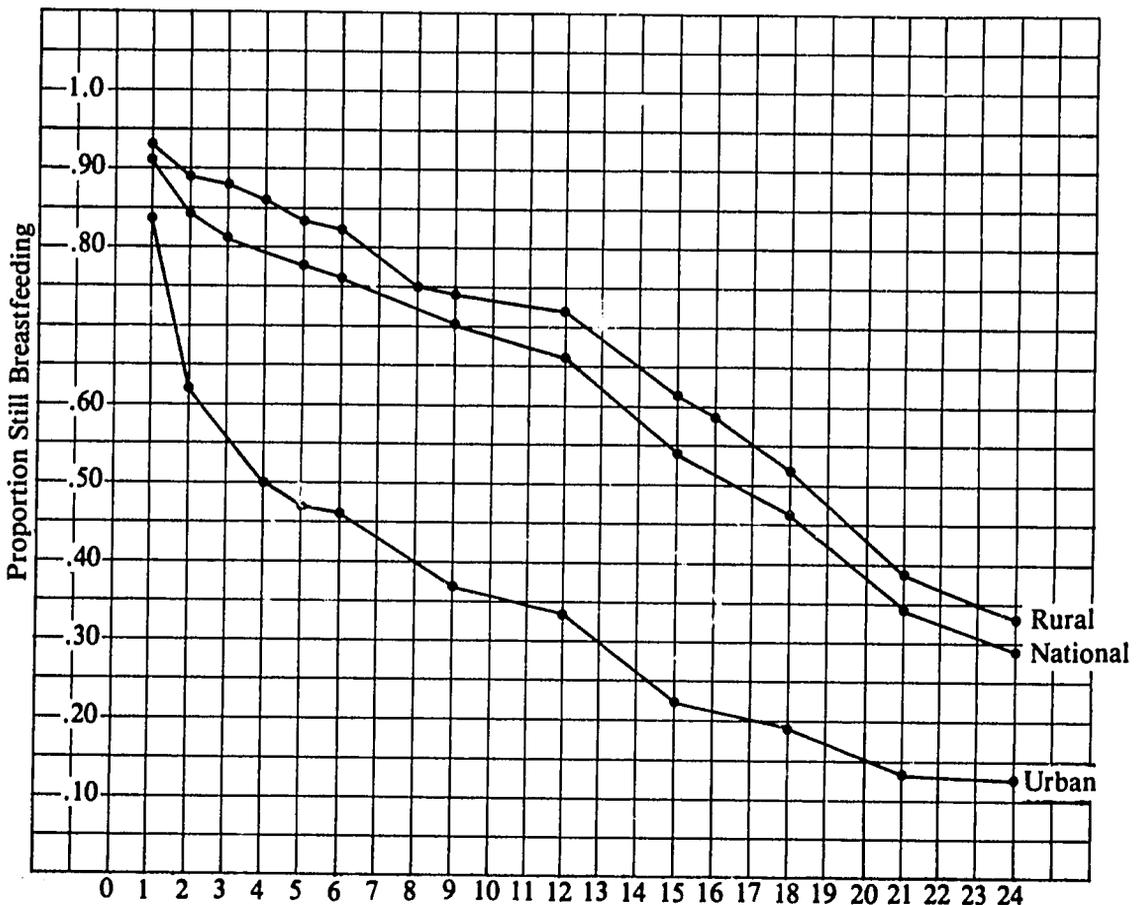
dence, region, and education of mother. The median duration of breastfeeding slightly exceeds a year and a half for rural women but is only four months for urban women. Among urban women, those in the provincial urban areas breastfeed longer than those in Bangkok. The estimated proportion who never breastfed their last child is highest among women in Bangkok and lowest among rural women. Even among Bangkok women, however more than four-fifths apparently breastfeed their children for at least a short period of time. Among rural women, less than 10 percent never breastfeed their children.

Regional differences in breastfeeding patterns are also evident. Breastfeeding is most common and of longest duration among women

residing in the Northeast region of Thailand. Women in the South of Thailand occupy an intermediate position with regard to the median duration of breastfeeding although they show a slightly higher proportion never breastfeeding than women in the North. Breastfeeding is least common and of shortest duration in the Central region although once Bangkok is excluded, the median duration of breastfeeding is only slightly lower than that for women residing in the North. Nevertheless, the results for 3, 6 and 12 months indicate clearly that women in the North are more likely to breastfeed their children throughout the first year of life than women in the Central region even after excluding Bangkok.

A woman's educational attainment is also

FIGURE 7.1 : ESTIMATED PROPORTION OF WOMEN STILL BREASTFEEDING BY MONTHS SINCE LAST BIRTH, DERIVED BY LIFE TABLE TECHNIQUES, BY RESIDENCE, FOR WOMEN WITH A SURVIVING BIRTH IN THE 24 MONTHS PRIOR TO INTERVIEW



associated with the extent of breastfeeding. In particular, better educated women breastfeed less. In both rural and urban areas, women with more than the minimal four years of education are characterized by the shortest median duration of breastfeeding. Among rural women there appears to be little difference in the breastfeeding practices of those women with exactly

four years (the typical basic elementary education) and those with less than four years of schooling, while for urban women those with four years of education are characterized by shorter durations of breastfeeding than those with less than four years. Given the small number of urban women in the sample with less than four years of schooling, the results for this group

TABLE 7.1 : MEDIAN DURATION OF BREASTFEEDING, PROPORTION WHO NEVER BREASTFED AND PROPORTION WHO BREASTFED FOR ATLEAST 3, 6, AND 12 MONTHS, DERIVED BY LIFE TABLE TECHNIQUES, BY RURAL-URBAN RESIDENCE, BY REGION, AND BY RURAL-URBAN RESIDENCE AND YEARS OF SCHOOLING, FOR WOMEN WITH SURVIVING BIRTH IN THE 24 MONTHS PRIOR TO INTERVIEW

	Median Duration (months)	Proportion Never Breastfeeding	Proportion Breastfeeding at Least		
			3 Months	6 Months	12 Months
National	16.5	.091	.819	.756	.660
Rural-Urban Residence					
Rural	18.5	.075	.875	.824	.732
Urban	4.0	.167	.565	.451	.338
Provincial Urban	7.7	.128	.631	.540	.434
Bangkok	3.3	.187	.520	.392	.275
Region					
Central					
Including Bangkok	10.6	.136	.697	.586	.481
Excluding Bangkok	13.0	.113	.775	.673	.574
Northeast	23.2	.050	.905	.880	.823
North	13.9	.063	.918	.891	.674
South	18.4	.111	.801	.726	.689
Residence and Schooling					
Rural					
Less than 4	18.1	.097	.859	.809	.735
4	18.7	.068	.894	.850	.760
5 or More	12.4	.098	.755	.650	.520
Urban					
Less than 4	(12.5)	(.200)	(.679)	(.616)	(.547)
4	8.5	.136	.647	.545	.452
5 or More	2.5	.186	.454	.314	.171

Notes: Results in parentheses are based on fewer than 50 cases.

TABLE 7.2: MEDIAN DURATION OF "FULL BREASTFEEDING" AND PROPORTION WHO "FULL BREASTFED" AT LEAST 1, 3, 6 AND 12 MONTHS, DERIVED BY LIFE TABLE TECHNIQUES, BY RESIDENCE AND EDUCATION, FOR WOMEN WITH A SURVIVING BIRTH IN THE 24 MONTHS PRIOR TO INTERVIEW WHO START BREASTFEEDING

	Median Duration (Months)	Proportion Full Breastfeeding at Least				
		1 Month	2 Months	3 Months	6 Months	12 Months
National Residence	2.1	.732	.514	.421	.165	.066
Rural	2.0	.695	.498	.416	.177	.073
Urban	2.6	.920	.595	.441	.102	.029
Years of schooling						
Less than 4	2.9	.769	.582	.488	.227	.091
4	2.0	.690	.490	.410	.172	.072
5 or more	2.4	.902	.568	.415	.069	.009

Notes: "Full breastfeeding" was defined as not having fed the child a non-milk product.

can be treated only as suggestive at best.

FULL BREASTFEEDING AND SUPPLEMENTAL FOODS

CPS2 is the first national sample survey to collect information about the prevalence of supplemental feeding and the age at which it is first introduced. These data have been used to estimate the extent of full breastfeeding by applying life table techniques to them. A minor problem is created for this analysis by the fact that the question on supplemental feeding referred only to non-milk foods and thus does not indicate if and when a mother fed milk products other than breast milk to her child. The result is that the analysis presented here may slightly overestimate the extent of full breastfeeding. Only women who start breastfeeding are treated in this analysis and thus the results refer to the extent of full breastfeeding among women who ever breastfed their children. These women were assumed to have stopped fully breastfeeding their children either at age of the child at which they introduced non-milk supplemental food or the age at which they indicated they ceased breastfeeding, whichever came first. If

a women supplemented her breastfeeding with infant formula or some other milk product prior to introducing non-milk foods into the child's diet, the duration of her full breastfeeding would be overstated.

Results are summarized in Table 7.2. To underscore the peculiar definition of full breastfeeding we are utilizing in this analysis, the term has been placed in quotation marks in the table title. The most striking feature of the findings is the very short duration of full breastfeeding that they indicate despite the possibility that these estimates may overstate its extent.

Apparently limiting the question to non-milk foods has led to only a very minor bias in the analysis. Clearly women who breastfeed their children in Thailand introduced non-milk foods very early into the diet. This is true both of rural and urban women. Indeed, a somewhat lower proportion of rural women who breastfeed their children are estimated as still fully breastfeeding by one month. By six months, however, urban women are somewhat less likely to be fully breastfeeding their children than rural women although only a small proportion of either group have yet to feed their child some

non-milk food by that age. Likewise, there are only moderate differences apparent in the extent of full breastfeeding among different educational groups.

The types of non-milk food first fed to children are indicated in Table 7.3. Clearly the most common food given to infants other than milk is rice, generally mixed with some other food. A particularly common combination is rice and bananas. The coding of the questionnaire does not permit distinguishing rice alone from rice mixed with other food, but the raw data indicate that rice alone would be very rare.

Rural-urban differences in the type of non-milk food first fed to infants are not large although some contrasts are evident. While the substantial majority of both rural and urban mothers provide rice or rice mixtures as the first supplemental food, the prevalence is even greater in rural areas where over four out of five mothers are in this category. The banana-rice mixture is also more common in rural areas.

More than two-thirds of urban mothers, however, also provide rice or rice mixtures as the first supplemental food. Baby food and fruits other than bananas are noticeably more common as the first supplemental non-milk food for urban mothers than for rural mothers. Presumably the greater availability of baby foods in urban areas and the higher incomes of urban mothers contribute to the greater popularity of baby food as the first supplemental non-milk food for urban mothers.

Some differences in the type of supplemental non-milk food are evident by mother's education. The majority of mothers in all three educational categories provide rice or rice mixtures as the first supplemental food although this is noticeably less so for women with five or more years of schooling. Almost no difference exists for mothers with less than four or exactly four years of schooling. Perhaps most striking is the substantially large proportion of mothers in the higher educational group

TABLE 7.3 : TYPE OF NON-MILK FOOD FIRST FED TO MOST RECENTLY BORN CHILD OF EVER-MARRIED WOMEN AGED 15-49 WITH SURVIVING BIRTH IN THE 24 MONTHS PRIOR TO INTERVIEW, BY RESIDENCE AND EDUCATION

	Whole Kingdom	Rural	Urban	Years of Schooling*		
				0-4	4	5+
Rice, alone or mixed						
with other foods	78.9	81.2	69.2	82.9	82.0	62.6
with bananas	26.9	28.7	18.9	33.8	27.3	20.0
with eggs	3.8	3.9	3.2	3.2	3.7	4.6
alone or other mix	48.3	48.5	47.1	45.9	51.1	38.0
Bananas alone	6.7	7.0	5.8	4.5	7.0	7.2
Other fruit alone	1.7	0.6	6.7	0.5	0.8	6.6
Baby food	10.6	9.3	16.6	8.6	8.5	21.6
Other	1.9	2.0	1.7	3.6	1.7	2.0
Total percent	100	100	100	100	100	100
Total N	1,852	1,508	344	222	1,324	305

Notes: Results exclude the 17 percent of women with a surviving birth in the last 24 months prior to interview who had not yet fed non-milk food to their child.

* Excludes one woman with a non-formal education.

that provide baby food to their children as the first supplemental non-milk food compared to mothers in the lower two educational categories. Again this probably reflects in part the higher income of better educated women. These women are also more likely to provide fruit other than bananas as the first supplementary non-milk food, although, even for better educated women, only a small percentage report doing so. Undoubtedly there is some overlap between educational and rural-urban differen-

tials in providing supplemental food since better educated women tend to be more concentrated in urban areas. The most striking features about Thai infant feeding practices with regard to supplemental feeding are the very early age at which mothers provide their infants with non-milk food and the overwhelming dominance of rice mixtures as the first type of supplemental food provided. These features cut across the rural-urban division of Thai society.

CHAPTER 8

CONCLUSION, DISCUSSION AND POPULATION POLICY ISSUES

CONCLUSION AND DISCUSSION

The Thailand National Contraceptive Prevalence Survey Round 2 (CPS2) was conducted by the Research Center, NIDA. Field work for this survey took place between late March and early June of 1981. A sample of 7,038 ever-married women were interviewed. The sampling procedures employed in CPS2 were designed to yield a self-weighting nationally and regionally representative sample. A total of 25 provinces, including the Bangkok Metropolitan Area, was selected. In those areas outside of Bangkok a total sample of 48 districts, 96 subdistricts and 192 villages was obtained.

A total of 5,823 respondents was selected in the rural portion. In the urban portion, 450 and 765 respondents were respectively selected from provincial urban centers and Bangkok.

It is generally accepted that rapid population growth has an adverse effect on the national development. A high population growth rate lowers per capita living standards, absorbs large amounts of resources needed for development and intensifies unemployment and underemployment. As the interest of Thailand is to reduce the rate of population growth, CPS views data on fertility to be very important and can be useful to officials in charge of population policy and family planning program implementation.

The CPS2 has collected information on fertility and several measures of current fertility are available from data collected in CPS2. Based on a question about the month and year of last birth, it is possible to estimate the marital fertility of women in the year prior to the survey and to calculate age-specific fertility rates. The results from the survey show that in 1981 there were about 179 births per 1,000 currently married

women in the whole kingdom of Thailand. An examination of the fertility level by region shows variation in the fertility rate. In CPS2, fertility was highest in the Northeast (193.5 per 1,000) and was lowest in the North (141.1 per 1,000).

In order to summarize the current level of fertility, the total fertility rate was also calculated. The total fertility rate for 1981 was 3.9—a figure which is a nominal (0.1 point) higher level than the first round of CPS. While sampling fluctuation may account for part of the difference between the two surveys, it is suspected that a difference in the question which provided the basic data for calculating marital fertility may also have played a role.

While total fertility rates did not show a decline in fertility between the slightly more than two-year period intervening between CPS1 and CPS2, there is some evidence that suggests Thailand is in the midst of a decline in fertility. By comparing the data on the average number of children ever-born from various sources, the data indicate that there is a steady decrease in the average number of children ever-born, especially among those women who were older than 25 years. The proportion pregnant declined from just over 10 to just over 9 percent of women while the number of months since last birth increased slightly from 49 months in 1978 to 51 months in 1981. This, at least, suggests that Thailand is continuing to be in the midst of a fertility decline.

Although the CPS questionnaire was not designed with the objective of collecting data on mortality, it is possible to indirectly estimate infant mortality rates from the information on the number of children ever born and the number of living children. By comparing the data from the CPS1 with the CPS2 there appears to be a decline in infant mortality, steepest in the rural areas. The results here indicate that the efforts by the Ministry of Public Health to

reduce infant and child mortality appears to be having some success. These efforts should be maintained or even increased if further declines in infant and child mortality are to be achieved.

One of the objectives of the Contraceptive prevalence Survey is to determine the proportion of the female population in reproductive ages who are aware of family planning. Data from both CPS1 and CPS2 indicate that levels of knowledge of various contraceptive methods are close to universal. This suggests that programs which strive to increase levels of knowledge are going to naturally result in minimal returns to the program. Future programs should be directed towards improving the quality of knowledge, especially the comparative effectiveness of each method. This would help the married couples in the decision to choose the method suitable to the individual needs.

Because of the high levels of knowledge of contraception, differential analysis of knowledge is less useful. In terms of contraceptive knowledge, rural areas are not remarkably below the levels found in urban areas, suggesting that rural areas do not need specially targeted programs, but could benefit from greater availability of services and motivational programs.

Results from the analyses indicated that the trend toward rising contraceptive prevalence in Thailand documented in earlier surveys continued during the slightly more than two-year period between the CPS1 and CPS2. By 1981, almost four out of five currently married women aged 15-44 reported ever having used some form of contraception at the time of the survey. For the Kingdom as a whole, current contraceptive use increased by approximately 5 percentage points between the two contraceptive prevalence surveys. Among rural women the increase was almost 6 percentage points, contributing further to the narrowing of the rural-urban gap in contraceptive prevalence. Current usage rates increased for every region. It is particularly interesting to note that the increase in contraceptive prevalence was larger than average in the

Southern Region which had been lagging behind the other three regions. Although the South is still distinctly characterized by the lowest prevalence of the four regions, the gap has narrowed.

Women in the Northern and Central Regions were still characterized by the highest prevalence rates in both surveys. The Central Region excluding Bangkok registered the smallest increase, perhaps signaling the start of a leveling off of contraceptive prevalence at a relatively high rate in the near future. Likewise, rates among Northern women are also quite high and may be expected to show some leveling off before long.

While the contraceptive prevalence in the Northeast is lower than that found in the North or Central regions, the rate of 54 percent is also quite high on an absolute scale. The proportional increases in contraceptive use in recent years which have been greatest in the Northeast and the South suggest that program efforts will shortly achieve a more balanced use of family planning in Thailand.

Perhaps the most striking feature of contraceptive prevalence in Thailand is the small differentials in usage by socio-economic characteristics. Women of all educational and occupational groups are adopting a method of contraception.

CPS2 also examines data on contraceptive prevalence by method. As has been indicated by several previous surveys, the pill remains the most common method of contraception in Thailand. Approximately one-third of current users indicated that the method they relied on was the birth control pill. Undoubtedly this reflects the widespread availability of the pill not only through commercial channels but through a wide network of outlets of the public health system. Thailand has been one of the countries that has pioneered in the distribution of contraceptive pills through paramedical personnel, including nurses and midwives who run the local midwifery and health centers. Ne-

vertheless, pill use declined slightly between the two contraceptive prevalence surveys while both female sterilization and the injectable showed substantial increases, particularly female sterilization. These results most likely reflect the increased emphasis on sterilization in National Family Planning Program as well as the introduction of injectables into that program over the past few years in recent years.

Data from the two Contraceptive Prevalence Surveys are useful in providing an independent assessment of the availability and accessibility of family planning services. As can be seen from both CPS1 and CPS2, the large majority of current users indicate a government source as the provider of their method of contraception. In both rounds more than three out of four women indicated they obtained their method from a government outlet. Thus, it is evident that the Government's National Family Planning Program has played an important role as a provider of contraception.

In terms of travel time, the pattern for the country as a whole shows that, as would be expected, the clinical method have longer travel times than re-supply methods. This pattern is consistent for every region and place of residence for the country. Rural areas have a somewhat longer travel time especially for clinical methods.

Due to the recent interest in the implications of infant feeding practices for the health of infants as well as their potentially important impact on fertility, a series of questions was added to the CPS2 to provide information on the prevalence and duration of breastfeeding and on the introduction of non-milk foods into the child's diet. The data indicate clear rural-urban differences in proportions still breastfeeding at each month since birth. Rural women were more likely to breastfeed their children than their urban counterparts. In addition, rural women tended to breastfeed their children for longer periods. Regional differences in breastfeeding patterns are also evident in CPS2. Breastfeeding is most common and of longest duration among women residing in the Northeast

region of Thailand. Only 5 percent of Northeastern women are estimated to have not breastfeed their child and over four-fifths breastfeed for at least a year. Thus it is somewhat ironic that the Ministry of Public Health recently targeted this region for a campaign to promote breastfeeding. Based on the results from the CPS, the Ministry should target the Central region for a campaign to promote breastfeeding. According to CPS2 data, breastfeeding is least common and of shortest duration in the Central region, even after Bangkok is excluded.

POPULATION POLICY ISSUES

There is convincing evidence that Thailand is in a period of demographic transition. Fertility in Thailand has declined by about 40 percent between the period of 1964 to 1981. Different regions of Thailand, however, do not experience the same pace of decline. At present, there are fairly significant regional variations in fertility. Fertility rates are now still high in the Northeast and the South. The high levels of fertility in the two regions appear to be more the result of family size norms than any demographic or other factor which influences fertility. The South in particular showed a clear norm for large family size. In spite of the highest level of fertility, the South still shows the highest proportion (41%) of women who wanted more children. In addition, mean number of children expected for currently married women who either want or do not want any more children is largest in the South. If there are to be significant declines in the Northeast, and especially in the South, efforts will have to be made to modify family size desires. The most important single policy for the success of the Thai population control program, therefore, is to keep the number of desired children down to no more than two per family.

In order to keep the desired family size down, it may be in the interest of population policy planners to look at factors that are conducive to high fertility. The first area that may be examined is the economic utility of children. Previous studies have found that children were

perceived to be particularly useful, i.e., productive, especially in agricultural communities where farms are large but mechanization is low and educational opportunities are limited or lacking altogether (see e.g. Kamnuansilpa, 1981; Buripakdi, 1977; Arnold and Pejaranonda, 1977). In this situation, Arnold and Pejaranonda (1977) suggested that government policies could accelerate the decline in fertility by designing and implementing strong anti-child labor laws and increasing educational opportunities. Both of these policies would make children less beneficial for farm labor and would make children less available to help. In addition, a policy which emphasizes educational opportunity is commensurate with the prevailing norm that one should raise the "quality" of children. One way of achieving better "quality" children is to educate children longer and better. This of course would mean that a smaller number of children per family would be more compatible with the higher costs entailed in raising "quality" children. Programs which emphasize quality rather than quantity, may be important in their own right. At the very least they serve as a means to lower the desired family size. Further, higher levels of education, and presumably better quality, tend to expose children to urban ideas and philosophy which could lead to lower fertility when they reach child-bearing age. This conclusion is substantiated by the findings from CPS2 that women of higher levels of education have a lower level of desired family size.

Programs of this nature may not bear fruit within a short period of time. We may not see any appreciable change in the fertility rate within, say, five years if we were to rely on programs of educational development alone. At least for the time being, more initiatives in program inputs for the family planning program are needed. A more aggressive and comprehensive outreach program is suggested. An outreach team may want to try to influence the desire for large family size through home visit, population education sessions. The purpose of the sessions would be to help the married couples achieve and realize the need for quality children, thus reducing the number of births.

Helping married couples to realize their demographic needs should eventually increase the number of contraceptive users. Also some couples may want to space births without thoughts of limitation. There is some evidence from the CPS2 that the majority of Thai women are using contraceptives primarily to terminate fertility, and by the time they use it they may already have more children than they actually wanted. Therefore programs which encourage spacing might have an important impact on fertility of Thai women.

Because both CPS1 and CPS2 have shown that knowledge of contraception per se is virtually universal, the need now is to direct information activities toward helping couples to make an informed selection among a range of contraceptive options. Thus, perhaps a promotional brochure is needed which focuses on several methods and the appropriate user groups rather than method-specific brochures.

The National Family Planning Program should encourage the use of more effective methods. This would have an appreciable impact on fertility. Regional examination shows that women in the South, in particular, are more likely to use traditional and less effective methods than women in other regions. Improving the use-efficacy in this region alone may have a great impact on the fertility levels of the region and of the country as a whole. Further, an examination of the age and parity structure of users suggests that many users have terminated their child bearing but are not willing to accept irreversible methods (sterilization). This would suggest that non-maintenance methods like the IUD and injectables should be increasingly popular. This is true of injectables, however, the IUD has suffered from a lack of popularity in recent years resulting in declining use rates for this method. Programs should recognize the needs of this population sub-group by providing appropriate method and further encouragement for the use of sterilization. Sterilization should continue to be a popular method, as a minimum of 85 percent of all currently married women aged 35 and above want no more children.

Interestingly, family planning in Thailand, as in most countries, continues to be primarily focused on female methods. The condom has never played a major role in Thai Family planning, and vasectomy has experienced a pro-

portional decline. The Thai program may find that new program thrusts oriented toward motivating men to use family planning would be beneficial for the population planning effort in Thailand.

References

Arnold, Fred and Chintana Pejarononda

1977 **Economic Factors in Family Size Decisions in Thailand.** Research Report: A joint publication of Institutes of Population Studies, Chulalongkorn University, Population Survey Division, National Statistical Office and East-West Population Institute, East West Center.

Bongaarts, John

1978 **A Framework for the Proximate Determinants of Fertility.** Population and Development Review 4: 105-132.

Buripakdi, Chalio, with the assistance of Nathabol Khanthajai

1977 **The Value of Children: A cross-National Study.** A Joint publication of the East-West Population Institute and the Institute of Population Studies, Chulalongkorn University.

Burnight, Robert B., Keovichit, Srisomang and J. Richard Udry.

1968 **Family Planning Attitudes and Practices in Suburbanarea of Thailand.** Paper Presented at the National Research Council of Thailand, Bangkok, Thailand, April 2-5.

Cowgill, Donald O., keovichit, Srisomang, Burnight, Robert, G. Yamarat, Charas and J. Richard Udry.

1969 **Family Planning in Bangkok, Thailand.** Bangkok: Mahidol University Press.

Debavalya, Nibhon and John Knodel

1978 **Fertility Transition in Thailand: A Comparative Analysis of Survey Data, World Fertility Survey--Survey of Fertility in Thailand, Report No. 3, Bangkok: Institute of Population Studies, Chulalongkorn University and Population Survey Division, National Statistical Office.**

Hawley, Amos H. and Visid Prachuabmoh.

1966 **Family Growth and Family Planning: Responses to a Family Planning Action Program in a Rural District of Thailand.** Demography 3: 319-331.

Hill, Kenneth, Zlotnik, Hania and James Trussell.

1981 **Demographic Estimation: A manual on Indirect Techniques.** National Academy of Sciences, Washington, D.C.

Kamnuansilpa, Peerasit

1981 **A Study of Fertility Decisions Among Thai Women.** Research Report: Research Center, National Institute of Development Administration, Bangkok, Thailand.

Knodel, John and Nibhon Debavalya

1978 **Thailand's Reproductive Revolution.** International Family Planning Perspectives and Digest 4: 34-39.

Knodel, John, Debavalya, Nibhon and Peerasit Kamnuansilpa

1980 **Thailand's Continuing Reproductive Revolution.** International Family Planning Perspectives 6(3): 84-97.

Lewis, G. and D. Nortman

1981 **The Impact of Definition on Contraceptive Prevalence Rates and the Implications for Assessing Contraceptive Demand.** Paper presented at IUSSP, Seminar on the

Analysis of WFS Family Planning Module, Kuala Lumpur, Malaysia, December 1981.

Lewis, Gary L. and John A. Navak

1982 An Approach to the Measurement of Availability of Family Planning Services. PP. 241-278 in Albert I. Hermalin and Barbara Entwisle (eds.), The Role of Surveys in the Analysis of Family Planning Programs. Liege: Ordina.

Morris, Leo, et. al.

1981 Contraceptive Prevalence Surveys: A new Source of Family Planning Data. Population Reports Series M, Number 5, May-June, pp. M161-M200.

National Family Planning Program

1972 Family Planning in Thailand 1965-1971 Cooperative Marketing and Purchasing Federation of Thailand.

National Statistical Office

No Date 1970 Population and Housing Census: Whole Kingdom. Bangkok, Thailand.
1978 Report of the Survey of Population Change, 1974-1976. Bangkok.

Piampiti, S. and John Knodel

1978 Revised Estimates of Age-Specific Fertility Rates From the Survey of Fertility in Thailand. Bangkok: Institute of Population Studies, Chulalongkorn University and Population Survey Division, National Statistical Office.

Suvanajata, Titaya and Peerasit Kamnuansilpa

1979 Thailand Contraceptive Prevalence Survey: Country Report 1979. National Institute of Development Administration, Ministry of Public Health and Westinghouse Health System, Bangkok.

Trussell, T. James.

1975 A Re-estimation of the Multiplying Factor for the Brass Technique for Determining Childhood Survivorship Rates. Population Studies 29: 97-107.

Westoff, C.

1978 The Unmet Need for Birth Control in Five Asian Countries. Family Planning Perspectives 10 (3): May-June.

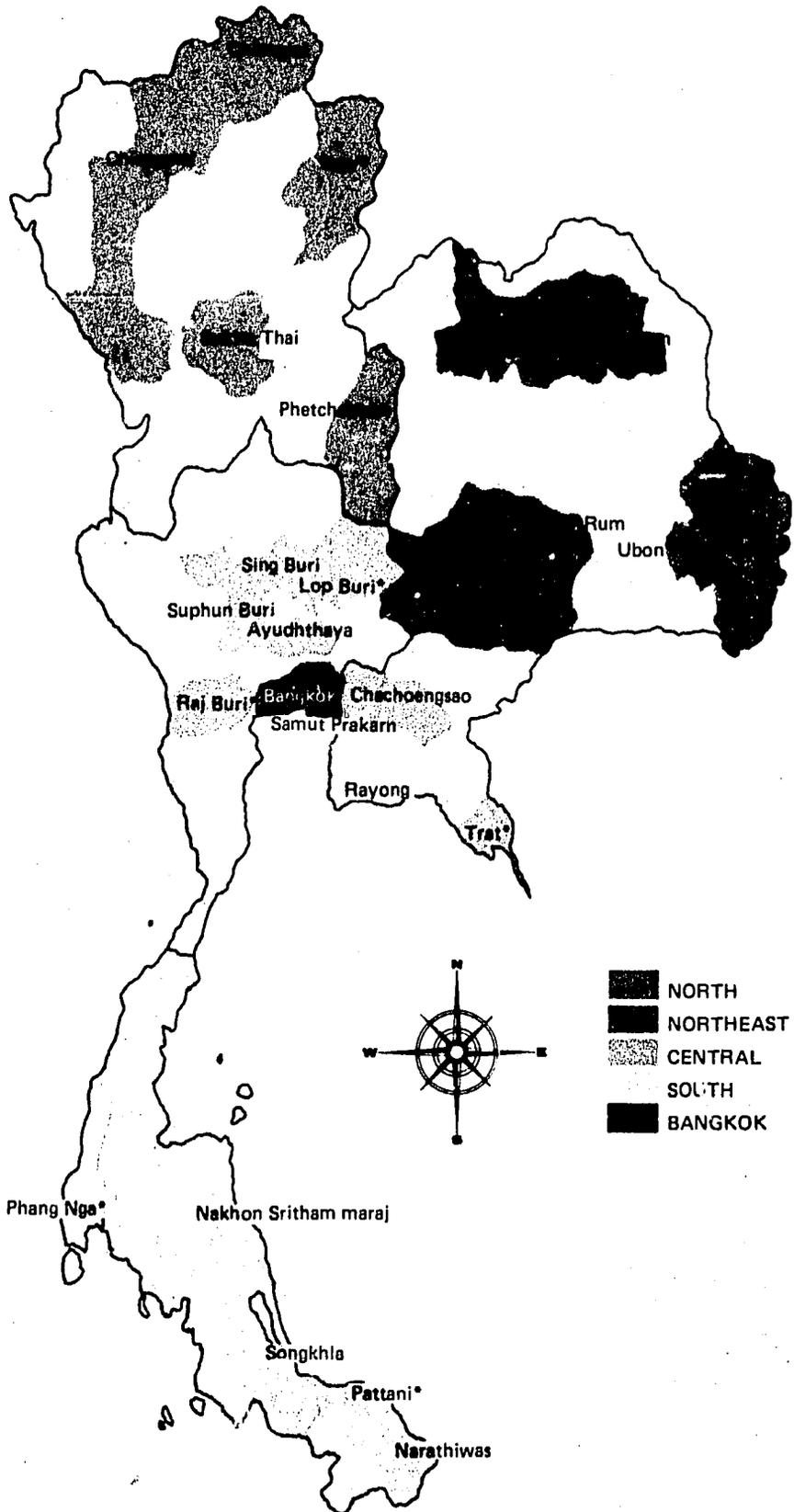
Westoff, C. and A. Pebley

1981 Alternative Measurements of Unmet Need for Contraception in WFS Survey of Developing Countries. Paper presented at IUSSP, Seminar on the Analysis of WFS Family Planning Module, Kuala Lumpur, Malaysia, December 1981.

**APPENDIX A
SAMPLE DESIGN AND ESTIMATION OF
PARAMETERS**

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MAP OF SAMPLE AREAS



SAMPLE DESIGN AND ESTIMATION OF PARAMETERS*

SAMPLE DESIGN

The sample design for the second round of Thailand National Contraceptive Prevalence Survey (CPS2) is similar to that of the first round (CPS1), except more emphasis is given to urban areas in the provinces that fall in the sample. The selection process is separated into two parts, selection of the rural sample and selection of the urban sample. However, for simplicity, the sampling procedure may be termed as multi-stage sampling in both cases. The sample is drawn in five stages as follows:

First Stage A sample of 25 provinces (including Bangkok) is drawn using stratified random sampling. The 72 provinces in the Kingdom are stratified into 5 geographical regions, the north, northeast, central, south, and Bangkok. Five provinces are drawn randomly from each region except in the central region where 9 provinces are drawn and Bangkok is automatically included in the sample.

Second Stage Two districts (Amphur) are randomly drawn from each province that has been drawn in the first stage. For Bangkok all 24 districts (Khet) are included in the second stage sample.

Third Stage Two subdistricts (Tambol) are randomly chosen from each district selected in the second stage. In Bangkok, a sample of subdistricts (Kwang) is drawn from each Khet to make a total of 51 Kwang. A number of municipal areas is also drawn at this stage from the sample districts in various provinces.

Fourth Stage Two villages (Muban) are randomly drawn from each subdistrict that has been included in the third stage sample. This comprises of 192 villages sampled from rural area. For Bangkok, 51 artificial blocks, of 105 households each, are constructed within the Kwang already drawn in the third stage. In addition, 90 blocks, each of 35 households, are constructed within the municipalities drawn

**Prepared by Prachoom Suwattee*

in the third stage.

Fifth Stage A random sample of eligible women, 15 to 49 year of age, is drawn from each village or block that is included in the fourth stage. The number of respondents drawn from the villages in the rural area is proportional to size of the eligible population. From each artificial block in Bangkok 15 eligible women are selected randomly for interview and five respondents are randomly drawn from each block in other municipalities.

In order to obtain regional estimates we shall set up the notation as in the table below. To obtain the national estimates we simply combine the results from all regions. The table also summarizes the sampling procedure employed for CPS2.

Stage of sampling unit	No. in universe	No. in sample	Selection method	Sampling fraction
1 province	N_h	n_h	SRSWOR	$f_h = n_h/N_h$
2 district	M_{hi}	m_{hi}	SRSWOR	$f_{hi} = m_{hi}/M_{hi}$
3 subdistrict or municipality	Q_{hij}	q_{hij}	SRSWOR	$f_{hij} = q_{hij}/Q_{hij}$
4 village or blocks	T_{hijk}	t_{hijk}	SRSWOR	$f_{hijk} = t_{hijk}/T_{hijk}$
5 respondents	U_{hijks}	u_{hijks}	SRSWOR	$f_{hijks} = u_{hijks}/U_{hijks}$

As we have stratified the 72 provinces in Thailand into 5 geographical regions, namely the north, northeast, central, south and Bangkok Metropolis, the subscript h refers to the region which may take on the value 1, 2, 3, 4, or 5. So

N_h is the total number of provinces that are in region h .

n_h is the number of provinces that are included in the first stage sample from region h . Similarly,

M_{hi} is the total number of districts in province i which is in region h , $i = 1, 2, \dots, N_h$; $h = 1, 2, 3, 4, 5$.

m_{hi} is the number of districts chosen from the province selected on the i^{th} draw from stratum h , $i = 1, 2, \dots, n_h$; $h = 1, 2, 3, 4, 5$.

Q_{hij} is the total number of subdistricts in district j , province i which is in region h , $j = 1, 2, \dots, M_{hi}$; $i = 1, 2, \dots, N_h$; $h = 1, 2, 3, 4, 5$.

q_{hij} is the number of subdistricts sampled from district j , province i , in region h already selected in previous stages, $j = 1, 2, \dots, m_{hi}$; $i = 1, 2, \dots, n_h$; $h = 1, 2, 3, 4, 5$.

T_{hijk} is the total number of villages or blocks in subdistrict k , district j , province i which is in region h , $k = 1, 2, \dots, Q_{hij}$; $j = 1, 2, \dots, M_{hi}$; $i = 1, 2, \dots, N_h$; $h = 1, 2, 3, 4, 5$.

t_{hijk} is the number of villages or blocks drawn from subdistrict k , district j , province i already selected from region h , $k = 1, 2, \dots, q_{hij}$; $j = 1, 2, \dots, m_{hi}$; $i = 1, 2, \dots, n_h$; $h = 1, 2, 3, 4, 5$.

U_{hijks} is the total number of eligible women (15 to 49 years of age) existed in village (or block) s , subdistrict (or municipality) k , district j , province i and region h , $s = 1, 2, \dots, T_{hijk}$; $k = 1, 2, \dots, Q_{hij}$; $j = 1, 2, \dots, M_{hi}$; $i = 1, 2, \dots, N_h$; $h = 1, 2, 3, 4, 5$.

u_{hijks} is the number of eligible women drawn from village (or block) s , subdistrict (or municipality) k , district j , province i and region h already drawn in previous stages, $s = 1, 2, \dots, t_{hijk}$, $k = 1, 2, \dots, q_{hij}$; $j = 1, 2, \dots, m_{hi}$; $i = 1, 2, \dots, n_h$; $h = 1, 2, 3, 4, 5$.

ESTIMATION OF UNIVERSE TOTAL

Let y be the study variable, i.e. the variable of interest.

Let y_{hijksw} be the sample value of the study variable y measured from the w^{th} respondent in village (or block) s , subdistrict (or municipality) k , district j , province i drawn from region h , $w = 1, 2, \dots, u_{hijks}$; $s = 1, 2, \dots, t_{hijk}$; $k = 1, 2, \dots, q_{hij}$; $j = 1, 2, \dots, m_{hi}$; $i = 1, 2, \dots, n_h$; $h = 1, 2, \dots, L$.

The regional estimate of the total of the variable y for region h is given unbiasedly by

$$y_h^* = \frac{N_h}{n_h} \sum_{i=1}^{n_h} \frac{M_{hi}}{m_{hi}} \sum_{j=1}^{m_{hi}} \frac{Q_{hij}}{q_{hij}} \sum_{k=1}^{q_{hij}} \frac{T_{hijk}}{t_{hijk}} \sum_{s=1}^{t_{hijk}} \frac{U_{hijks}}{u_{hijks}} \sum_{w=1}^{u_{hijks}} y_{hijksw} \dots (1)$$

which may be rewritten as

$$y_h^* = \frac{N_h}{n_h} \sum_{i=1}^{n_h} y_{hi}^* \dots (2)$$

where $y_{hi}^* = \frac{M_{hi}}{m_{hi}} \sum_{j=1}^{m_{hi}} y_{hij}^* \dots (3)$

$$y_{hij}^* = \frac{Q_{hij}}{q_{hij}} \sum_{k=1}^{q_{hij}} y_{hijk}^* \dots (4)$$

$$y_{hijk}^* = \frac{T_{hijk}}{t_{hijk}} \sum_{s=1}^{t_{hijk}} y_{hijks}^* \dots (5)$$

$$y_{hijks}^* = \frac{U_{hijks}}{u_{hijks}} \sum_{w=1}^{u_{hijks}} y_{hijksw} \quad \dots\dots(6)$$

The national estimate of the total value for the study variable y is given by

$$y^* = \sum_{h=1}^L y_h^* \quad \dots\dots(7)$$

In practice, we need to estimate the total value of y for region h in two steps, one from the rural sample and another from the urban sample. If we let y_{1h}^* be the estimate of the total of y from the rural sample and let y_{2h}^* be the corresponding estimate from the urban sample, we have

$$y_h^* = y_{1h}^* + y_{2h}^* \quad \dots\dots(8)$$

$$y_{1h}^* = \frac{1}{8} \cdot \frac{N_h}{n_h} \sum_{i=1}^{n_h} M_{hi} \sum_{j=1}^2 Q_{hij} \sum_{k=1}^2 T_{hijk} \sum_{s=1}^2 y_{hijks}^* \quad \dots\dots(9)$$

$$y_{2h}^* = \frac{1}{2} \cdot \frac{N_h}{n_h} \sum_{i=1}^{n_h} M_{hi} \sum_{j=1}^2 \frac{Q_{hij}}{q_{hij}} \sum_{k=1}^{q_{hij}} \frac{T_{hijk}}{t_{hijk}} \sum_{s=1}^{t_{hijk}} y_{hijks}^* \quad \dots\dots(10)$$

where in (10)

M_{hi} is the number of districts in province i sampled in the first stage,

Q_{hij} is the number of municipalities existed in district j , province i and q_{hij} is the corresponding sample value,

T_{hijk} is the total number of blocks (each of 35 households) in municipality k , district j , province i , and t_{hijk} is the corresponding sample value,

$$\text{and } y_{hijks}^* = \frac{U_{hijks}}{5} \sum_{w=1}^5 y_{hijksw} \quad \dots\dots(11)$$

Also, for (10), in most cases $Q_{hi,j} = q_{hij} = 1$. Hence, (10) may be simplified to

$$y_{2h}^* = \frac{1}{10} \cdot \frac{N_h}{n_h} \sum_{i=1}^{n_h} M_{hi} \sum_{j=1}^2 \frac{T_{hijk}}{t_{hijk}} \sum_{s=1}^t c_{hijk} U_{hijks} \sum_{w=1}^5 y_{hijksw} \quad \dots\dots(12)$$

For Bangkok, the corresponding estimate of the total value for the study variable is

$$y_5^* = \frac{1}{15} \sum_{j=1}^{24} \frac{Q_j}{q_j} \sum_{k=1}^{q_j} T_{jk} \cdot U_{ij} \sum_{w=1}^{15} y_{5ljk1w} \quad \dots\dots(13)$$

where

Q_j is the number of subdistricts (Kwang) existed in district (Khet) j,

q_j is the number of subdistricts included in the sample drawn from district j,

T_{jk} is the number of blocks (each of 105 households) existed in subdistrict k, district j,

y_{5ljk1w} is the value of the variable measured from the w^{th} respondent in the (only one) block in subdistrict k, district j.

The steps of calculation of y_h^* are as follows:

- 1) Find the sample village totals or block totals

$$y_{hijks} = \sum_{w=1}^u y_{hijksw} \quad \dots\dots(14)$$

2) Find y_{hijks}^* using (6) or (11) according to the estimate required. (6) may be rewritten in the form

$$y_{hijks}^* = \frac{U_{hijks}}{u_{hijks}} y_{hijks} \quad \dots\dots(15)$$

3) Find y_{1h}^* , y_{2h}^* and y_5^* using (9), (10) and (13) respectively.

4) For $h = 1, 2, 3, 4$, find y_h^* using (3).

In addition, sampling error of y_h^* should be estimated.

The true variance of y_h^* may be derived from

$$\begin{aligned} V(y_h^*) &= V_1 E_2 E_3 E_4 E_5 (y_h^*) + E_1 V_2 E_3 E_4 E_5 (y_h^*) \\ &+ E_1 E_2 V_3 E_4 E_5 (y_h^*) + E_1 E_2 E_3 V_4 E_5 (y_h^*) \\ &+ E_1 E_2 E_3 E_4 V_5 (y_h^*) \quad \dots\dots(16) \end{aligned}$$

where E_i and V_j represent the conditional expected value and variance in the i^{th} and j^{th} stage respectively.

$V(y_h^*)$ may be estimated by

$$\begin{aligned} s^2(y_h^*) &= N_h^2 \bar{U}_h^2 (1-f_h) \frac{s_{hb}^2}{n_h} + \frac{N_h}{n_h} \sum_{i=1}^{n_h} \bar{U}_{hi}^2 (1-f_{hi}) \frac{s_{hi}^2}{m_{hi}} \\ &+ \frac{N_h}{n_h} \sum_{i=1}^{n_h} \frac{M_{hi}}{m_{hk}} \sum_{j=1}^{m_{hi}} \bar{U}_{hij}^2 (1-f_{hij}) \frac{s_{hij}^2}{q_{hij}} \\ &+ \frac{N_h}{n_h} \sum_{i=1}^{n_h} \frac{M_{hi}}{m_{hi}} \sum_{j=1}^{m_{hi}} \frac{Q_{hij}}{q_{hij}} \sum_{k=1}^{q_{hij}} \bar{U}_{hijk}^2 (1-f_{hijk}) \frac{s_{hijk}^2}{t_{hijk}} \end{aligned}$$

$$+ \frac{N_h}{n_h} \sum_{i=1}^{n_h} \frac{M_{hi}}{m_{hi}} \sum_{j=i}^{m_{hi}} \frac{Q_{hij}}{q_{hij}} \sum_{k=1}^{q_{hij}} \frac{T_{hijk}}{t_{hijk}} \sum_{s=1}^{t_{hijk}} U_{hijks}^2 (1-f_{hijks}) \frac{s_{hijks}^2}{u_{hijks}}$$

.....(17)

where $\bar{U}_{hijk} = \frac{t_{hijk}}{\sum_{s=1}^{t_{hijk}} U_{hijks}} / t_{hijk}$ (18)

$$\bar{U}_{hij} = \frac{q_{hij}}{\sum_{k=1}^{q_{hij}} \sum_{s=1}^{t_{hijk}} U_{hijks}} / q_{hij}$$

.....(19)

$$\bar{U}_{hi} = \frac{m_{hi}}{\sum_{j=1}^{m_{hi}} \sum_{k=1}^{q_{hij}} \sum_{s=1}^{t_{hijk}} U_{hijks}} / m_{hi}$$

.....(20)

$$\bar{U}_h = \frac{n_h}{\sum_{i=1}^{n_h} \sum_{j=1}^{m_{hi}} \sum_{k=1}^{q_{hij}} \sum_{s=1}^{t_{hijk}} U_{hijks}} / n_h$$

.....(21)

$$s_{hb}^2 = \frac{n_h}{\sum_{i=1}^{n_h} (y_{hi}^* - y_h^*)^2} / (n_h - 1)$$

.....(22)

$$s_{hi}^2 = \frac{m_{hi}}{\sum_{j=1}^{m_{hi}} (y_{hij}^* - y_{hi}^*)^2} / (m_{hi} - 1)$$

.....(23)

$$s_{hij}^2 = \frac{q_{hij}}{\sum_{k=1}^{q_{hij}} (y_{hijk}^* - y_{hij}^*)^2} / (q_{hij} - 1)$$

.....(24)

$$s_{hijk}^2 = \frac{t_{hijk}}{\sum_{s=1}^{t_{hijk}} (y_{hijks}^* - y_{hijk}^*)^2} / (t_{hijk} - 1)$$

.....(25)

$$s_{hijks}^2 = \frac{u_{hijks}}{\sum_{w=1}^{u_{hijks}} (y_{hijksw}^* - y_{hijks}^*)^2} / (u_{hijks} - 1)$$

.....(26)

The relative standard error of y_h^* is

$$\text{c.v. } (y_h^*) = \frac{s(y_h^*)}{y_h^*} \quad \dots\dots(27)$$

Formula (17) may be applied for y_{1h}^* , y_{2h}^* and the results should be combined to obtain the variance estimate of $y_{1h}^* + y_{2h}^*$. Then the relative standard error of the regional estimate is given by

$$\text{c.v. } (y_{1h}^* + y_{2h}^*) = \frac{s(y_{1h}^* + y_{2h}^*)}{y_{1h}^* + y_{2h}^*} \quad \dots\dots(28)$$

The estimate of the variance of y_5^* is

$$s^2(y_5^*) = 11,025 \sum_{j=1}^{24} (1-f_j) \frac{s_j^2}{q_j} + \sum_{j=1}^{24} \frac{Q_j}{q_j} \sum_{k=1}^{q_j} T_{1k} \cdot s_{jk}^2 \quad \dots\dots(29)$$

where $f_j = q_j/Q_j \quad \dots\dots(30)$

$$s_j^2 = \frac{q_j}{\sum_{k=1}^{q_j} (y_{51jk}^* - y_{51j}^*)^2} / (q_j - 1) \quad \dots\dots(31)$$

$$s_j^2 = \frac{1}{14} \sum_{w=1}^{15} (y_{51jklw}^* - y_{51jkl}^*)^2 \quad \dots\dots(32)$$

and $\text{c.v. } (y_5^*) = \frac{s(y_5^*)}{y_5^*} \quad \dots\dots(33)$

ESTIMATION OF THE TOTAL NUMBER OF ELIGIBLE WOMEN

We may estimate the total number of eligible women in province i which is drawn in the first stage from region h , $h = 1, 2, 3, 4$ is

$$u_{hi}^* = u_{1hi}^* + u_{2hi}^* \quad \dots\dots(34)$$

where

$$u_{1hi}^* = \frac{M_{hi}}{8} \sum_{j=1}^2 Q_{hij} \sum_{k=1}^2 T_{hijk} (U_{hijkl} + U_{hijk2}) \quad \dots\dots(35)$$

$$u_{2hi}^* = \frac{35M_{hi}}{2} \sum_{j=1}^2 \frac{Q_{hij}}{q_{hij}} \sum_{k=1}^{q_{hij}} \frac{T_{hijk}}{t_{hijk}} \sum_{s=1}^{t_{hijk}} U_{hijks} \quad \dots\dots(36)$$

The estimated number of eligible women in region h is

$$u_h^* = u_{1h}^* + u_{2h}^* \quad \dots\dots(37)$$

where

$$u_{1h}^* = \frac{N_h}{n_h} \sum_{i=1}^{n_h} u_{1hi}^* \quad \dots\dots(38)$$

and

$$u_{2h}^* = \frac{N_h}{n_h} \sum_{i=1}^{n_h} u_{2hi}^* \quad \dots\dots(39)$$

The estimated variance of u_{1h}^* is

$$s_{u_{1h}^*}^2 = (1-f_h) \sum_{i=1}^{n_h} (u_{1hi}^* - u_{1h}^*)^2 / n_h (n_h - 1) \quad \dots\dots(40)$$

and that of u_{2h}^* is

$$s_{u_{2h}^*}^2 = (1-f_h) \sum_{i=1}^{n_h} (u_{2hi}^* - u_{2h}^*)^2 / n_h (n_h - 1) \quad \dots\dots(41)$$

The estimate of the variance of u_h^* is

$$s_{u_h^*}^2 = s_{u_{1h}^*}^2 + s_{u_{2h}^*}^2 \quad \dots\dots(42)$$

and

$$c.v.(u_h^*) = \frac{s_{u_h^*}}{u_h^*} \quad \dots\dots(43)$$

An unbiased estimate of the number of women 15-49 years of age in Bangkok is

$$u_5^* = \sum_{j=1}^{24} \frac{n_j}{q_j} \sum_{k=1}^{q_j} T_{jk} U_{jk} \quad \dots\dots(44)$$

$$s_{u_5^*}^2 = \sum_{j=1}^{24} \left(1 - \frac{q_j}{Q_j}\right) \cdot \sum_{k=1}^{q_j} (u_{5jk}^* - u_{5j}^*)^2 / q_j (q_j - 1) \quad \dots\dots(45)$$

where

$$u_{5jk}^* = T_{jk} U_{jk} \quad \dots\dots(46)$$

and
$$u_{5j}^* = \frac{n_j}{q_j} \sum_{k=1}^{q_j} T_{jk} U_{jk} \quad \dots\dots(47)$$

$$c.v.(u_5^*) = \frac{s_{u_5^*}}{u_5^*} \quad \dots\dots(48)$$

An unbiased estimate of the total number of eligible women in the whole kingdom is

$$u^* = \sum_{h=1}^5 u_h^* \quad \dots\dots(49)$$

$$s_{u^*}^2 = \sum_{h=1}^5 s_{u_h^*}^2 \quad \dots\dots(50)$$

and

$$c.v.(u^*) = \frac{s_{u^*}}{u^*} \quad \dots\dots(51)$$

ESTIMATION OF THE POPULATION MEAN

A consistent but biased estimate of the population mean per eligible woman in region h is

$$r_h = \frac{y_h^*}{u_h^*} \quad \dots\dots(52)$$

with variance estimate

$$s_{r_h}^2 = \frac{s^2(y_h^*) + r_h^2 \cdot s_{u_h^*}^2 - 2r_h s_{hyu}}{u_h^{*2}} \quad \dots\dots(53)$$

where $s_{hyu} = \frac{1}{n_h} \sum_{i=1}^{n_h} (y_{hi}^* - y_h^*)(u_{hi}^* - u_h^*) / n_h (n_h - 1)$ (54)

In similar fashion, an estimate of the population mean per eligible woman in all regions is

$$r = y^* / u^* \quad \dots\dots(55)$$

with variance estimate

$$s_r^2 = (s_{y^*}^2 + r^2 s_{u^*}^2 - 2rs_{y^* u^*}) / u^{*2} \quad \dots (56)$$

where $s_{y^* u^*} = \frac{5}{\sum_{h=1}^5} \frac{n_h}{\sum_{i=1}^{n_h}} (y_{hi}^* - y_h^*) (u_{hi}^* - u_h^*) / n_h (n_h - 1) \quad \dots (57)$

ESTIMATION OF PROPORTION OF UNITS

Let Y_{hijks} be the number of eligible women possessing a certain attribute in the s^{th} village or block in the k^{th} subdistrict in the j^{th} district of the i^{th} province in the h^{th} region.

The corresponding sample value of Y_{hijks} is y_{hijks} which may be obtained from

$$y_{hijks} = \sum_{w=1}^{u_{hijks}} y_{hijksw} \quad \dots (58)$$

where

$$y_{hijksw} = \begin{cases} 1 & \text{if } w \text{ is the } w^{th} \text{ respondent who possesses} \\ & \text{the attribute 1} \\ 0 & \text{otherwise} \end{cases} \quad \dots (59)$$

The total number of such women in the h^{th} region is

$$Y_h = \sum_{i=1}^{N_h} \sum_{j=1}^{M_{hi}} \sum_{k=1}^{Q_{hij}} \sum_{s=1}^{T_{hijk}} Y_{hijks} \quad \dots (60)$$

and in the whole country is

$$Y = \sum_{h=1}^5 Y_h \quad \dots (61)$$

In each region except Bangkok, Y_h is the sum of the rural women and urban women who possess the attribute, i.e.

$$Y_h = Y_{1h} + Y_{2h} \quad \dots\dots(62)$$

where Y_{1h} and Y_{2h} are the number of eligible women in the rural and urban areas possessing the attribute respectively.

The total number of eligible women in region h is

$$U_h = \sum_{i=1}^{N_h} \sum_{j=1}^{M_{hi}} \sum_{k=1}^{Q_{hij}} \sum_{s=1}^{T_{hijk}} U_{hijks} \quad \dots\dots(63)$$

where $U_h = U_{1h} + U_{2h}$ as in the case of Y_h .

The proportion of women in the h^{th} region possessing the attribute is

$$P_h = Y_h / U_h \quad \dots\dots(64)$$

and the proportion of women in the whole country with the attribute is

$$P = Y / U \quad \dots\dots(65)$$

In practice, both Y_h and U_h are unknown. So we may estimate P_h by means of ratio estimation. An unbiased estimate of Y_h is y_h^* as in equations (1), (8), (13) (with 0, 1 meaning of y_{hijks} as in (59)), and that of U_h is u_h^* as in equations (37) and (44).

A consistent but biased estimate of P_h is

$$p_h = y_h^* / u_h^* \quad \dots\dots(66)$$

Similarly, an appropriate estimate of P is

$$p = y^*/u^* \quad \dots\dots(67)$$

An estimated variance of p_h is

$$s_{p_h}^2 = \frac{s_{y_h}^2 + p_h^2 s_{u_h}^2 - 2p_h s_{hyu}}{u_h^2} \quad \dots\dots(68)$$

and similarly

$$s_p^2 = \frac{s_y^2 + p^2 s_u^2 - 2ps_{yu}}{u^2} \quad \dots\dots(69)$$

The coefficients of variation of the estimates may be estimated in an obvious fashion.

**APPENDIX B
SCHEDULE OF SURVEY OPERATIONS**

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SCHEDULE OF PROJECT ACTIVITIES, 1981-82

Month and week Activity	Jan. 1981	Feb. 1981	Mar. 1981	Apr. 1981	May. 1981	Jun. 1981	Jul. 1981	Aug. 1981	Sept. 1981	Oct. 1981	Nov. 1981	Dec. 1981	Jan. 1982	Feb. 1982
	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4
Planning recruitment and training	* * * *													
Pretesting and testing analysis		* * * *												
Field work preparation			* * *											
Data-collection (Listing & interviewing)				*	* * * * *	* * * * *	* * *							
Data-processing							* * * * *	* * * * *	* * * * *	* * * *				
Analysis and report writing											*	* * * * *	* * * * *	* * * * *

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**APPENDIX C
APPENDIX TABLES**

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TABLE A1: NUMBER OF EVER MARRIED WOMEN AGED 15-49 BY AGE AND RURAL-URBAN RESIDENCE

	National	Rural	Total	Urban	
				Bangkok	Provincial
15-19	291	252	39	20	19
20-24	1,125	950	175	99	76
25-29	1,443	1,169	274	179	95
30-34	1,350	1,099	251	164	87
35-39	1,094	893	201	133	68
40-44	1,032	861	171	112	59
45-49	703	599	104	58	46
Total					
15-49	7,038	5,823	1,215	765	450

TABLE A2: NUMBER OF EVER MARRIED WOMEN AGED 15-49 BY AGE AND REGION OF RESIDENCE

	North	Northeast	South	Central	
				Total	Without Bangkok
15-19	56	114	35	86	66
20-24	225	394	121	385	286
25-29	264	468	160	551	372
30-34	242	438	178	492	328
35-39	195	370	137	392	259
40-44	160	367	147	358	246
45-49	123	252	91	237	179
Total					
15-49	1,265	2,403	869	2,501	1,736

TABLE A3: NUMBER OF EVER-MARRIED WOMEN AGED 15-49 BY AGE, NUMBER OF YEARS OF SCHOOLING AND RURAL-URBAN RESIDENCE

	National			Rural			Urban		
	<4	4	5+	<4	4	5+	<4	4	5+
15-19	32	197	62	29	175	48	3	22	14
20-24	98	797	229	81	723	145	17	74	84
25-29	129	1,097	217	117	950	102	12	147	115
30-34	185	969	196	168	860	71	17	109	125
35-39	197	773	123	170	673	49	27	100	74
40-44	295	663	74	248	593	20	47	70	54
45-49	247	428	27	220	371	8	27	57	19
Total									
15-49	1,183	4,924	928	1,033	4,345	443	150	579	485

NOTE: Excludes 3 women "not stated" as to educational status.

TABLE B1: NUMBER OF CURRENTLY MARRIED WOMEN AGED 15-49 BY AGE AND RURAL-URBAN RESIDENCE

	National	Rural	Total	Urban	
				Bangkok	Provincial
15-19	276	240	36	18	18
20-24	1,082	911	171	97	74
25-29	1,399	1,129	270	177	93
30-34	1,292	1,051	241	157	84
35-39	1,028	839	189	125	64
40-44	943	788	155	101	54
45-49	607	516	91	50	41
Total 15-49	6,627	5,474	1,153	725	428

TABLE B2: NUMBER OF CURRENTLY MARRIED WOMEN AGED 15-49 BY AGE AND REGION OF RESIDENCE

	North	North East	South	Central	
				Total	Without Bangkok
15-19	55	108	32	81	63
20-24	222	375	113	372	275
25-29	258	445	154	542	365
30-34	233	421	168	470	313
35-39	183	340	129	376	251
40-44	152	328	135	328	227
45-49	109	218	79	201	151
Total 15-49	1,212	2,235	810	2,370	1,645

TABLE B3: NUMBER OF CURRENTLY MARRIED WOMEN AGED 15-49 BY AGE, NUMBER OF YEARS OF SCHOOLING AND RURAL-URBAN RESIDENCE

	National			Rural			Urban		
	<4	4	5+	<4	4	5+	<4	4	5+
15-19	29	188	59	27	167	46	2	21	13
20-24	94	767	220	79	693	138	15	74	82
25-29	127	1,061	211	115	915	99	12	146	112
30-34	178	923	191	161	821	69	17	102	122
35-39	183	729	115	156	634	48	27	95	67
40-44	275	602	66	231	539	18	44	63	48
45-49	218	365	23	195	315	6	23	50	17
Total 15-49	1,104	4,635	885	964	4,084	424	140	551	461

NOTE: Excludes 2 women "not stated" as to educational status.

TABLE C1: AVERAGE NUMBER OF CHILDREN EVER-BORN AMONG EVER-MARRIED WOMEN AGED 15-49 BY AGE AND RURAL-URBAN RESIDENCE

	National	Rural	Total	Urban	
				Bangkok	Provincial
15-19	0.65	0.64	0.72	0.60	0.84
20-24	1.39	1.41	1.26	1.14	1.42
25-29	2.14	2.24	1.74	1.65	1.91
30-34	3.13	3.29	2.42	2.29	2.68
35-39	4.23	4.45	3.26	3.17	3.46
40-44	5.31	5.61	3.80	3.46	4.44
45-49	6.13	6.37	4.75	4.40	5.20
Total 15-49	3.34	3.50	2.58	2.43	2.83

TABLE C2: AVERAGE NUMBER OF CHILDREN EVER-BORN AMONG EVER-MARRIED WOMEN AGED 15-49 BY AGE AND REGION OF RESIDENCE

	North	Northeast	South	Central	
				Total	Without Bangkok
15-19	0.55	0.65	0.69	0.71	0.74
20-24	1.26	1.43	1.65	1.34	1.40
25-29	2.02	2.30	2.78	1.89	2.01
30-34	2.86	3.46	3.69	2.76	2.99
35-39	4.12	4.67	4.60	3.74	4.04
40-44	5.07	6.19	5.60	4.39	4.81
45-40	5.68	7.10	6.28	5.28	5.57
Total 15-49	3.04	3.75	3.85	2.90	3.11

TABLE C3: AVERAGE NUMBER OF CHILDREN EVER-BORN AMONG EVER-MARRIED WOMEN AGED 15-49 BY AGE, NUMBER OF YEARS OF SCHOOLING AND RURAL-URBAN RESIDENCE

	National			Rural			Urban		
	<4	4	5+	<4	4	5+	<4	4	5+
15-19	0.97	0.66	0.47	0.83	0.66	0.46	2.33	0.64	0.50
20-24	1.75	1.41	1.14	1.80	1.42	1.15	1.47	1.37	1.13
25-29	2.68	2.21	1.48	2.68	2.24	1.73	2.68	2.03	1.27
30-34	3.67	3.21	2.23	3.77	3.26	2.54	2.59	2.83	2.05
35-39	4.94	4.28	2.77	5.05	4.38	3.31	4.26	3.62	2.42
40-44	5.43	5.50	3.08	5.59	5.66	4.20	4.60	4.13	2.68
45-49	6.47	6.09	3.63	6.55	6.31	4.38	5.85	4.68	3.32
Total 15-49	4.57	3.32	1.85	4.65	3.39	1.86	3.98	2.83	1.84

TABLE D1: AVERAGE NUMBER OF LIVING CHILDREN AMONG EVER-MARRIED WOMEN AGED 15-49 BY AGE AND RURAL-URBAN RESIDENCE

	National	Rural	Total	Urban	
				Bangkok	Provincial
15-19	0.62	0.61	0.72	0.60	0.84
20-24	1.31	1.33	1.23	1.10	1.40
25-29	1.99	2.07	1.64	1.57	1.76
30-34	2.85	2.97	2.35	2.21	2.60
35-39	3.82	3.98	3.11	3.05	3.25
40-44	4.57	4.77	3.57	3.30	4.07
45-49	5.15	5.31	4.23	4.07	4.44
Total					
15-49	2.97	3.08	2.43	2.32	2.62

TABLE D2: AVERAGE NUMBER OF LIVING CHILDREN AMONG EVER-MARRIED WOMEN AGED 15-49 BY AGE AND REGION OF RESIDENCE

	North	Northeast	South	Central	
				Total	Without Bangkok
15-19	0.54	0.61	0.63	0.70	0.73
20-24	1.17	1.36	1.50	1.28	1.35
25-29	1.83	2.16	2.56	1.76	1.85
30-34	2.49	3.16	3.35	2.58	2.76
35-39	3.57	4.18	4.26	3.45	3.66
40-44	4.27	5.13	4.92	3.99	4.30
45-49	4.70	5.74	5.47	4.62	4.80
Total					
15-49	2.64	3.28	3.47	2.67	2.82

TABLE D3: AVERAGE NUMBER OF LIVING CHILDREN AMONG EVER-MARRIED WOMEN AGED 15-49 BY AGE, NUMBER OF YEARS OF SCHOOLING AND RURAL-URBAN RESIDENCE

	National			Rural			Urban		
	<4	4	5+	<4	4	5+	<4	4	5+
15-19	0.88	0.63	0.47	0.73	0.63	0.46	2.33	0.64	0.50
20-24	1.61	1.34	1.08	1.65	1.34	1.08	1.41	1.35	1.08
25-29	2.37	2.06	1.42	2.39	2.08	1.63	2.25	1.90	1.24
30-34	3.25	2.93	2.12	3.32	2.95	2.37	2.59	2.73	1.98
35-39	4.42	3.86	2.62	4.46	3.93	3.04	4.15	3.41	2.34
40-44	4.67	4.71	2.92	4.75	4.81	3.80	2.28	3.84	2.59
45-49	5.34	5.15	3.37	5.38	5.29	4.25	5.04	4.25	3.00
Total									
15-49	3.94	2.96	1.76	3.98	3.00	1.74	3.67	2.66	1.77

NOTE: Three women did not state the number of years of schooling.

TABLE E1: AGE SPECIFIC FERTILITY RATES AMONG CURRENTLY MARRIED WOMEN AGED 15-49 BY AGE AND RURAL-URBAN RESIDENCE

	National	Rural	Urban		
			Total	Bangkok	Provincial
15-19	0.33	0.32	0.39	0.33	0.44
20-24	0.35	0.35	0.36	0.37	0.34
25-29	0.26	0.26	0.26	0.26	0.25
30-34	0.16	0.16	0.17	0.19	0.16
35-39	0.09	0.10	0.07	0.07	0.08
40-44	0.06	0.06	0.03	0.01	0.07
45-49	0.01	0.01	0.00	0.00	0.00
Total 15-49	0.18	0.18	0.18	0.18	0.18

TABLE E2: AGE SPECIFIC FERTILITY RATES AMONG CURRENTLY MARRIED WOMEN AGED 15-49 BY AGE AND REGION OF RESIDENCE

	North	Northeast	South	Central	
				Total	Without Bangkok
15-19	0.27	0.35	0.28	0.36	0.37
20-24	0.30	0.37	0.32	0.38	0.38
25-29	0.18	0.29	0.26	0.27	0.27
30-34	0.12	0.18	0.17	0.16	0.14
35-39	0.06	0.09	0.15	0.08	0.09
40-44	0.06	0.06	0.08	0.04	0.05
45-49	0.01	0.01	0.01	0.00	0.00
Total 15-49	0.15	0.19	0.18	0.18	0.19

TABLE E3: AGE SPECIFIC FERTILITY RATES AMONG CURRENTLY MARRIED WOMEN AGED 15-49 BY AGE, NUMBER OF YEARS OF SCHOOLING AND RURAL-URBAN RESIDENCE

	National			Rural			Urban		
	<4	4	5+	<4	4	5+	<4	4	5+
15-19	0.35	0.35	0.25	0.30	0.35	0.22	1.00	0.33	0.39
20-24	0.31	0.36	0.32	0.31	0.36	0.30	0.33	0.37	0.35
25-29	0.28	0.24	0.32	0.29	0.24	0.33	0.25	0.22	0.30
30-34	0.15	0.16	0.18	0.17	0.15	0.20	0.00	0.22	0.16
35-39	0.10	0.09	0.08	0.10	0.10	0.08	0.07	0.07	0.08
40-44	0.08	0.04	0.08	0.09	0.05	0.11	0.02	0.02	0.06
45-49	0.01	0.01	0.00	0.01	0.01	0.00	0.00	0.00	0.00
Total 15-49	0.13	0.18	0.23	0.14	0.18	0.25	0.09	0.17	0.21

TABLE F1: PERCENT CURRENTLY PREGNANT AMONG CURRENTLY MARRIED WOMEN AGED 15-49 BY AGE AND RUAL-URBAN RESIDENCE

	National	Rural	Total	Urban	
				Bangkok	Provincial
15-19	23.3	22.1	30.6	33.3	27.8
20-24	15.9	15.1	19.9	23.7	14.9
25-29	10.2	8.9	15.7	15.3	16.5
30-34	6.5	5.8	9.5	8.3	11.9
35-39	4.0	3.9	4.8	4.0	6.3
40-44	2.6	3.1	0.0	0.0	0.0
45-49	0.0	0.0	0.0	0.0	0.0
Total 15-49	7.9	7.4	10.4	10.2	10.6

TABLE F2: PERCENT CURRENTLY PREGNANT AMONG CURRENTLY MARRIED WOMEN AGED 15-49 BY AGE AND REGION OF RESIDENCE

	North	Northeast	South	Total	Central
					Without Bangkok
15-19	23.6	23.6	16.1	25.3	23.0
20-24	12.8	15.9	18.4	16.9	14.5
25-29	6.7	9.1	15.8	11.2	9.1
30-34	4.8	6.2	9.0	6.6	5.8
35-39	1.1	6.3	5.4	2.9	2.4
40-44	2.7	2.7	3.0	2.1	3.1
45-49	0.0	0.0	0.0	0.0	0.0
Total 15-49	6.3	8.1	9.4	8.1	7.2

TABLE F3: PERCENT CURRENTLY PREGNANT AMONG CURRENTLY MARRIED WOMEN AGED 15-49 BY AGE, NUMBER OF YEARS OF SCHOOLING AND RURAL-URBAN RESIDENCE

	National			Rural			Urban		
	<4	4	5+	<4	4	5+	<4	4	5+
15-19	34.5	21.3	23.7	37.0	19.8	21.7	0.0	33.3	30.8
20-24	15.6	15.2	18.4	14.7	14.8	17.0	20.0	18.9	20.7
25-29	8.8	9.3	15.7	8.9	8.8	10.2	8.3	12.5	20.5
30-34	7.9	6.7	4.2	6.9	5.9	1.5	17.7	12.8	5.7
35-39	6.7	3.6	2.6	5.9	3.3	4.2	11.1	5.3	1.5
40-44	2.2	2.8	1.5	2.6	3.2	5.9	0.0	0.0	0.0
45-49	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total 15-49	6.2	7.7	11.3	6.0	7.4	11.2	7.1	10.4	11.3

TABLE G1: EXPECTED FAMILY SIZE AMONG CURRENTLY MARRIED WOMEN AGED 15-49 BY AGE AND RURAL-URBAN RESIDENCE

	National	Rural	Total	Urban	
				Bangkok	Provincial
15-19	2.30	2.39	1.75	1.39	2.11
20-24	2.46	2.50	2.23	2.04	2.49
25-29	2.67	2.76	2.31	2.24	2.46
30-34	3.28	3.40	2.77	2.69	2.93
35-39	4.05	4.22	3.29	3.30	3.27
40-44	4.74	4.93	3.74	3.48	4.21
45-49	5.39	5.57	4.37	4.12	4.68
Total 15-49	3.50	3.63	2.90	2.77	3.10

NOTE: Expected family size is constructed by adding the number of additional children desired by women to the number of living children they already have.

TABLE G2: EXPECTED FAMILY SIZE AMONG CURRENTLY MARRIED WOMEN AGED 15-49 BY AGE AND REGION OF RESIDENCE

	North	Northeast	South	Total	Central
					Without Bangkok
15-19	2.15	2.42	3.44	1.83	1.95
20-24	2.19	2.65	3.13	2.23	2.30
25-29	2.35	2.91	3.46	2.41	2.50
30-34	2.82	3.56	4.02	2.99	3.14
35-39	3.88	4.42	4.46	3.66	3.84
40-44	4.36	5.33	5.26	4.10	4.37
45-49	4.80	5.98	5.86	4.90	5.15
Total 15-49	3.11	3.86	4.23	3.12	3.28

TABLE G3: EXPECTED FAMILY SIZE AMONG CURRENTLY MARRIED WOMEN AGED 15-49 BY AGE, NUMBER OF YEARS OF SCHOOLING AND RURAL-URBAN RESIDENCE

	National			Rural			Urban		
	<4	4	5+	<4	4	5+	<4	4	5+
15-19	3.00	2.32	1.95	2.96	2.39	2.07	3.50	1.71	1.54
20-24	2.62	2.50	2.24	2.63	2.53	2.30	2.60	2.27	2.14
25-29	3.02	2.72	2.24	3.03	2.76	2.46	2.92	2.47	2.04
30-34	3.73	3.34	2.59	3.82	3.36	2.82	2.94	3.13	2.45
35-39	4.71	4.06	2.95	4.79	4.15	3.29	4.26	3.43	2.70
40-44	4.88	4.84	3.18	4.97	4.94	4.28	4.39	4.02	2.76
45-49	5.57	5.41	3.52	5.61	5.57	5.00	5.26	4.42	3.00
Total 15-49	4.36	4.49	2.45	4.41	3.55	2.64	4.01	3.06	2.36

TABLE H1: IDEAL FAMILY SIZE AMONG CURRENTLY MARRIED WOMEN AGED 15-49 BY AGE AND RURAL-URBAN RESIDENCE

	National	Rural	Total	Urban Bangkok	Provincial
15-19	2.44	2.51	2.00	1.89	2.11
20-24	2.56	2.61	2.28	2.22	2.37
25-29	2.63	2.69	2.36	2.28	2.53
30-34	2.94	3.03	2.54	2.45	2.69
35-39	3.16	3.25	2.74	2.64	2.92
40-44	3.39	3.50	2.81	2.70	3.00
45-49	3.46	3.55	2.93	2.89	2.98
Total 15-49	2.93	2.93	2.54	2.46	2.68

TABLE H2: IDEAL FAMILY SIZE AMONG CURRENTLY MARRIED WOMEN AGED 15-49 BY AGE AND REGION OF RESIDENCE

	North	Northeast	South	Total	Central Without Bangkok
15-19	2.20	2.52	3.44	2.11	2.17
20-24	2.24	2.74	3.28	2.34	2.39
25-29	2.24	2.76	3.53	2.45	2.53
30-34	2.45	3.16	3.75	2.70	2.82
35-39	2.82	3.44	3.61	2.91	3.04
40-44	2.78	3.64	4.16	3.10	3.28
45-49	2.71	3.65	4.37	3.29	3.41
Total 15-49	2.47	3.14	3.74	2.70	2.81

TABLE H3: IDEAL FAMILY SIZE AMONG CURRENTLY MARRIED WOMEN AGED 15-49 BY AGE, NUMBER OF YEARS OF SCHOOLING AND RURAL-URBAN RESIDENCE

	National			Rural			Urban		
	<4	4	5+	<4	4	5+	<4	4	5+
15-19	3.14	2.44	2.12	3.19	2.48	2.22	2.50	2.10	1.77
20-24	2.67	2.60	2.35	2.70	2.64	2.40	2.53	2.26	2.26
25-29	2.87	2.65	2.35	2.87	2.69	2.45	2.92	2.40	2.25
30-34	3.30	2.99	2.38	3.31	3.02	2.51	3.19	2.71	2.30
35-39	3.44	3.17	2.59	3.50	3.23	2.69	3.11	2.78	2.52
40-44	3.53	3.43	2.44	3.59	3.48	2.89	3.20	2.94	2.27
45-49	3.49	3.48	2.87	3.51	3.56	3.67	3.26	2.89	2.59
Total 15-49	3.31	2.95	2.39	3.34	3.00	2.48	3.09	2.60	2.31

TABLE I 1: NUMBER OF MODERN CONTRACEPTIVE METHODS KNOWN WITHOUT PROMPTING AMONG CURRENTLY MARRIED WOMEN AGED 15-49, BY AGE AND RURAL-URBAN RESIDENCE

Age and Residence	Number of Methods Known									Total	\bar{X}	N
	0	1	2	3	4	5	6	7	8+			
<u>Whole Kingdom</u>												
15-19	6.2	10.9	11.2	18.1	19.2	19.6	13.0	1.8	0.0	100.0	3.5	276
20-24	2.6	6.2	11.3	15.2	22.0	22.2	16.6	3.3	0.6	100.0	4.0	1082
25-29	1.9	4.7	9.3	16.8	23.5	22.1	18.4	2.9	0.4	100.0	4.1	1399
30-34	2.9	5.7	9.1	15.5	23.7	22.6	16.6	3.0	0.9	100.0	4.1	1292
35-39	2.0	7.5	10.3	17.8	21.5	23.6	14.5	1.8	0.1	100.0	3.9	1028
40-44	4.5	8.6	12.3	17.7	23.7	19.7	10.9	2.0	0.6	100.0	3.6	943
45-49	8.1	12.2	13.7	19.3	20.8	18.0	6.4	1.5	0.0	100.0	3.2	607
15-49	3.5	7.1	10.7	16.9	22.5	21.5	14.8	2.5	0.5	100.0	3.9	6627
<u>Rural</u>												
15-19	6.3	10.8	10.8	16.3	18.7	22.0	13.8	1.3	0.0	100.0	3.6	240
20-24	2.9	6.9	11.4	14.8	20.7	22.0	17.6	3.2	0.5	100.0	4.0	911
25-29	2.1	5.1	9.2	15.9	22.5	22.9	19.0	3.0	0.3	100.0	4.1	1129
30-34	3.2	6.1	9.2	15.5	23.8	22.8	16.0	2.6	0.8	100.0	4.0	1051
35-39	3.2	7.9	11.0	17.6	21.3	22.4	14.5	2.0	0.1	100.0	3.8	839
40-44	4.8	9.4	11.8	16.9	23.6	19.3	11.3	2.4	0.5	100.0	3.6	788
45-49	8.9	12.0	13.2	18.0	21.1	18.2	7.0	1.6	0.0	100.0	3.2	516
15-49	3.8	7.5	10.7	16.3	22.1	21.7	15.0	2.5	0.4	100.0	3.9	5474

TABLE 11 (Continued)

Age and Residence	Number of Methods Known										Total	\bar{X}	N
	0	1	2	3	4	5	6	7	8+				
<u>Provincial</u>													
<u>Urban</u>													
15-19	5.6	11.1	16.7	27.7	11.1	5.6	11.1	11.1	0.0	100.0	3.4	18	
20-24	2.7	4.1	5.4	17.6	27.0	25.6	10.8	5.4	1.4	100.0	4.2	74	
25-29	2.2	5.4	10.8	18.2	27.9	14.0	16.1	4.3	1.1	100.0	4.0	93	
30-34	3.6	3.6	8.3	13.1	29.8	22.6	11.9	7.1	0.0	100.0	4.1	84	
35-39	4.7	10.9	9.4	18.8	24.9	15.6	14.1	1.6	0.0	100.0	3.6	64	
40-44	5.6	5.6	9.3	22.1	20.4	25.9	11.1	0.0	0.0	100.0	3.7	54	
45-49	7.3	17.1	12.2	26.8	22.0	12.2	2.4	0.0	0.0	100.0	2.9	41	
15-49	4.0	7.0	9.3	18.9	25.5	18.9	11.9	4.0	0.5	100.0	3.8	428	
<u>Bangkok</u>													
15-19	5.6	11.1	11.1	33.3	33.3	0.0	5.6	0.0	0.0	100.0	3.0	18	
20-24	0.0	1.0	14.4	17.5	30.0	21.6	12.4	3.1	0.0	100.0	4.1	97	
25-29	0.0	1.7	9.0	22.2	28.2	20.9	15.8	1.1	1.1	100.0	4.2	177	
30-34	0.0	4.5	8.9	16.6	19.7	21.0	23.0	3.8	2.5	100.0	4.4	157	
35-39	0.0	3.2	6.4	18.4	20.8	36.8	14.4	0.0	0.0	100.0	4.2	125	
40-44	1.0	4.0	17.8	21.8	25.7	19.8	7.9	0.0	2.0	100.0	3.7	101	
45-49	0.0	10.0	20.0	26.0	18.0	20.0	4.0	2.0	0.0	100.0	3.4	50	
15-49	0.3	3.6	11.3	20.1	24.4	23.0	14.5	1.7	1.1	100.0	4.1	725	

TABLE I 2: NUMBER OF MODERN CONTRACEPTIVE METHODS KNOWN WITH PROMPTING AMONG CURRENTLY MARRIED WOMEN AGED 15-49 BY AGE AND RURAL-URBAN RESIDENCE

Age and Residence	Number of Methods Known									Total	\bar{X}	N
	0	1	2	3	4	5	6	7	8+			
<u>Whole Kingdom</u>												
15-19	0.4	1.8	1.8	2.9	2.9	6.5	22.8	49.3	11.6	100.0	6.3	276
20-24	0.2	0.7	0.6	1.3	2.2	6.9	21.0	52.8	14.3	100.0	6.6	1082
25-29	0.4	0.4	0.4	1.6	3.1	4.4	16.4	53.9	19.4	100.0	6.7	1399
30-34	0.6	0.7	1.0	1.2	1.9	5.8	16.6	49.2	23.0	100.0	6.7	1292
35-39	0.4	0.9	1.4	1.3	3.7	6.9	17.8	46.3	21.5	100.0	6.6	1028
40-44	0.6	1.2	1.9	1.9	3.5	7.2	21.1	43.2	19.4	100.0	6.4	943
45-49	1.6	1.5	2.0	2.8	5.4	13.3	20.4	37.8	15.2	100.0	6.1	607
15-49	0.6	0.8	1.1	1.6	3.1	6.8	18.7	48.4	18.9	100.0	6.6	6627
<u>Rural</u>												
15-19	0.4	2.1	1.7	2.9	2.9	7.1	23.8	48.7	10.4	100.0	6.3	240
20-24	0.2	0.9	0.8	1.2	2.5	7.9	22.8	51.3	12.4	100.0	6.5	911
25-29	0.5	0.4	0.4	1.7	3.3	4.8	18.9	53.8	16.2	100.0	6.6	1129
30-34	0.8	0.9	1.0	1.2	2.2	6.8	18.8	49.3	19.0	100.0	6.6	1051
35-39	0.5	1.1	1.5	1.4	4.4	7.9	19.7	46.0	17.5	100.0	6.5	839
40-44	0.8	1.3	2.3	2.2	4.1	7.7	23.0	42.4	16.2	100.0	6.3	788
45-49	1.9	1.6	2.1	2.7	6.2	13.8	20.3	38.0	13.4	100.0	6.0	516
15-19	0.7	1.0	1.2	1.7	3.5	7.5	20.6	48.0	15.8	100.0	6.5	5474

TABLE I 2 (Continued)

Age and Residence	Number of Methods Known									Total	\bar{X}	N
	0	1	2	3	4	5	6	7	8+			
<u>Provincial Urban</u>												
15-19	0.0	0.0	5.6	5.6	5.6	0.0	22.2	55.4	5.6	100.0	6.2	18
20-24	0.0	0.0	0.0	1.4	1.4	2.7	16.2	49.9	28.4	100.0	7.0	74
25-29	0.0	1.1	1.1	3.2	5.4	3.2	7.5	52.7	25.8	100.0	6.7	93
30-34	0.0	0.0	2.4	0.0	0.0	2.4	10.7	48.8	35.7	100.0	7.1	84
35-39	0.0	0.0	1.6	0.0	1.6	3.1	15.6	48.4	29.7	100.0	7.0	64
40-44	0.0	0.0	0.0	1.9	1.9	5.6	7.4	38.9	44.3	100.0	7.1	54
45-49	0.0	2.4	2.4	2.4	2.4	9.8	24.4	36.7	19.5	100.0	6.3	41
15-49	0.0	0.5	1.4	1.6	2.3	3.7	13.1	47.7	29.7	100.0	6.9	428
<u>Bangkok</u>												
15-19	0.0	0.0	0.0	0.0	0.0	5.6	11.1	50.0	33.3	100.0	7.1	18
20-24	0.0	0.0	0.0	2.1	2.1	1.0	7.2	68.1	21.6	100.0	7.0	97
25-29	0.0	0.0	0.0	0.6	0.6	2.3	5.6	54.7	36.2	100.0	7.2	177
30-34	0.0	0.0	0.0	1.9	0.6	1.3	5.1	48.4	42.7	100.0	7.3	157
35-39	0.0	0.0	0.0	0.8	0.0	2.4	6.4	46.4	44.0	100.0	7.3	125
40-44	0.0	1.0	0.0	0.0	0.0	4.0	13.9	50.4	30.7	100.0	7.0	101
45-49	0.0	0.0	0.0	4.0	0.0	12.0	18.0	36.0	30.0	100.0	6.7	50
15-49	0.0	0.1	0.0	1.2	0.3	2.9	8.0	51.8	35.7	100.0	7.2	725

TABLE J1: PERCENT EVER-USING A CONTRACEPTIVE METHOD AMONG CURRENTLY MARRIED WOMEN AGED 15-49 BY AGE AND RURAL-URBAN RESIDENCE

	National	Rural	Total	Urban	
				Bangkok	Provincial
15-19	51.8	48.8	72.2	77.8	66.7
20-24	72.9	71.2	81.9	81.4	82.4
25-29	83.5	82.9	85.9	87.6	82.8
30-34	84.5	83.1	90.9	89.8	92.9
35-39	84.8	83.8	89.4	92.8	82.8
40-44	77.5	76.1	84.5	82.2	88.9
45-49	56.3	53.3	73.6	78.0	68.3
Total 15-49	77.5	75.9	85.3	86.5	83.4

TABLE J2: PERCENT EVER-USING A CONTRACEPTIVE METHOD AMONG CURRENTLY MARRIED WOMEN AGED 15-49 BY AGE AND REGION OF RESIDENCE

	North	Northeast	South	Central	
				Total	Without Bangkok
15-19	54.6	43.5	25.0	71.6	69.8
20-24	83.8	65.6	54.0	79.6	78.9
25-29	91.5	81.1	66.2	86.5	86.0
30-34	89.7	83.4	66.7	89.4	89.1
35-39	87.4	82.9	69.8	90.4	89.2
40-44	73.0	79.0	63.0	84.2	85.0
45-49	56.0	49.5	43.0	69.2	66.2
Total 15-49	81.9	74.0	60.7	84.3	83.3

TABLE J3: PERCENT EVER-USING A CONTRACEPTIVE METHOD AMONG CURRENTLY MARRIED WOMEN AGED 15-49 BY AGE, NUMBER OF YEARS OF SCHOOLING AND RURAL-URBAN RESIDENCE

	National			Rural			Urban		
	<4	4	5+	<4	4	5+	<4	4	5+
15-19	44.8	49.5	62.7	44.4	47.3	56.5	50.0	66.7	84.6
20-24	76.6	69.8	82.3	74.7	69.3	79.0	86.7	74.3	87.8
25-29	80.3	82.8	89.1	80.0	82.6	88.9	83.3	83.6	89.3
30-34	75.3	84.6	92.7	75.2	83.9	91.3	76.5	90.2	93.4
35-39	80.9	85.2	88.7	80.1	84.4	87.5	85.2	90.5	89.6
40-44	70.9	80.0	83.3	68.8	79.4	72.2	81.8	84.1	87.5
45-49	52.3	57.0	82.6	50.8	54.6	66.7	65.2	72.0	88.2
Total 15-49	70.5	77.6	85.8	69.2	76.9	81.4	79.3	83.1	89.8

TABLE K1: PERCENT CURRENTLY USING A CONTRACEPTIVE METHOD AMONG CURRENTLY MARRIED WOMEN AGED 15-49 BY AGE AND RURAL-URBAN RESIDENCE

	National	Rural	Urban		
			Total	Bangkok	Provincial
15-19	29.0	27.1	41.7	44.4	38.9
20-24	47.5	46.1	55.0	50.5	60.8
25-29	60.4	60.8	58.9	58.2	60.2
30-34	67.7	67.0	71.0	69.4	73.8
35-39	68.6	66.9	76.2	78.4	71.9
40-44	56.4	53.7	70.3	72.3	66.7
45-49	32.3	28.9	51.7	52.0	51.2
Total 15-49	56.5	55.0	64.1	64.3	64.8

TABLE K2: PERCENT CURRENTLY USING A CONTRACEPTIVE METHOD AMONG CURRENTLY MARRIED WOMEN AGED 15-49 BY AGE AND REGION OF RESIDENCE

	North	Northeast	South	Central	
				Total	Without Bangkok
15-19	40.0	19.4	12.5	40.7	39.7
20-24	62.2	40.0	36.3	49.7	49.4
25-29	74.4	57.8	38.3	62.2	64.1
30-34	73.8	65.3	48.8	73.6	75.7
35-39	70.5	65.3	55.8	75.0	73.3
40-44	48.0	55.2	44.4	66.5	63.9
45-49	29.4	28.0	20.3	43.3	40.4
Total 15-49	62.5	52.2	41.2	62.8	62.1

TABLE K3: PERCENT CURRENTLY USING CONTRACEPTIVE METHODS AMONG CURRENTLY MARRIED WOMEN AGED 15-49 BY AGE, NUMBER OF YEARS OF SCHOOLING AND RURAL-URBAN RESIDENCE

	National			Rural			Urban		
	<4	4	5+	<4	4	5+	<4	4	5+
15-19	13.8	26.1	45.8	11.1	25.8	41.3	50.0	28.6	61.5
20-24	50.0	45.9	51.8	49.4	45.3	47.8	53.3	51.4	58.5
25-29	56.7	61.7	55.9	54.8	61.9	57.6	75.0	61.0	54.5
30-34	60.7	67.8	73.8	60.9	67.5	75.4	58.8	70.6	73.0
35-39	61.8	69.7	72.2	60.3	68.3	68.8	70.4	79.0	74.6
40-44	52.7	56.6	69.7	49.4	55.3	61.1	70.4	68.3	72.9
45-49	32.6	30.4	56.5	29.7	28.3	33.3	56.5	44.0	64.7
Total 15-49	50.7	57.0	61.2	48.7	56.2	56.6	65.0	62.6	65.5

LI. DATA FOR BREAST FEEDING GRAPH FOR CPS REPORT

Cumulative Proportion Still Breast Feeding from Life Table Analysis

Months Sincelast	Whole Kingdom	Rural	Urban
1	0.9087	0.9248	0.8363
2	0.8447	0.8912	0.6352
3	0.8187	0.8750	0.5646
4	0.7890	0.8532	0.5004
5	0.7701	0.8370	0.4700
6	0.7556	0.8236	0.4509
9	0.7064	0.7833	0.3653
12	0.6595	0.7318	0.3384
15	0.5407	0.6128	0.2275
18	0.4587	0.5203	0.1914
21	0.3424	0.3926	0.1293
24	0.2943	0.3322	0.1293

M1 : DISTRIBUTION OF CURRENTLY MARRIED USERS AGED 15-49 BY AGE AND METHOD CURRENTLY USED.

Age	Pill	Condom	IUD	Female Steriliz.	Male Steriliz.	Injectables	Other
15-19	66.2	6.3	3.8	2.5	0.0	18.7	2.5
20-24	54.4	4.5	5.5	11.7	1.8	18.2	3.9
25-29	27.5	3.8	5.4	29.0	4.0	15.1	4.5
40-44	22.7	1.8	6.0	41.5	10.9	7.9	5.3
45-49	22.4	0.6	15.3	42.8	10.2	5.6	3.1

APPENDIX D
NOTE ON THE INDIRECT ESTIMATION OF INFANT
MORTALITY RATES

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NOTE ON THE INDIRECT ESTIMATION OF INFANT MORTALITY RATES

The proportion dead among children ever born to women in a particular age group can be considered as an approximation of the probability of dying between birth and certain ages of childhood. Specifically, Brass has shown that the proportion dead of children born to women 20-24 is roughly equivalent to the probability of dying between birth and age 2 and the proportions dead for children of women 25-29 and 30-34 are equivalent to the probabilities of dying before ages 3 and 5, respectively. The theory behind the method is that children of women 20-24 were born, on average, two years earlier and children of women 25-29 were born on average, three years earlier. The exact length of exposure to the risk of dying depends on the age pattern of fertility--if childbearing begins early, then the children of women 20-24 will have had more than two years in which to survive or die; if childbearing begins later, they may have had an exposure period of fewer than two years.

Several variations of the method exist, differing only in their choice of a fertility model. The one used here is a modification of a procedure developed by Trussell (1975) and described in NAS (1981). Calculations were restricted to data from women aged 20-34 since births to women under 20 are subject to higher than average mortality and women above age 35 are prone to underreport their dead children. The rates reported in the text are the simple averages of the rates estimated for women 20-24, 25-29 and 30-34.

It should be noted that raw data from CPS1 are somewhat abnormal in that the proportions dead *decrease* slightly with age of mother, whereas since children of older mothers have had a longer period of exposure to the risk of dying, one expects the proportions dead to *rise* with age of mother. This pattern might be due to sampling variation or to some bias in reporting. The pattern in the CPS2 data is more plausible.

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**CALCULATIONS IN ESTIMATING INFANT MORTALITY RATES FROM DATA ON
THE PROPORTIONS DEAD AMONG CHILDREN EVER BORN, WHOLE KINGDOM,
RURAL AND URBAN AREAS, 1978 AND 1981**

CPS 1		Whole Kingdom					CPS 2				
Age Group of Mother	Age a	Proportion Dead Among Children Ever Born	Adjustment Factors K_a	Probability of Dying From Birth q_a	Probability of Dying Between Birth and Age 1 (Infant Mortality Rate) q_1	Model Life Table Level	Proportion Dead Among Children Ever Born	Adjustment Factors K_a	Probability of Dying Between Birth and Age a q_a	Probability of Dying Between Birth and Age 1 (Infant Mortality Rate) q_1	Model Life Table Level
20-24	2	.0791	1.0196	.0807	.0666	17.6	.0540	1.0130	.0547	.0467	19.7
25-29	3	.0749	.9698	.0726	.0549	18.8	.0714	.9451	.0675	.0515	19.2
30-34	5	.0741	1.0022	.0743	.0499	19.4	.0876	.9728	.0852	.0562	18.7
$P_1/P_2 = .1453$		$P_2/P_3 = .4358$		Average = .0571			$P_1/P_2 = .1361$		$P_2/P_3 = .4829$		Average = .0515
<u>Rural</u>											
20-24	2	.0868	1.0162	.0882	.0722	17.0	.0589	1.0165	.0599	.0508	19.3
25-29	3	.0856	.9664	.0824	.0617	18.1	.0737	.9449	.0696	.0530	19.0
30-34	5	.0811	.9990	.0810	.0538	18.9	.0969	.9713	.0941	.0613	18.1
$P_1/P_2 = .1476$		$P_2/P_3 = .4427$		Average = .0626			$P_1/P_2 = .1310$		$P_2/P_3 = .4829$		Average = .0550
<u>Bangkok</u>											
20-24	2	.0385	1.0427	.0401	.0355	21.1	.0354	1.0078	.0357	.0320	21.5
25-29	3	.0182	.9818	.0179	.0161	23.7	.0475	.9557	.0454	.0366	20.9
30-34	5	.0309	1.0094	.0312	.0178	22.4	.0320	.9884	.0316	.0252	22.4
$P_1/P_2 = .1218$		$P_2/P_3 = .4106$		Average = .0231			$P_1/P_2 = .1514$		$P_1/P_3 = .4636$		Average = .0313
<u>Total Urban</u>											
				20-24	2		.0271	.9930	.0269	.0248	22.5
				25-29	3		.0588	.9444	.0555	.0435	20.1
				30-34	5		.0313	.9791	.0306	.0244	22.5
				Average = .0209			$P_1/P_2 = .1637$		$P_2/P_3 = .4866$		

Note : Since CPS1 excluded single women, the average parities (P) were calculated by multiplying the average parities for ever-married women by the proportion ever-married as reported in CPS1 . There is no "Total Urban" block for CPS1 because Bangkok comprised the total urban portion of that survey. Finally, North model life tables were used in the calculations.

APPENDIX E
THAILAND CPS 2 QUESTIONNAIRE

INDIVIDUAL QUESTIONNAIRE

SECTION I. BACKGROUND CHARACTERISTICS

101. It is very important in this study to know your exact age. How old were you on your last birthday?

YEARS

102. In what month and year were you born?

MONTH _____ YEAR 19

AFTER EXAMINING THE RESPONSES IN Q.101 AND 102 CAREFULLY AND PROBING AS NEEDED, ENTER THE RESPONDENT'S AGE BELOW. ESTIMATE THE RESPONDENT'S AGE IF IT CANNOT BE DETERMINED BY PROBING.

AGE YEARS

103. CIRCLE THE APPROPRIATE CODE FOR THE ACTION YOU TOOK IN DETERMINING THE RESPONDENT'S AGE:

- 1 Q. 101 and Q. 102 both answered. Verified responses were consistent.
- 2 Q. 101 and Q. 102 both answered. Responses were not consistent and age determined by probing.
- 3 One or both age questions were not answered initially. Age determined by probing using calendar guide.
- 4 No age response given. Age estimated because it could not be determined by probing. Age derived from household registration.
- 5 No age response given. Age estimated because it could not be determined by probing.

104. What is your marital status? Are you currently married, widowed, divorced, separated or single?

- 1 Married
- 2 Living or visiting relationship
- 3 Separated
- 4 Divorced
- 5 Widowed

IF RESPONDENT IS SINGLE OR OVER 49 YEARS TERMINATE INTERVIEW. THANK RESPONDENT FOR HER TIME AND FOLLOW INSTRUCTIONS FOR SELECTING THE NEXT RESPONDENT.

Previous Page Blank

105. Have you ever attended school?

- 1 Yes
- 2 No --- (SKIP TO Q. 107)

106. What is the highest grade you passed at school or college?

CIRCLE LEVEL AND GRADE

Level	GRADE									
	0	1	2	3	4	5	6	7	8	9
1 Elementary										
2 Secondary										
3 College										
4 Other										

(Specify)

107. What is your occupation?

- 1 Farming
- 2 Animal husbandry and/or fishing
- 3 Professional
- 4 Government worker
- 5 Trade
- 6 Business (self-employed)
- 7 Skilled and semi-skilled labor
- 8 Unskilled labor
- 9 Other
- 10 Housewife
- 11 Student
- 12 Business (employed)

108. Where does your family get drinking water?

- 1 Open dug well
- 2 Dug well with cover and handpump
- 3 Drilled well
- 4 Piped
- 5 Pond
- 6 River or klong
- 7 Rainwater
- 8 Bottled water
- 9 Other _____

(Specify)

109. Where does your family get water for domestic use like washing and cooking?

- 1 Open dug well
- 2 Dug well with cover and handpump
- 3 Drilled well
- 4 Piped
- 5 Pond

- 6 River or klong
- 7 Rainwater
- 8 Bottled water
- 9 Other _____

(Specify)

110. Normally, when a member of your household gets sick, where do you seek care?

- 1 Sub-district health center
- 2 District health center (Amphor hospital)
- 3 Hospital
- 4 Private doctor or clinic
- 5 Para-medical personnel
- 6 Traditional practitioner
- 7 Drugstore
- 8 Village health volunteer
- 9 Medication from other sources (not drugstore)
- 10 Self-medicated/no treatment
- 11 Other

SECTION II FERTILITY

201. Now I would like to ask some questions about childbearing. When did you have your last menstrual period?

- 1 Less than 1 month ago --- (SKIP TO Q. 203)
- 2 30 - 60 days ago
- 3 Two to 9 months ago
- 4 More than 9 months ago

220. Are you pregnant now?

- 1 Yes
- 2 No
- 3 Don't know/not sure

203. Have you ever had a live birth?

- 1 Yes
- 2 No --- (SKIP TO Q. 215)

204. How many live births have you had? Please be sure you include all the children you have given birth to, even if some lived only a short time.

NUMBER

205. How many of your children are living now?

NUMBER

PROBE: TO INCLUDE CHILDREN LIVING AWAY FROM HOME

IF THE RESPONDENT HAS NO LIVING CHILDREN, ENTER 00 (ZERO) FOR Q. 205 AND SKIP TO Q. 207. OTHERWISE GO TO Q. 206.

206. How many are boys and how many are girls?

BOYS

GIRLS

SUM THE NUMBER OF BOYS AND GIRLS AND MAKE SURE THAT IT AGREES WITH THE TOTAL NUMBER OF LIVING CHILDREN IN Q. 205.

207. When did you have your last live birth? Please give me the date.

MONTH _____ YEAR 19

PROBE AND VERIFY BY ASKING:

- How old is your last child?

MONTHS YEARS

208. Is your last born child still living?

- 1 Yes
- 2 No

IF THE LAST LIVE BIRTH OCCURRED BEFORE APRIL 1979, GO TO Q. 214.

209. Are you currently or have you ever-breastfed that child?

- 1 Never..... }--- (SKIP TO Q. 211)
- 2 Currently breastfeeding }
- 3 Breastfed but not currently

210. How long did you breastfed that child?

_____Months

211. At the time your child was still being fed milk, did you feed the child anything else?

- 1 Yes
- 2 No --- (SKIP TO Q. 214)
- 3 Don't know/not sure (Child fed by someone else)

212. What did you feed the child? (More than one answer permissible)

- 1 Bananas
- 2 Other Fruit
- 3 Rice
- 4 Baby Food
- 5 Rice and Bananas
- 6 Egg and Rice
- 7 Other _____

(Specify)

213. How many weeks old was the child when you started supplementary feeding?

_____ WEEKS

(For women who already have children)

214. Do you want to have *more* children in the future (in addition to the one you are expecting)?
- 1 Yes (SKIP TO Q. 216)
 - 2 No
 - 8 Don't know/not sure }--- (SKIP TO Q.218)

(For women who do not have any children)

215. Do you want to have children in the future (in addition to the one you are expecting)?
- 1 Yes
 - 2 No
 - 8 Don't know/ not sure } (SKIP TO Q.301)

216. How many (more) children do you want to have in the future?

NUMBER

217. If it were entirely up to you, when would you prefer to have your next (first) child?

- 1 As soon as possible
- 2 Within one year (seeking pregnancy now)
- 3 Within two years
- 4 After 2 years
- 5 Whenever it happens/when God wants
- 6 Depends on economic situation
- 7 Other _____
(Specify)
- 8. Don't know/not sure

218. Before you became pregnant the last time, did you want to have more children?

- 1 Yes
- 2 No
- 3 Never pregnant
- 8 Don't know/not sure

219. If you could have had exactly the number of children you wanted, how many would you have had?

NUMBER

SECTION III. FERTILITY REGULATION

301. Now let us talk about family planning. There are various ways a couple can delay the next pregnancy or avoid having children if they do not want them. Do you know or have you heard of any such methods?

1. Yes
2. No --- (SKIP TO Q. 303)

RECORD RESPONSES TO Q. 302-304 IN TABLE I BELOW.

302. What family planning methods do you know? (PROBE: Any Other?)

CIRCLE CODE 1 (YES) IN COLUMN A FOR EACH METHOD THE RESPONDENT MENTIONS.

303. FOR EACH METHOD NOT CIRCLED IN COLUMN A ASK: Just to be sure, have you ever heard of _____?
(Method)

CIRCLE RESPONSE IN COLUMN B

IF RESPONDENT DOES NOT KNOW ANY METHOD (NO "YES" CODES CIRCLED IN COLUMN A OR B) CIRCLE 90 IN COLUMN D AND SKIP TO SECTION V.

304. FOR EACH METHOD CIRCLED "YES" IN COLUMN A OR COLUMN B ASK:
Have you (*has your spouse) ever used _____?
(Method)

CIRCLE RESPONSE IN COLUMN C

TABLE I

	A KNOWLEDGE (UNPROMPTED) Q. 302	B KNOWLEDGE (PROMPTED) Q. 303	C EVER USE Q. 304	D CURRENT USE Q. 306 OR Q. 307
Pill	1 Yes	3 Yes 2 No	3 Yes 2 No	01 Pill
*Condom	1 Yes	3 Yes 2 No	3 Yes 2 No	02 Condom
Vaginal Methods	1 Yes	3 Yes 2 No	3 Yes 2 No	03 Vaginal Methods
Injections	1 Yes	3 Yes 2 No	3 Yes 2 No	04 Injections
I. U. D.	1 Yes	3 Yes 2 No	3 Yes 2 No	05 I.U.D.
Female Sterilization	1 Yes	3 Yes 2 No	3 Yes 2 No	06 Female Sterilization
*Male Sterilization	1 Yes	3 Yes 2 No	3 Yes 2 No	07 Male Steriliza tion
Induced Abortion	1 Yes	3 Yes 2 No	3 Yes 2 No	08 Abortion
Rhythm	1 Yes	3 Yes 2 No	3 Yes 2 No	09 Rhythm
Withdrawal	1 Yes	3 Yes 2 No	3 Yes 2 No	10 Withdrawal
Other _____ (Specify)	1 Yes		3 Yes 2 No	11 Other _____ (Specify)
				90 Not Using

305. Are you or your spouse currently using some family planning method or doing something to avoid a pregnancy?

- 1 Yes --- (SKIP TO Q. 307)
- 2 No.

306. Have you or your spouse used any method in the last month?

- 1 Yes
- 2 NO (CIRCLE CODE 90 (NOT USING) IN COLUMN **D** AND SKIP TO-Q 315)

307. What is (was) that method?

METHOD _____

IF METHOD 06 OR 07 IS CIRCLED IN COLUMN **D** OF TABLE I ABOVE, SKIP TO Q. 312, ; OTHERWISE GO TO Q.318

308. If it were entirely up to you, what method would you prefer to use *now* -- your present method or some other method?

- 1 Present method
 - 2 No Method.....
 - 3 Some other method
- } ---(SKIP TO Q.311)

309. What method would you rather use?

- 01 Pill
- 02 Condom
- 03 Vaginal Methods
- 04 Injections
- 05 I.U.D.
- 06 Female Sterilization
- 07 Male Sterilization
- 08 Abortion
- 09 Rhythm
- 10 Withdrawal
- 11 Other _____

(Specify)

12 Uncertain/don't know --- (SKIP TO Q. 311)

310. Why are you not using that method now? (Allow two responses)

- 1 Side effects
- 2 Health problems
- 3 Anxiety/nervousness, loss of sleep
- 4 Want to use a more effective method
- 5 Fear of abnormalities and fear of illness, e.g., cancer
- 6 Inconvenient (problem to use)
- 7 Inconvenient (problem to get)
- 9 Doctor recommended new method
- 10 Husband doesn't like it
- 11 Want more children
- 12 Other
- 99 No reason/no response

311. Since you started using your present method, have you ever stopped using it (for more than one month)?

- | | | |
|------------------------|---|---------------------------|
| 1 Yes--- (PRCBE: Why)? | → | 1 Side effects |
| 2 No | | 2 Illness |
| 8 Don't know/not sure | | 3 Doctor's recommendation |
| | | 4 Husband dislikes |
| | | 5 Out of supplies |
| | | 6 Use multiple methods |

- 7. Forget
- 8. Sexually inactive
- 9. Other _____
(Specify)
- 99. Don't know/not sure

312. Counting from the start, how long have you been using your present method (without interruption this time)?

YEARS MONTHS WEEKS

313. Have you had any problems or difficulties with your present method?

- 1 Yes
- 2 No --- (SKIP TO SECTION IV)

314. What problems did you have? (allow two responses)

- 1 Medical problems
- 2 Health (general)
- 3 Nervous (general)
- 4 Visual problems
- 5 Headaches/dizzy
- 6 Emotional
- 7 Worry/sleeplessness
- 8 Abnormality in sex drive
- 9 Other
- 99 Don't know/not sure or no response

SKIP TO SECTION IV

Q. 315-318 FOR NON USERS, THOSE WHO CODED 90 IN COLUMN D OF TABLE I.

315. What is the main reason that you are not using any family planning method to avoid or postpone a pregnancy?

- 1 Pregnant/postpartum/post abortion
- 2 Doctor's recommendation
- 3 Subfecund
- 4 Infecund
- 5 Hysterectomy
- 6 Menopause
- 7 Fear of health effects
- 8 Husband does not allow

- 9 Friends a/o relatives recommend against
- 10 Sexually inactive
- 11 Couple residentially separated
- 12 Divorced or widowed
- 13 Desire pregnancy
- 14 Other
- 99 Don't know/not sure

316. Any other reasons?

- 1 Pregnant/postpartum/post abortion
- 2 Doctor's recommendation
- 3 Subfecund
- 4 Infecund
- 5 Hysterectomy
- 6 Menopause
- 7 Fear of health effects
- 8 Husband does not allow
- 9 Friends a/o relatives recommend against
- 10 Sexually inactive
- 11 Couple residentially separated
- 12 Divorced or widowed
- 13 Desire pregnancy
- 14 Other
- 99 Don't know/not sure

317. Suppose you have to use a method, which would you choose?

- 01 Pill
- 02 Condom
- 03 Vaginal methods
- 04 Injections
- 05 I.U.D.
- 06 Female Sterilization
- 07 Male Sterilization
- 08 Abortion
- 09 Rhythm
- 10 Withdrawal
- 11 Other _____
(Specify)
- 12 None/would not use --- (SKIP TO SECTION IV)
- 99 Uncertain/don't know

318. In general do you approve or disapprove of a couple using family planning?

- 1 Approve
- 2 Disapprove
- 3 It depends
- 8 Don't know/not sure

SECTION IV AVAILABILITY

401.

CIRCLE BELOW THE CURRENT METHOD CODE MARKED IN COLUMN **D** OF TABLE I THEN FOLLOW THE SKIP INSTRUCTIONS.

- 01 Pill
 - 02 Condom
 - 03 Vaginal methods
 - 04 Injections
 - 05 I.U.D.
 - 06 Female Sterilization
 - 07 Male Sterilization
 - 09 Rhythm.....
 - 10 Withdrawal....
 - 11 Other.....
 - 90 Not using.....
- (SKIP TO Q. 411)

402. Now I would like to ask you some questions about the source of your method. From where do (did) you (your spouse) get (*Method*)?

- 1 Tambol Health Center
- 2 District Health Center
- 3 Hospital
- 4 Private Clinic
- 5 Drugstore
- 6 Government health volunteer
- 7 Mechai volunteer
- 8 Local practitioner
- 9 Mobile unit (government)
- 10 MCH Center
- 11 Mechai office
- 12 Other
- 99 Don't know/not sure

403. How much time does it take to get from your home to this place?

HOURS

MINUTES

98 Don't know

404. How did you get to (source)?

- 1 Walk
- 2 Private vehicle
- 3 Public vehicle

405. Is it difficult or easy to get there?
- 1 Difficult/sometimes difficult
 - 2 Easy.....
 - 3 Don't know/not sure.....
- } ---(SKIP TO Q. 407)

406. Why is it difficult?
- 1 Bad road
 - 2 Too much travel time
 - 3 Requires an overnight stay
 - 4 Too expensive
 - 5 Other _____
- (Specify)
- 8 Don't know/not sure

407.

CORCLE BELOW THE CODE MARKED IN COLUM D OF TABLE I THEN FOLLOW THE SKIP INSTRUCTIONS.

- 01 Pill
 - 02 Condom
 - 03 Vaginal Methods
 - 04 Injections
 - 05 I.U.D.
 - 06 Female Sterilization
 - 07 Male Sterilization
- } --- (SKIP TO Q. 411)

408. Is the source for your method open at the time you consider most convenient for you?
- 1 Yes
 - 2 No
 - 8 Don't know/not sure

409. Have you always been able to get your method from your usual source?
- 1 Yes --- (SKIP TO Q. 411)
 - 2 No
 - 8 Don't know/not sure

410. What did you do when you couldn't obtain your method from your usual source?
- 1 Obtained method from another source
 - 2 Used another method
 - 3 Did not use family planning
 - 4 Other _____
- (Specify)

CROSS OUT (X) THE METHOD CODE IN THE FIRST COLUMN OF TABLE II BELOW IF:

1. THE CODE FOR THAT METHOD (CURRENTLY USED) IS CIRCLED IN COLUMN **D** OF TABLE I.
2. "DON'T KNOW" IS CIRCLED FOR THAT METHOD IN COLUMN **B** OF TABLE I

Now we are going to ask you some questions about sources for family planning methods. FOR EACH METHOD NOT CROSSED OUT ASK: From where would you obtain _____?
(Method)

CIRCLE THE RESPONSE IN TABLE II.

TABLE II

Method	01	02	03	04	05	06	07	08	09	10	11	12	don't know
01 Pill	01	02	03	04	05	06	07	08	09	10	11	12	99
02 Condom	01	02	03	04	05	06	07	08	09	10	11	12	99
03 Vaginal Methods	01	02	03	04	05	06	07	08	09	10	11	12	99
04 Injections	01	02	03	04	05	06	07	08	09	10	11	12	99
05 I.U.D.	01	02	03	04	05	06	07	08	09	10	11	12	99
06 Fem. Sterilization	01	02	03	04	05	06	07	08	09	10	11	12	99
07 Male Sterilization	01	02	03	04	05	06	07	08	09	10	11	12	99
08 Abortion	01	02	03	04	05	06	07	08	09	10	11	12	99

- | | |
|----------------------------------|-------------------------------|
| 01 = Tambol Health Center | 08 = Local Practitioner |
| 02 = District Health Center | 09 = Mobile Unit (government) |
| 03 = Hospital | 10 = MCH Center |
| 04 = Private Clinic | 11 = Mechai Office |
| 05 = Drugstore | 12 = Other |
| 06 = Government Health Volunteer | 99 = Don't know/not sure |
| 07 = Mechai Volunteer | |

IF NO SOURCE IS CIRCLED GO TO SECTION V

CIRCLED AT THE TOP OF TABLE III (▶) EACH SOURCE MENTIONED IN TABLE II.

LOOK AT Q. 401 CROSS OUT (X) IN TABLE III (▶) THE SOURCE MARKED IN Q. 402. IF NO OTHER SOURCE IS CIRCLED IN TABLE III, GO TO SECTION V.

ASK Q. 412-416 FOR EACH SOURCE *CIRCLED BUT NOT CROSSED OUT* AT THE TOP OF TABLE III (▶).

TABLE III

▶	01	02	03	04	05	06	07	08	09	10	11	12
412. You mentioned _____ How long would it take to get there? (WRITE HOURS AND MINUTES)	<hr/> Hrs. <hr/> Min.											
413. How would you get there?												
1. Walk	1	1	1	1	1	1	1	1	1	1	1	1
2. Private vehicle	2	2	2	2	2	2	2	2	2	2	2	2
3. Public vehicle	3	2	3	3	3	3	3	3	3	3	3	3
8. Don't know/not sure		8	8	8	8	8	8	8	8	8	8	8
414. Is it easy or difficult to get there?												
1. Difficult/sometimes difficult	1	1	1	1	1	1	1	1	1	1	1	1
2. Easy	2*	2*	2*	2*	2*	2*	2*	2*	2*	2*	2*	2*
8. Don't know	8*	8*	8*	8*	8*	8*	8*	8*	8*	8*	8*	8*
415. Why is it difficult?												
1. Road is bad	1	1	1	1	1	1	1	1	1	1	1	1
2. Too much travel time	2	2	2	2	2	2	2	2	2	2	2	2
3. Overnight stay	3	3	3	3	3	3	3	3	3	3	3	3
4. Expensive	4	4	4	4	4	4	4	4	4	4	4	4
5. Other	5	5	5	5	5	5	5	5	5	5	5	5
8. Don't know/not sure	8	8	8	8	8	8	8	8	8	8	8	8
416. Have you actually ever been to this place to obtain family planning information or services?												
1. Yes	1	1	1	1	1	1	1	1	1	1	1	1
2. No	2	2	2	2	2	2	2	2	2	2	2	2
GO TO Q. 412 FOR NEXT SOURCE. AFTER LAST SOURCE GO TO												

01 = Tambol Health Center
02 = District Health Center
03 = Hospital
04 = Private Clinic

05 = Drugstore
06 = Government Health Volunteer
07 = Mechai Volunteer
08 = Local Practitioner

09 = Mobile Unit (government)
10 = MCH Center
11 = Mechai Office
12 = Other

SECTION V MARITAL STATUS

501. As far as you know, is it physically possible for you and your spouse to have a child in the future if you decide to have one?

- 1 Yes
- 2 No --- (SKIP TO Q. 503)
- 3 Not applicable (because of marital status)
- 8 Don't know/not sure

502. Now I would like to ask you some questions about your spouse. Do you think that he wants to have more children in the future?

- 1 Yes
- 2 No
- 3 Not applicable (because of marital status)
- 8 Don't know/not sure

503. Do you think your spouse approves or disapproves of family planning?

- 1 Approves
- 2 Disapproves
- 3 Doesn't care
- 4 Says it depends
- 8 Don't know/not sure

504. What was the highest grade he passed at school or college?

CIRCLE LEVEL AND GRADE.

Level	GRADE								
1 Elementary	0	1	2	3	4	5	6	7	
2 Secondary		1	2	3	4	5	6		
3 College		1	2	3	4	5	6	7	8 9
00 Didn't attend school									
98 Don't know									

505. How old were you when you first married (entered a conjugal union)?

MONTH YEAR

THANK THE RESPONDENT AND TERMINATE THE INTERVIEW