



VARIATIONS IN THE INCIDENCE OF KNOWLEDGE AND USE OF CONTRACEPTION:

**A comparative analysis of World Fertility Survey results for
twenty developing countries**

UNITED NATIONS



Department of International Economic and Social Affairs

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FOREWORD

This study, undertaken by the Population Division of the Department of International Economic and Social Affairs of the United Nations Secretariat, is one in a series dealing with findings from the World Fertility Survey data. The present study of variations in the knowledge and use of contraception is based on the data from 20 developing countries which were available by the end of 1980.

This work is part of a programme of international comparative analysis of data from the World Fertility Survey that is being undertaken by the Population Division in fulfilment of recommendations by the United Nations Population Commission and with the financial support of the United Nations Fund for Population Activities.

Although the 20 countries included in this study cannot be considered fully representative of the developing world, a wide range of contraceptive use patterns has been observed. The findings seem to support the general views already held that the co-existence of development and family planning programmes provides a more favourable climate for the adoption of contraceptive use and fertility decline than the existence of either one separately.

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Explanatory notes

The following symbols have been used in the tables throughout the report:

Three dots (...) indicate that data are not available or are not separately reported

A dash (--) indicates that the amount is nil or negligible

A blank indicates that the item is not applicable

A minus sign (-) indicates a deficit or decrease, except as indicated

Details and percentages in tables do not necessarily add to totals, because of rounding.

The following apply throughout the text and tables:

A full stop (.) is used to indicate decimals

A slash (/) indicates a twelve-month period commencing in the first year shown, e.g., 1970/71

A hyphen (-) between dates representing years, e.g., 1971-1973, signifies the full period involved, including the beginning and end years

Reference to "tons" indicates metric tons, and to "dollars" (\$) United States dollars, unless otherwise stated

Annual rates of growth or change, unless otherwise stated, refer to annual compound rates.

INTRODUCTION

It has been well documented that many developing countries began a process of rapid demographic transition in the course of the 1970s. In many cases, that transition began at much lower levels of economic development than the demographic transition that occurred in the nineteenth century in Western Europe. The availability of modern birth control devices and the adoption of widespread family planning programmes in many of today's developing countries are two important aspects of current experience which have no historical parallel. These unique aspects of recent demographic experience have stimulated considerable interest in the study of contraceptive knowledge and use. This interest has resulted in the production of an enormous volume of retrospective survey data focusing on the measurement of contraceptive prevalence and factors influencing family building in developing as well as developed countries. These data derive principally from two sources: the knowledge, attitudes and practice of contraception (KAP) type of survey and more recently the national surveys carried out in connexion with the World Fertility Survey (WFS). The KAP surveys have been taken over a period of time without any common over-all direction, although recommendations and model questionnaires developed by the Population Council and the International Union for the Scientific Study of Population (IUSSP), in collaboration with the United Nations, 1/ provided some comparability across surveys in certain basic indicators. The WFS surveys, on the other hand, were concentrated in their timing in the mid and late 1970s and achieved much greater comparability than the KAP surveys both in the basic knowledge and use questions and with respect to important background variables.

The United Nations published a study in 1979 entitled Factors Affecting the Use and Non-use of Contraception: Findings from a Comparative Analysis of Selected KAP Surveys 2/ which summarized findings on the factors influencing the practice of contraception from 17 KAP studies covering women in 12 countries of Asia, Africa and Latin America. Since the publication of that study, comparable data for 20 developing countries representing a wide range of cultures as well as social and economic conditions have become available from the World Fertility Survey. The availability of these WFS data provides us with a unique opportunity to update our knowledge of patterns of, and factors affecting, contraceptive use in the context of a comparable survey instrument.

1/ See Population Council, A Manual for Surveys of Fertility and Family Planning: Knowledge, Attitudes and Practice (New York, 1970); Variables and Questionnaire for Comparative Fertility Surveys, Population Studies, No. 45 (United Nations publication, Sales No. E.69.XIII.4).

2/ United Nations publication, Sales No. E.79.XIII.6.

A factor of great importance for this analysis has been the willingness of governments of countries participating in the WFS to release the basic survey data to the United Nations for the purpose of comparative analysis. Although the data published in the WFS First Country Reports permit cross-cultural comparisons to be made, access to the original data has permitted attention to be given to several variables and combinations of variables which were not utilized in the published reports.

A. Data and objectives of the study

The present study of variations in the knowledge and use of contraception is based on data from 20 developing countries which were available by the end of 1980. The countries included in this study are as follows. The year that the survey was conducted is shown in parentheses after the name of the country. In Asia, the survey dates range from 1974 to 1978; in Latin America, they range from 1975 to 1977.

Africa: Kenya (1977)

Asia and Oceania: Bangladesh (1976), Fiji (1974), Indonesia (1976), Jordan (1976), Malaysia (1974), Nepal (1976), Pakistan (1975), Philippines (1978), Republic of Korea (1974), Sri Lanka (1975), Thailand (1975)

Latin America: Colombia (1976), Costa Rica (1976), Dominican Republic (1975), Guyana (1975), Jamaica (1975/76), Mexico (1976/77), Panama (1976), Peru (1977).

In this study, all the data were ultimately derived from the individual core questionnaire, and no material has yet been systematically analysed from some of the optional modules which also relate to family planning and contraceptive use but which were only available for a handful of the 20 countries for which data are analysed here. Attention has therefore been devoted entirely to contraceptive practice and no consideration has been given to either induced abortion, on the one hand, or other factors affecting fertility (such as abstinence for non-contraceptive purposes, sterility, breast-feeding etc.). It should be borne in mind that abortion, legal or illegal, may represent a widely utilized alternative to contraceptive use. Of the developing countries covered here, induced abortion is clearly most important in the Republic of Korea, where it is readily available in medically supervised circumstances. At the time of the survey in 1974, 30 per cent of ever-married women aged 15-49 reported having had at least one induced abortion, and the reported incidence had increased over time; 14 per cent of pregnancies reported by ever-married women had been terminated by induced abortion. ^{3/}

^{3/} These figures have not been corrected for underreporting. World Fertility Survey, The Korean National Fertility Survey 1974, First Country Report (Seoul, Korean Institute for Family Planning, 1977), pp. 130-137.

The present report has several major purposes: first, to document levels of knowledge and use of contraceptives in the developing countries for the mid 1970s. Secondly, to assess trends in levels of use and methods used on the basis of earlier, and even sometimes later, KAP surveys conducted in the same countries. Thirdly, to analyse differentials in contraceptive use as they relate to demographic factors such as age, number of living children and incidence of child death. Fourthly, to provide a critical assessment of the concept of so-called "unmet need" ^{4/} based on data relating contraceptive use to desire for more children. Fifthly, to analyse differentials in contraceptive use according to socio-economic background characteristics (i.e., education, urban/rural residence and occupation), changes in which are frequently associated with the demographic transition, and, finally, to assess patterns of change in contraceptive use differentials to the extent that data permit.

In analysing socio-economic differentials in contraceptive use, multiple regression analysis was used to isolate statistically, to the extent possible, the separate effect of the various socio-economic variables. For this analysis, the country data tapes were required and, therefore, only 17 countries could be included. Of the 20 countries in the study, no material could be presented on socio-economic differentials for Jamaica, Mexico or the Philippines. With respect to all other topics the data have been largely derived from the First Country Reports with the exception of Kenya where computations were made directly from the data tape, given the unavailability of the First Country Report at the time initial tabulations had to be made. ^{5/}

^{4/} See Charles F. Westoff, "The unmet need for birth control in five Asian countries", International Family Planning Perspectives and Digest, vol. 4, No. 1 (Spring 1978).

^{5/} Bangladesh: World Fertility Survey, Bangladesh Fertility Survey, 1975, First Report (Dacca, Ministry of Health and Population Control, 1978)

Colombia: Instituto Internacional de Estadística, Encuesta Nacional de Fecundidad, Colombia, 1976, Resultados Generales (Bogotá, 1977)

Costa Rica: Dirección General de Estadística y Censos, Encuesta Nacional de Fecundidad, 1976, Costa Rica (San José, 1978)

Dominican Republic: Consejo Nacional de Población y Familia, Encuesta Nacional de Fecundidad, Informe General (Santo Domingo, 1976)

Fiji: World Fertility Survey, Fiji Fertility Survey, 1974, Principal Report (Suva, Bureau of Statistics, 1976)

(foot-note continued on following page)

B. Relevant country characteristics

In analysing WFS data with respect to patterns of contraceptive use, it must be kept in mind that levels of use and observed differentials in use will be affected not just by demographic and socio-economic characteristics that vary from individual to individual at the micro level but also by overall levels of socio-economic development, on the one hand, and by the strength as well as distribution of family planning programme activities, on the other. The adoption of modern contraceptive methods requires not only the motivation but also the information, economic means and the accessibility of supplies. Therefore, in analysing intercountry differences in patterns of contraceptive use, it is important to bear in mind a country-by-country profile which ranks the countries included in relative terms

(footnote continued from previous page)

Guyana: World Fertility Survey, Guyana Fertility Survey, 1975, Country Report, vols. I and II (Ministry of Economic Development, 1979)

Indonesia: Central Bureau of Statistics and World Fertility Survey, Indonesia Fertility Survey, 1976, Principal Report, vols. I and II (Jakarta, 1978)

Jamaica: World Fertility Survey, Jamaica Fertility Survey, 1975/76, Country Report, vols. I and II (Kingston, Department of Statistics, 1979)

Jordan: World Fertility Survey, Jordan Fertility Survey, 1976, Principal Report, vols. I and II (Amman, Department of Statistics, 1979)

Malaysia: World Fertility Survey, Malaysian Fertility and Family Survey - 1974, First Country Report (Kuala Lumpur, National Family Planning Board, 1977)

Mexico: Secretaría de Programación y Presupuesto, Encuesta Mexicana de Fecundidad, Primer Informe Nacional, vols. I and II (Mexico, 1979)

Nepal: World Fertility Survey, Nepal Fertility Survey, 1976, First Report (Kathmandu, Ministry of Health, 1977)

Pakistan: World Fertility Survey, Pakistan Fertility Survey, First Report (Lahore, Population Planning Council of Pakistan, 1976)

Panama: Oficina de Estudios de Población, Encuesta de Fecundidad, Informe General, Panama, 1977 (1977)

Peru: Instituto Nacional de Planificación, Encuesta Nacional de Fecundidad de Peru, 1977-1978, Informe General (Lima, Dirección General de Censos, Encuesta y Demografía, Dirección de Demografía, 1979)

Philippines: World Fertility Survey, Republic of the Philippines Fertility Survey, 1978, First Report (Manila, National Census and Statistics Office, December 1979)

Republic of Korea: World Fertility Survey, The Korean National Fertility Survey, 1974, First Country Report (Seoul, Korean Institute for Family Planning, 1977)

Sri Lanka: Department of Census and Statistics, Ministry of Plan Implementation, World Fertility Survey, Sri Lanka, 1975, First Report (Colombo, 1978)

Thailand: World Fertility Survey, The Survey of Fertility in Thailand: Country Reports, vols. I and II (Bangkok, Institute of Population Studies, Chulalongkorn University, and Population Survey Division, National Statistical Office, 1977)

with respect to demographic and socio-economic levels as well as family planning programme strength. This information has been summarized in simple form in table 1. By reviewing the table, it is possible to group the countries represented here into several categories in terms of both programme strength and socio-economic development, which will be useful in the subsequent discussion of levels, trends and patterns of contraceptive use.

While the countries included in this report cannot be regarded as representative of all developing countries, the group does include countries of widely varying cultural and economic background. All of these countries were experiencing rapid population growth in the mid 1970s. The estimated rates of natural increase range from slightly under 2 per cent per year to over 3 per cent per year. ^{6/} Especially high rates of natural increase (3 per cent per year or more) are to be found in Jordan, Kenya, Mexico and Pakistan. In some other countries, a high level of mortality rather than a relatively low level of fertility currently acts to reduce the rate of natural increase below these very high levels.

In table 1, each country is ranked according to several indicators as either A, B or C, with A associated with low levels of development and high birth and death rates. At the other extreme, C represents, within this group of countries, those which have achieved in relative terms low birth and death rates and high levels of socio-economic development. The range applicable for each indicator is shown in the notes to table 1. The total fertility rate and life expectancy at birth are used as a basis for the demographic rankings, and the percentage of women over the age of 25 with zero years of schooling and gross domestic product per capita are used for the socio-economic rankings. On the left-hand side of the table, countries have been ranked in terms of the existence and strength of organized and government-supported family planning programmes. Three of the 20 countries included here (i.e., Guyana, Jordan and Peru) have no official family planning programme.

The lack of an official family planning programme does not necessarily mean that family planning services are unavailable to the population. None of the 20 countries surveyed had a policy of limiting access to modern contraceptive methods. In Guyana, there is no organized family planning programme; "such contraceptive knowledge and use as does exist, therefore,

^{6/} World Population Trends and Policies, 1981 Monitoring Report, vol. I Population Trends (United Nations Publication, forthcoming).

will be essentially the result of personal effort on the part of women and their partners". 7/ Regulations in Peru regarding family planning underwent a change shortly before the survey was conducted. Sterilization for contraceptive purposes was prohibited as were organizations devoted exclusively to fertility control; family planning is required to be totally integrated with other health services. 8/ A number of government-supported clinics now provide family planning services, but such services were not widely available in the period preceding the survey. 9/ The Jordanian Government supports the Jordan Family Planning and Protection Association, which is responsible for implementing family planning in that country. A number of clinics offer services, and contraceptive pills may be purchased at pharmacies without prescription, but subsidized services are not readily available to most couples. 10/

Although it is likely that the activities of family planning programmes have served to speed the diffusion of contraceptive information and use in most of these societies, it is extremely difficult to separate the effects of such programmes from the effects of other factors. The programmes have been in operation for varying lengths of time and have had varying degrees of success at extending services throughout the nation, a fact which is itself related to the widely differing social and economic contexts in which the programmes operate. While an investigation of the effects of family planning programmes on contraceptive practice is not the purpose of this report, it is interesting to note a certain rough grouping of countries with respect to programme characteristics as well as demographic and socio-economic development.

The most notable feature of table 1 at first glance is the consistency with which countries with weak family planning programmes have been ranked as low (code A) according to both levels of socio-economic and demographic

7/ Guyana Fertility Survey, 1975, Country Report, vol. I, (Ministry of Economic Development, 1979), pp. 53-54.

8/ Annual Review of Population Law, 1978 (New York, United Nations Fund for Population Activities, n.d.), p. 2.

9/ Population Policy Compendium: Peru (New York, United Nations and United Nations Fund for Population Activities, 1979), p. 4.

10/ Family Planning in Five Continents (London, International Planned Parenthood Federation, 1979), p. 42.

development. The only other countries with extremely high (6.0 or greater) total fertility rates - Jordan and Peru - are those with no official programmes. By far the most heterogeneous group of countries are those with strong family planning programmes. Although none of these countries had a total fertility rate above 6, there is a wide range of socio-economic levels displayed, from Indonesia at one end of the scale to Costa Rica and Jamaica at the other end. The countries whose family planning programmes are rated as moderate in strength seem more homogeneous on the whole with most showing demographic levels and socio-economic levels in the middle range for the countries included. The countries with no programme are also extremely heterogeneous.

Clearly, an analysis of contraceptive use must be conducted in the context of a knowledge of both the potential supply of contraceptives and the prerequisites for motivation which are related to the phase of the demographic transition, as well as over-all social and economic development. A strong family planning programme is neither a necessary nor a sufficient condition for contraceptive use but none the less its presence may be an important factor mediating hypothesized relationships between differentials in contraceptive use and general levels of development. In the analysis which follows, it will be important to keep in mind the information summarized in table 1.

C. Review of the literature

The level and patterns of contraceptive use are critical variables in fertility change, and causal inference about fertility conditions and changes in them must be supported, inter alia, by some empirical knowledge of what causes people voluntarily to regulate conception by applying contraceptives. A number of scholars have been concerned with the specific conditions in which individuals or couples will apply contraception as a means of limiting or spacing births, but no consensus has yet emerged, nor has any theory been developed which is capable of predicting with any degree of accuracy when individuals will voluntarily control births with contraceptives or other methods. An important problem in determining conditions of contraceptive use is the existence of a practical alternative to it, i.e., abortion, which played a prominent role in the historical decline of fertility in the now developed countries and which has been widely used in modern times, especially in Eastern Europe. The unsatisfactory state of knowledge about the conditions of contraceptive use reflects not only the familiar difficulties inherent in determining cause with regard to human behaviour but also a lack of knowledge of the conditions underlying the acceptability of abortion as an alternative to contraceptive use in the control of fertility.

Thus, the incidence of abortion and the circumstances of its use have been very difficult to assess, given social and religious taboos as well as national laws banning or severely restricting its use.

Research relating to the conditions of contraceptive use has been undertaken both at the societal level and at the individual level. Significantly, there has been relatively little research emphasis upon the interplay between societal conditions and factors in the lives of individuals which might influence the prevalence and patterns of contraceptive use within a population.

In much of the relevant literature, widespread control of conception is seen mainly as a societal response to economic and social conditions and institutions, rather than a response of individuals to those conditions and institutions and to changes in them. Where this is true, there is little focus upon the relevance of personal and family circumstances and experiences for individual behaviour in regard to the control of conception. The view that the control of births occurs widely once a society has undergone sufficient modernization is broadly in keeping with the theory of demographic transition. It implies, however, that individuals do not necessarily control births in response to their personal circumstances, but that the practice becomes widespread when aggregate mortality declines and social and economic conditions are favourable to adoption of the small family norm. 11/

It should be noted, though, that such changes in society are often sufficient to alter attitudes and motives in regard to reproduction. Indeed, it is doubtful that a shift in individual attitudes and motives such that they no longer favoured high fertility but were oriented towards

11/ This view has had wide currency for some time. For a discussion, see, among others, R. Freedman, "Next steps in research on problems, motivation and communication in relation to family planning", in C.V. Kiser, ed., Research In Family Planning (Princeton, 1962), pp. 598-604. See also, R. Freedman, "Statement of the Moderator", in World Population Conference, 1965, vol. I. Summary Report (United Nations publication, Sales No. 66.XIII.5). According to Freedman, "family planning is unlikely to be widely adopted in any country until there has been a significant mortality decline and until there has been enough social and economic development to lessen dependence on local and familial institutions and make smaller families more rewarding than larger families" (p. 45).

control of conception could take place without supporting alterations of social, economic and cultural institutions. One theory states that "the principal change responsible for controlled fertility has been a change in attitude or motivation". 12/ This view, which deals with the matter from the perspective of the individual and allows hypotheses about variations within cohorts of individuals in regard to contraceptive behaviour, implies that people adopt contraception in order to achieve certain goals or to accommodate tastes and preferences. For example, a prominent element of the theory is that "the desire for protection against conception grows out of the recognition of the hazards or disutilities associated /by the individual/ either with pregnancy itself or with an increase in family size". 13/

However, societies may not always permit the exercise of individual options in matters of reproduction. An observation that an individual's choice, if there is one, as to whether to control conception depends entirely upon her environment 14/ alludes to the interplay between societal prescriptions and conditions and the options that people have with respect to fertility control. 15/ In some communities or ethnic or kinship groups, a married woman may be subject to ridicule if the interval between her pregnancies is considered too long, if she fails to conceive or if, as

12/ A.J. Coale, "The voluntary control of human fertility", Proceedings of the American Philosophical Society, vol. III, No. 3 (June 1967), p. 168.

13/ G.W. Beebe, Contraception and Fertility in the Southern Appalachians (Baltimore, Md., Williams and Wilkins, 1942), p. 87.

14/ Ibid., p. 88.

15/ G.W. Beebe, op. cit. According to Beebe, individuals living in pre-modern societies may conform in a rigid social system (such as early marriage, a large family and domestic existence for a woman) that does not tolerate or nurture deviant behaviour. But in the course of transition to a more complex society, roles are more loosely defined, status is differently determined and reproduction loses some of its priority to competing functions. In summary, "As choice becomes possible, reproduction declines in importance", and efforts are made to control births.

reported in one study, she even suggests using contraceptives. 16/ Other societies may require adherence to the small family norm, providing for it by abstinence, infanticide, abortion, and so on. 17/ Thus, the society may enforce its norms regarding reproduction, and the wishes of the individual may be subordinated to those of the family or the society.

This interrelatedness between societal norms and individual choice is acknowledged in the postulated conditions for the control of conception that have been advanced in a restatement of the demographic transition theory. 18/ Accordingly, people will control conception when (1) there is acceptance of calculated choice as a valid element in marital fertility; (2) individuals perceive advantages from reduced fertility; and (3) they possess knowledge of effective techniques of control. 19/

One among many reasons for the widespread emphasis in the literature on macro-level research has been the controversy surrounding the effectiveness of family planning programmes in bringing about wide use of contraceptives and the conditions under which it could be accomplished. A highly prominent view is that, because there exists a latent demand 20/ in any given high-fertility population, only knowledge and means are needed to ensure the spread of fertility limitation methods, and that people would be motivated

16/ G.T. Acsádi, A.A. Igun and G.Z. Johnson, Surveys of Fertility, Family Planning in Nigeria (Ile-Ife, Nigeria, University of Ife, 1972), pp. 57-58. It was reported, inter alia, that to mollify an Ishan (Nigerian) man whose wife, mother of 13 children, had suggested using contraception, the village elders levied upon her a fine of one goat and, if she had failed to pay, she would have been banned from the community.

17/ See, for example, I.B. Taeuber, The Population of Japan (Princeton, N.J., Princeton University Press, 1958), p. 31.

18/ A.J. Coale, "The demographic transition", The Population Debate: Dimensions and Perspectives, Papers of the World Population Conference, Bucharest, 1974, vol. I (United Nations publication, Sales No. E/F/S.75.XIII.4).

19/ Ibid., pp. 353-354.

20/ As noted above, families, ethnic groups and even communities may force compliance with norms about family size and reproduction, subordinating the desires of the individual to those of the group or of family members. Thus, individuals or even couples may not be expected to behave in accordance with wishes about family size, and where there are discrepancies between a stated wish not to have another child and the use of contraception, this does not necessarily represent an unmet need for family planning.

to limit fertility once the value of doing so was communicated to them. 21/ In other words, a population could be prevailed upon to control conception without supporting changes within the society. In this connexion, it has been shown that, other things being equal, the stronger the family planning programme effort, the sharper the birth rate decline, the corollary being that people are more likely to practise contraception in areas where there is a strong family planning programme. 22/ At the same time, the incidence of fertility control has been shown to be even greater when a strong family planning programme was introduced into a favourable development setting. 23/

In conflict with the argument that people would control fertility given the knowledge and means is the more prevalent view that without a moderation of mortality as well as the achievement of sufficient modernization to alter social institutions - in particular the family, its role and preferences as to its size - fertility control could not be adopted on a wide scale, with or without a family planning programme. 24/

The view that fertility was not widely controlled in pre-modern societies because the knowledge and means were lacking has some validity but would be more tenable if it were modified to reflect the important influence of cultural and other institutions as well as social conditions. Certainly, it is well documented that, in most societies "traditional" methods of regulating births have been widely known. 25/ Although there may be societies in which, for some reasons, people have not learned any means of contraception (or fail to recognize them as such and thus do not report them), it is more often the case that modernization, including the introduction of

21/ B. Berelson, "National family planning programmes: where we stand", in S.J. Behrman, L. Corsa and R. Freedman, eds., Fertility and Family Planning: A World View (Ann Arbor, Mich., 1969), pp. 364-369.

22/ W.P. Mauldin and B. Berelson, "Conditions of fertility decline in developing countries, 1965-75", Studies in Family Planning, vol. 9, No. 5 (May 1978), p. 90.

23/ Ibid.

24/ See, for example, R. Freedman, "Statement of the Moderator", loc. cit.

25/ N.E. Himes, Medical History of Contraception (New York, Gamut Press, 1963), p. 55; see also, G.T. Acsádi, "Traditional birth control methods among the Yoruba", in J.F. Marshall and S. Polgar, eds., Culture, Natality and Family Planning (Chapel Hill, N.C., Carolina Population Center, 1976), chapter 7, and A. Molnos, Cultural Source Materials for Population Planning in East Africa, vol. III, Beliefs and Practices (Nairobi, Institute of African Studies, University of Nairobi, 1973), p. 16.

family planning programmes, brings a change from traditional to modern means of fertility control; that the growing incidence of contraceptive use witnessed over the past two decades represents not innovation but adjustment, 26/ a response of individuals to changing societal conditions which include the availability of previously unavailable modern methods of birth control. 27/ The "new style of ideas ... only became stronger in modern society, or was more consistently put into action". 28/

It is no longer thought profitable to argue the relative merits of development and family planning programmes as policy measures for reducing fertility for it is now evident that the two conditions provide a more favourable climate for widespread use of contraceptives than does either one singly. In spite of the fact that little basis yet exists for making causal inference about the conditions leading to society-wide changes in fertility control, perhaps because the available data are not suitable and most of the empirical research currently being reported fails perforce to seek such causes. For some time, perhaps owing to the popularity of knowledge, attitudes and practice surveys, most studies of contraceptive use have focused upon individuals' personal characteristics. Results of these studies have strengthened the view, already prominent in fertility research, that women and men who belonged to certain social and economic classes, ethnic and religious groups and who possessed certain demographic characteristics were more likely than their counterparts to apply contraception. Additionally, those with certain tastes and preferences in respect to size and composition of family were more likely than others to control conception. 29/ Results of one extensive study allowed the authors to theorize that "demographic variables are much more important than social and economic variables in determining who becomes an acceptor" 30/ of contraceptives from a family

26/ G. Carlsson, "The decline of fertility: innovation or adjustment process", Population Studies, vol. XX, No. 2 (November 1966), pp. 149-174.

27/ N.E. Himes, op. cit., chap. 1.

28/ G. Carlsson, loc. cit., p. 172.

29/ Indeed, many of the analysts, writing mainly in the late 1950s through the early 1970s, took only superficial note of the social, economic and cultural milieus in which the subjects of their research lived. Multi-level analysis, as it is coming to be known, has been little explored and appears not to have been applied in this sphere of research.

30/ R. Freedman and J.Y. Takeshita, Family Planning in Taiwan; An Experiment in Social Change (Princeton, N.J., 1969), p. 149.

planning programme, and that "demographic pressures provide the constant incentive for family limitation with and without the existence of an organized programme". 31/ However, such findings may not be equally characteristic of all societies. Thus, results of an analysis of 17 KAP surveys offered evidence that the effect upon contraceptive use of preferences in regard to the sex of children varies with the culture. 32/ Indeed, the relative influence of demographic, socio-economic and other personal attributes upon the practice of contraception may vary not only among cultures but also over time in any given milieu.

D. Highlights of the study

In many ways, the analysis undertaken here follows in the tradition of the literature described above. Despite the availability of more recent comparable data on patterns of contraceptive use for a broad range of developing countries, this study suffers from many of the difficulties of previous empirical research. The absence of comparable information on the incidence of abortion as well as the usual difficulty of deriving causal inferences from cross-sectional micro-level data plague this study as they have many others before it. None the less, the data under investigation in this study provide an unusual, and indeed perhaps ever a unique, opportunity to gain some new vantage points on conditions of contraceptive use at a time in which rapid change is known to be in progress. Not only does this study provide the opportunity to analyse trends in use for the first time in many countries but it also (because of the comparability of WFS data) enables the comparison to be made across countries of patterns of contraceptive use which prevail under very different socio-economic and institutional circumstances. Such a comparison makes clear that not only does the incidence and type of contraceptive use vary within countries according to individual preferences and characteristics but the patterns of individual differences vary between countries in ways that may often be related to country-specific characteristics such as the institutional setting (i.e., the strength of family planning programmes) and the level of development.

31/ Ibid. The demographic variables included family size, number of sons, number of children wanted additionally and age and marriage duration of the woman both of which reflected the number of children ever born. The social and economic variables were rural/urban background, income, family structure, employment status of the husband, ownership of modern consumer objects, education and literacy of spouses.

32/ Factors Affecting the Use and Non-use of Contraception: Findings from a Comparative Analysis of Selected KAP Surveys (United Nations publication, Sales No. E.79.XIII.6), pp. 36-38.

The study will begin, in chapter I, with a description of the level of knowledge and use in the 20 countries for which WFS data are currently available. Patterns of use in terms of type of method and trends in use based on a comparison with previous KAP surveys will be discussed. Because the level of knowledge of contraception is quite high in all the countries analysed, subsequent analysis deals only with the patterns and trends in current contraceptive use.

In chapter II, differentials in contraceptive use by various demographic characteristics and desire for no more children are presented. Here, the importance of contraceptives for birth spacing as well as for family size limitation is discussed. Breast-feeding and contraceptive use can be viewed as alternative approaches to birth spacing and evidence is presented to document this point, through a comparison among countries of breast-feeding practices and the prevalence of contraceptive use of women who want more children.

In chapter III, differentials in contraceptive use by various socio-economic factors are analysed with the use of multivariate statistical techniques. Wife's and husband's education, urban/rural residence and wife's and husband's occupations are all included in the analysis. Important differentials remain after statistical controls, most consistently in the case of education. One important finding, here, is that a strong family planning programme can moderate the size of differentials in contraceptive use by education groups which would otherwise be expected to be relatively large in the course of the demographic transition. It is possible that a vigorous family planning programme which includes a post-partum information and education programme may be an important source of education in some countries. ^{33/} Small but statistically significant differentials are also found by urban/rural residence and husband's occupation after other variables were controlled.

Chapter IV reviews the scraps of evidence now available on trends in use by number of living children, rural/urban residence and education. General conclusions are difficult to reach because no data are available for many of the countries included in the study. However, some evidence does emerge that the phase of development as well as the institutional setting may play an important role in explaining intercountry differences in trends and patterns of contraceptive use.

^{33/} One of the criteria used by Mauldin and Berelson for evaluating the strength of the programme. See W.P. Mauldin and B. Berelson, loc. cit., p. 102.

Table 1. Some characteristics of 20 World Fertility Survey countries with respect to demographic and socio-economic levels and strength of family planning programmes approximately as of the date of their respective surveys

Strength of family-planning programme a/	Total fertility rate b/	Expectation of life at birth c/ (e_0)	Percentage of women > 25 with zero schooling d/	GDP per capita, 1975 e/
<u>Strong</u>				
Fiji	C	C	B	C
Indonesia	B	A	A	A
Philippines	B	B	B	A
Republic of Korea	C	B	B	B
Thailand	B	B	B	A
Costa Rica	C	C	C	C
Jamaica	C	C	C	C
<u>Moderate</u>				
Malaysia (Peninsular)	B	C	B	B
Sri Lanka	C	C	B	A
Colombia	B	B	B	B
Dominican Republic	B	B	B	B
Mexico	B	B	B	C
Panama	B	B	B	C
<u>Weak</u>				
Bangladesh	A	A	A	A
Nepal	A	A	A	A
Pakistan	A	A	A	A
Kenya	A	A	A	A
<u>No official programme</u>				
Jordan (East Bank)	A	B	A	A
Guyana	B	C	C	B
Peru	A	B	B	B
<u>Code</u>	<u>Rate</u>	<u>Years</u>	<u>Percentage</u>	<u>Dollars</u>
A	≥ 6.0	< 55	> 50	< 500
B	4-5.9	55-64	20-50	500-1,000
C	< 4	≥ 65	< 20	$> 1,000$

(Foot-notes on following page)

(Foot-notes to table 1)

a/ W.P. Mauldin and B. Berelson, "Conditions of fertility decline in developing countries 1965-75", Studies in Family Planning, vol. 9, No. 5 (May 1978), p. 90. The rating of programme strength was based on 15 "programmatic criteria" developed originally in R. Lapham and W.P. Mauldin, "National family planning programs; review and evaluation", Studies in Family Planning, vol. 3, No. 3 (March 1972), pp. 29-52. The programme strength was rated at roughly mid decade for the period 1965-1975 under review. A further elaboration by Mauldin in his text indicates that certain programmes gained strength over the decade and should be upgraded if evaluation is made at the end of the decade under review. Based on his evaluation, Indonesia, the Philippines and Thailand were rated as having strong programmes by the date of the WFS surveys, and Mexico was rated as having a programme of moderate strength by 1977.

b/ For all countries except Fiji, Malaysia and Panama, figures were taken from table 2.1 of "Report on monitoring of population trends" (ESA/P/WP.68, 9 December 1980). For Fiji, Malaysia and Panama, data were taken from tables 8 and 9 of World Population Trends and Policies - 1979 Monitoring Report, vol. 1 (United Nations publication, Sales No. E.79.XIII.4).

c/ Unless otherwise noted, data taken from "Report on monitoring of population trends" (ESA/P/WP.68, 9 December 1980), table 4.1.

For Dominican Republic, Malaysia, Panama and Peru, Levels and Trends of Mortality since 1950 (United Nations publication, Sales No. E.81.XIII.3).

For Fiji, Guyana and Pakistan, no figures were available for the 1970s. Estimates taken from World Population Trends and Prospects, by Country, 1950-2000: Summary Report of the 1978 Assessment (United Nations publication ST/ESA/SER.R/33, 1979), table 3.B.

For Jordan, above-cited reports showed a wide range, from 54 to 65. On the basis of United Nations estimate, it seems appropriate to class Jordan in the 55 to 64 range for the mid 1970s.

d/ United Nations Educational, Scientific and Cultural Organization, Statistical Yearbook, 1980, table 1.4.

Percentage of women over age 25 with zero schooling. In the case of Mexico and the Republic of Korea, rankings were changed from A to B on the basis of the rapid change which had taken place in those countries which is reflected by the currently married women 15-49 with zero years of schooling from the WFS survey data themselves.

e/ Gross domestic product per capita in US dollars at 1975 prices. Yearbook of National Accounts Statistics, 1979, vol. II, (United Nations publication, Sales No. E.80.XVII.11 vol. II), pp. 3-9, table 1A.

Chapter I

PREVALENCE OF KNOWLEDGE AND USE OF CONTRACEPTION

A. Knowledge of contraception

1. Knowledge of any method

Data from the World Fertility Survey have shown that the level of awareness of contraception is quite high in most of the countries surveyed to date (table 2). In 14 of the 20 developing countries for which information is available, at least 90 per cent of ever-married women of reproductive age had heard of one or more methods, and in all but one country -- Nepal -- at least three fourths of the women had heard of a modern method. In all countries, the percentage of women who had heard of one or more of the modern methods -- sterilization, the pill, injectables, intra-uterine device (IUD), condom or other effective female methods (diaphragm, foam, other spermicides) ^{1/} -- was almost as large as the percentage that had heard of any method. Simple recognition of a method does not, of course, imply that

^{1/} For convenience in discussion, contraceptive methods are classed as modern and traditional, even though some of the "modern" methods have a long history and although there are some variants of the rhythm method that are of recent origin. The two method groups are called "efficient" and "inefficient" in the World Fertility Survey First Country Reports. The modern group includes the methods most often offered by family planning programmes, though few programmes make all these methods generally available. These methods are also distinguished by their requirements for supplies and/or medical attention and by their greater effectiveness at preventing accidental pregnancies. There are few measurements of rates of contraceptive failure in developing countries for methods other than IUDs, pills, injectables and sterilization. Studies of other methods, conducted primarily in developed countries, show wide variations in failure rates, depending at least in part on the age and degree of motivation of the groups of users studied. It is quite possible that in some countries particular traditional methods, such as withdrawal, have lower failure rates than some modern methods, particularly the condom and the female barrier and chemical methods. For reviews of effectiveness of various methods, see Population Reports (Baltimore, Md., Johns Hopkins University), Series B, No. 3; Series H, Nos. 3, 4 and 5; Series I, No. 1; Series K, No. 1; Series C; Series D, No. 2; Series A, No. 2; A.L. Southam, "Contraceptive methods: use, safety, and effectiveness", in B. Berelson and others, eds., Family Planning and Population Programs (Chicago, Ill., University of Chicago Press, 1966), pp. 385-386; C. Tietze, "The use-effectiveness of contraceptive methods", in C.V. Kiser, ed., Research in Family Planning (Princeton, N.J., Princeton University Press, 1962), pp. 357-369.

the method can be used effectively. The more effective methods require regular supplies or expert medical attention and many methods, including some of the less effective ones, require detailed instructions for proper use.

2. Knowledge of specific methods

Over-all, the most widely recognized methods are the pill, the IUD and female sterilization (table 2). In all but one country (Nepal), at least one half of the ever-married women interviewed knew about the pill, and in 14 of the 20 countries at least three fourths of them recognized this method. Three fourths of the women recognized the IUD in 12 countries and three fourths knew about female sterilization in 10 countries. Male sterilization is less widely known (at least by women) than is female sterilization, except in the Republic of Korea and Nepal. The other modern male method - the condom - is, with a few exceptions, less widely known than the major female methods. It is not surprising to find greater awareness of female methods given their promotion by national family planning programmes. However, it is likely that the level of awareness of male methods among men, who were not interviewed, is higher than that recorded here. 2/

It should be noted that, with a few exceptions, all the figures in table 2 represent the level of knowledge after the interviewer described each method with a probe question, thereby possibly influencing greatly the apparent level of knowledge of all the specific methods, but especially of the traditional methods. 3/ To the extent that these variations in

2/ This was true in Thailand, where husbands as well as wives were interviewed. Husbands reported a higher level of knowledge of male sterilization and the condom than did wives, while wives more frequently recognized the pill, the IUD and female sterilization. The Survey of Fertility in Thailand: Country Reports, vol. II (Bangkok, Institute of Population Studies, Chulalongkorn University), table 6.2.16.

3/ See, for example, Sri Lanka, Department of Census and Statistics, Ministry of Plan Implementation, World Fertility Survey, Sri Lanka, 1975, First Report (Colombo, 1978), p. 127, table 7.2. Knowledge of traditional methods was probably seriously underreported when probes were omitted. The following are countries that omitted certain probes: on injection: Bangladesh, Jordan, Nepal, the Philippines, Panama, the Republic of Korea; douche: Malaysia, Nepal; abstinence: the Dominican Republic, Nepal, Panama; rhythm: Nepal. (This information was not available for Kenya.) No probe questions were asked in the Pakistan survey.

procedure influenced the answers, some international incomparability was introduced. Although in most countries there were questions for the methods shown by name in table 2, most surveys did not include probe questions when investigating familiarity with indigenous folk methods, which are included in the category "other". 4/ It is likely that familiarity with such methods is underreported. Omission of probes probably also had an impact on reported levels of use of folk methods which are discussed in section B.3 of the present chapter.

It is of interest that, in all countries except Fiji, only a minority of the women reported knowing about abstinence which, along with the relatively small number that knew of withdrawal suggests "that what is being measured is not simply a technical type of knowledge but rather an orientation to fertility regulation". 5/

The proportion of women who recognized at least one traditional method tends to be higher in countries where knowledge of modern methods is widespread than it is in the other countries. In several, a fairly large fraction of women mentioned that they knew one or more methods in addition to those shown by name in table 2 including 55, 28 and 21 per cent, respectively, in Jordan, Indonesia and Malaysia. Except in Indonesia, such methods were mentioned spontaneously. 6/ For most of the countries there is no detailed information as to other methods women mentioned. 7/

4/ The effect of probes on the apparent level of use may be substantial. For example, in Sri Lanka only 17 per cent of the women who later in the interview said they had used rhythm had mentioned that they knew about this method before the probe question was asked; most of the other 83 per cent of the users would presumably not have mentioned using the method if the probe question had been omitted. An even smaller percentage of ever-users of withdrawal and abstinence had mentioned the method before the probe. By contrast, over 90 per cent of ever-users of the pill and the IUD, about 80 per cent of condom users and 60 per cent on injectable and "other female methods" users had mentioned the method before the probe.

5/ World Fertility Survey, Sri Lanka, 1975, First Report, p. 125.

6/ In Fiji, in addition to the methods shown in table 2, women were asked if they had heard of breast-feeding being practised for contraceptive reasons; 50 per cent of ever-married women responded that they had. Fiji Fertility Survey, 1974, Principal Report, table H1.

7/ In Malaysia, herbal medicines were mentioned most frequently. Other traditional methods mentioned there include massaging of the uterus, exercise immediately after intercourse, and ceremonies involving incantations and the eating of special foods. Malaysian Fertility and Family Survey - 1974, First Country Report, p. 130. In Indonesia, the other methods were primarily herbal medicines, massage of the uterus and "uterus inversion". Indonesia Fertility Survey, 1976, Principal Report, vol I, p. 39. Some of these indigenous methods may act as abortifacients rather than contraceptives.

Information for three Asian and two Latin American countries suggests that women with little education and those who live in rural areas are usually less likely than others to know of a family planning outlet. ^{8/} Table 4, adapted from a recent analysis, shows that in all five countries studied, there is a regular and strong increase with education in the likelihood that a woman knows of an outlet, before or after control for the other variables. ^{9/} In four of the five countries, 88-95 per cent of the women with post-secondary education knew of an outlet, while the percentage with no education that knew of an outlet ranged from 40 to 80. In Nepal there is also a strong differential, but the level of knowledge is relatively low in all educational groups. The intercountry differences in knowledge in rural and urban areas appear to be related to activities of the family planning programmes in those countries. Where the programme is regarded as strong, as in Costa Rica and the Republic of Korea, or where there has been considerable emphasis within the programme on serving rural areas, as in Malaysia, rural women are nearly as likely as urban women to know of an outlet. In Colombia and Nepal, where programme services have been concentrated in urban areas, urban women are much more likely than rural women to know of an outlet. ^{10/}

B. Levels of and trends in contraceptive use

Tables 5 and 6 show the levels of contraceptive use and type of method used at the time of the WFS survey and, where roughly comparable survey information was available, also changes over time in contraceptive practice. Contraceptive use at the time of the WFS survey will be discussed first.

^{8/} G. Rodríguez, "Family planning availability and contraceptive practice", Family Planning Perspectives, vol. 11, No. 1 (January/February 1979), pp. 51-71.

^{9/} In the case of the education differentials, effects of rural/urban residence are also controlled. These adjusted figures can be interpreted in the same way as one would interpret figures that had been directly standardized on the over-all within-country distribution of the control variables.

^{10/} J. Stoeckel, "Differentials in fertility, family planning practice, and family size values in South Korea, 1965-1971", Studies in Family Planning, vol. 6, No. 11 (November 1975), p. 378; R. Freedman and B. Berelson, "The record of family planning programs", Studies in Family Planning, vol. 7, No. 1 (January 1976), pp. 22, 26; United Nations Fund for Population Activities, Malaysia: Report of Mission on Needs Assessment for Population Assistance, Report No. 10 (1979); Nepal: Report of Mission on Needs Assessment for Population Assistance, Report No. 21 (October 1979). In some countries, including Nepal, some services are provided by mobile workers for teams, so that there may be no fixed outlet in many areas that receive some services.

1. Levels of ever-use and current use of contraception

Among the developing countries for which data are available, contraceptive use is, on the average, higher in the Latin American countries than in the Asian countries. Within the Asian and Oceanic countries, from 4 per cent in Nepal to 69 per cent in Fiji of currently married women in the reproductive ages had used contraception at some time (table 5). Within the Latin American countries, the range is smaller, from 47 per cent in Mexico to 84 per cent in Costa Rica. The percentage using contraception at the time of the interview ranged from 2 in Nepal to 41 in Fiji among the Asian and Oceanic countries and from 30 in Mexico to 64 in Costa Rica among the Latin American countries. The level of use in two of the Latin American countries, Costa Rica and Panama, is within or near the range observed among developed countries. ^{11/} Preliminary data are available for one African country, Kenya. Although approximately one third of ever-married Kenyan women aged 15-50 had used contraception at some time, only 7 per cent of the currently married women were using at the time of the interview.

Among the Asian countries, there are three, Bangladesh, Nepal and Pakistan in which 14 per cent or fewer of the married women had ever used contraception and fewer than 10 per cent were currently using. These countries are clearly separated, in their level of use, from the other Asian countries; in Indonesia and Jordan, the countries in table 5 with the next lowest level of use, about one fourth of the married women were currently using.

In the developing countries (except Kenya) for which data are available, most ever-users were currently using at the time of the survey. ^{12/} For the countries shown in table 5 (except Kenya), the percentage of currently married women who ever-used contraception correlates almost perfectly with the percentage currently using ($r > .9$). Thus, since the time reference of current use is clearer than that of ever-use, and also since current use may be somewhat more accurately measured than ever-use, the remainder of this discussion focuses on current use.

^{11/} See table 2.20 in part C of chapter 2 of "Report on monitoring of population trends" (ESA/P/WP.68, 9 December 1980), for levels of use in selected developed countries.

^{12/} This comparison is made for results from World Fertility Survey inquiries only.

2. Trends in contraceptive use

For several of the developing countries participating in the WFS, surveys conducted before or after the WFS survey permit an examination of trends in the level of contraceptive use. ^{13/} Differences between successive surveys, in questions, wording, in training of interviewers and in other interviewing conditions, may have affected the estimates of changes over time in the level of use of contraception and in the types of methods used. In particular, the level of use of traditional methods appears much lower if these methods are mentioned spontaneously by the interviewer than if "probe" questions are introduced. Differences in the wording of questions were judged not to affect the general impression of time trends that this table conveys, but the statistics should be treated with caution.

These figures show a rapid increase in the level of use between the late 1960s and the mid 1970s in Colombia, Malaysia, the Philippines, the Republic of Korea, and Thailand. The percentage of currently married women who were using contraception more than doubled (starting from initially low levels) in a period of less than 10 years in Malaysia, the Philippines and Thailand and approximately doubled in the Republic of Korea between 1971 and 1978. Surveys taken in Mexico roughly two years apart (1976/77, 1978) show a dramatic increase in current contraceptive use, from 30 to 40 per cent, while in Indonesia there was a rise in current and ever-use of from 10 to 26 per cent of married women between 1973 and 1976. However, such rapid increases recorded over a short space of time must be viewed with extreme caution for, as noted above, sampling error, differences in population sampled, sample design and methodology may explain some part of the recorded differences.

By contrast, surveys in Costa Rica, Jordan and Pakistan reveal little if any change in the level of use. The Costa Rican surveys were conducted only two years apart, and the level of use was already quite high at the time of the earlier survey. Other surveys, which were not national in scope, indicate that the level of use in Costa Rica increased markedly from the mid 1960s to the mid 1970s, while contraceptive use in rural Peru increased slowly between 1969 and 1977. ^{14/} In Pakistan, however, the

^{13/} This comparison is restricted to countries for which World Fertility Survey information is available. Figures shown in table 5 are taken from surveys that were judged roughly comparable to the WFS. Cf. D. Nortman and E. Hofstatter, Population and Family Planning Programs: A Compendium of Data through 1978, tenth edition (New York, Population Council, 1981), table 21, for estimates derived from survey and other sources.

^{14/} See the discussion in chap. IV and table 16.

methodology of the two surveys differed in a way that probably led to an understatement of use at the later data. ^{15/} There may have been a modest increase in contraceptive use in Pakistan but there is no reason to suppose that the increase has been as dramatic as that recorded in some other Asian countries. The reported level of contraceptive use in Jordan increased only slightly between 1972 and 1976.

3. Specific contraceptive methods used, and trends in method used

In all the developing countries shown in table 6 and figure I with the exception of Peru and the Philippines, a majority of the women using contraception are using one of the modern methods: male or female sterilization, pill, injectable, IUD, condom or female chemical or barrier methods (diaphragm, foam, other spermicides). ^{16/}

The pill is an important method in most developing countries and, in many, it is the most frequently used. And while one method rarely accounts for as much as one half of total contraceptive use, over half of all contraceptors in Indonesia were using the pill. The only countries in which the pill accounted for less than 20 per cent of use are Nepal, Pakistan, Peru, the Philippines and Sri Lanka.

Female sterilization is also a major method in many countries, especially in Panama, where one fifth of currently married women had been sterilized, but it accounted for less than 10 per cent of use in Bangladesh, Indonesia, Jordan, Nepal and Peru.

Both the pill and female sterilization have tended over time to increase in share of total contraceptive use in most developing countries for which such information is available. In the Republic of Korea, however, use of the pill has declined, relative to use of other methods, while female sterilization has increased greatly, following an extension of programme subsidies to cover that method.

The IUD and condom are important methods in many countries but generally attract fewer users than do the pill and female sterilization. However, these methods have not grown in relative importance over time, except in the Philippines, though actual number of users has, in most cases increased. It is possible that condom usage would appear somewhat higher if men had been interviewed.

^{15/} N.M. Shah, "Past and current contraceptive practice in Pakistan", Studies in Family Planning, vol. 10, No. 5 (May 1979), pp. 164-173.

^{16/} See section A above, "Knowledge of contraception".

Male sterilization is infrequently practised in all of the Latin American and most of the Asian countries. In the Republic of Korea, roughly 5 per cent of couples were using this method (11 per cent of users in 1978), and while male sterilization accounted for 65 per cent of all current use in Nepal, only 2 per cent of married couples were using this method, reflecting the low over-all levels of use. Injectables and female vaginal methods account for less than 10 per cent of all use, and the diaphragm, foam and other similar methods appear to have decreased in relative importance over time.

In Bangladesh, Colombia, Jordan, Kenya, Malaysia, Pakistan and Sri Lanka, at the most recent survey shown, between one half and one fourth of users were applying one of the traditional methods -- rhythm, withdrawal, abstinence, douche, and miscellaneous other methods. Of the traditional methods, rhythm and withdrawal are numerically the most important in most countries, and they account for 45-50 per cent of all use in Peru and the Philippines. With the exception of Peru, modern methods are heavily predominant in the Latin American countries.

There is no clear difference between Asian and Latin American countries in the types of methods most frequently in use. There is wide variability among countries within each region; the mix of methods is probably determined by many factors, including relative cost and availability, factors greatly influenced by official or other organized family planning programmes. Most programmes actively promote the use of some combination of methods that are classified here as modern though a few programmes also encourage the use of other methods. ^{17/}

One conclusion to be drawn from the foregoing discussion is that the contraceptive methods responsible for the fertility decline now occurring in many developing countries are not primarily those that produce the earlier fertility decline in the countries of Europe, which occurred at a time when most methods classed here as "modern" did not yet exist. Indeed, with a few exceptions - notably Peru and the Philippines, among the countries examined here - most couples who practise contraception are using modern, relatively effective female methods. A large fraction of women in the developing countries reported that they had never heard of the traditional male methods, while there was in most countries a high level of awareness of one or more of the modern methods, no doubt largely because family

^{17/} For example, Catholic-supported services in the Philippines promote the use of rhythm. R. Freedman and B. Berelson, "The record of family planning programs," Studies in Family Planning, vol. 7, No. 1 (January 1976), p. 11.

planning programmes have emphasized those methods. It is possible that knowledge and use of male methods would have appeared more prevalent had husbands been interviewed. At the same time, traditional methods are of importance, as they were practised by at least 10 per cent of exposed women in 11 of the 20 countries for which information was available.

C. Summary

The level of simple recognition of one or more contraceptive methods is high in most countries. In 14 of 20 developing countries at least 90 per cent of women had heard of one or more methods, and in all countries, with the exception of Nepal, at least three fourths of the women knew of a method. Knowledge of a place where contraceptive supplies or services could be obtained was often much less widespread than was simple recognition of a method, suggesting that use of modern methods is still seriously constrained by a lack of availability of family planning services.

The level of current contraceptive use varies widely among the 20 developing countries; fewer than 10 per cent of currently married women in the reproductive ages were using a method in three Asian countries and in Kenya, while in Costa Rica nearly two thirds were currently using. Among the countries whose family planning programmes were rated as strong in table 1, the level of current use ranged from 26 per cent in Indonesia, which is by far the least developed country in this group, to 64 per cent in Costa Rica, which is the most developed. In other countries in this group, roughly one third or slightly more were current users. The level of use among the countries rated as having moderate programmes is roughly similar, ranging from 54 per cent in Panama, the most developed country in this group, to 30 per cent in Mexico, which is the country which has undergone the most rapid changes in recent years with respect to economic and demographic conditions as well as programme strength. The levels of use among countries with weak programmes (i.e., Bangladesh, Kenya, Nepal and Pakistan) is universally low as is their level of development. In the three countries with no official programme (i.e., Guyana, Jordan and Peru) levels of use range from 25 to 32 per cent indicating that the absence of an official programme does not necessarily provide a barrier to contraceptive use.

Surveys which pre-date or post-date the WFS show that very rapid increases in the level of contraceptive use have occurred in many countries: Colombia (1969-1978); Indonesia (1973-1976); Malaysia (1966/67-1974); the Philippines (1968-1979); the Republic of Korea (1971-1978); Thailand (1969/70-1979). All these countries are rated as having either strong or moderate family planning programmes, with the programmes of Indonesia, the Philippines and Thailand having grown notably in strength during the

period under review. ^{18/} In Costa Rica, the level of use has more or less stabilized at a high level after increasing rapidly earlier. By contrast, there was evidently little increase in Pakistan (1968-1975), a country rated as having a weak programme, or in Jordan (1972-1976), and only a rather modest increase in rural Peru (1969-1977), the last two countries having no official programme.

There is considerable variation among countries in the particular methods currently in use. In 15 of the 20 developing countries, at least two thirds of users were employing a modern method (pill, IUD, injection, sterilization, female vaginal methods, condom). In two countries, Peru and the Philippines (both heavily Catholic countries), traditional methods account for most of the total contraceptive practice. As the over-all level of contraceptive use has increased, there have also been shifts in the types of methods used; modern methods, particularly the pill and female sterilization, have increased their share of total use over time. A shift towards modern methods has also been evident in many developed countries. ^{19/} Although the over-all level of use is typically higher in developed countries than in developing countries, traditional methods (particularly withdrawal and rhythm) account for a larger fraction of total use in some developed countries than in most of the developing countries studied here.

^{18/} W.P. Mauldin and B. Berelson, "Conditions of fertility decline in developing countries 1965-75", Studies in Family Planning, vol. 9, No. 5 (May 1978), p. 90.

^{19/} See table 2.21 in part C of chapter 2 of "Report on monitoring of population trends" (ESA/P/WP.68, 9 December 1980) for patterns of use in developed countries.

Table 2. Percentage of ever-married women who had heard of specific contraceptive methods, selected WFS countries

Country	Number of women a/	Any method	Any modern method b/	Any traditional method b/	Sterilization		Pill	Injection	IUD	Condom	Foam, diaphragm etc.	Rhythm	With-drawal	Abstain-ence	Douche	Other
					Female	Male										
<u>Africa</u>																
Kenya ^{c/}	8 100	88	84	70	54	14	74	55	49	40	20	50	25	45	12	2
<u>Asia and Oceania</u>																
Bangladesh	6 515	82	80	49	53	51	64	...	40	21	10	28	15	12	31	5
Fiji	4 928	100	100	87	96	40	98	50	97	83	41 ^{d/}	57	56	57	...	5
Indonesia	9 155	77	75	34	11	8	71	17	50	41	5	12	7	13	3	28
Jordan	3 611	97	97	81	79	19	96	...	76	51	21	50	54	33	20	55
Malaysia	6 318	92	90	61	73	34	87	48	40	52	26	38	30	30	...	21
Nepal	5 940	23	22	6	13	16	12	0	6	5	0	0	0	5	0	1
Pakistan	4 952	75	75	4	7	2	63	13	48	14	7	0	0	2	0	1
Philippines	9 268	94	94	79	75	70	90	...	86	88	40	66	65	36	21	4
Republic of Korea	5 430	97	97	68	66	84	94	5	91	75	5	58	37	25	27	2
Sri Lanka	6 808	91	90	56	82	38	79	43	62	51	11	44	20	31	9	3
Thailand	3 820	97	96	55	87	70	92	71	86	48	22	32	22	36	17	1
<u>Latin America</u>																
Colombia	3 302	96	95	74	72	38	90	71	82	60	56	56	47	28	41	9
Costa Rica ^{e/}	3 037	100	100	91	94	67	98	88	91	91	71	81	67	31	60	7

(Table continued on following page)

Table 2. (continued)

Country	Number of women a/	Any method	Any modern method b/	Any traditional method b/	Sterilization		Pill	Injection	IUD	Condom	Foam, diaphragm, etc.	Rhythm	With- drawal	Abstain- ence	Douche	Other
					Female	Male										
Latin America (continued)																
Dominican Republic	2 256	98	98	75	95	30	91	68	78	72	60	43	56	...	47	12
Guyana	3 616	95	95	71	79	22	78	38	79	73	45	46	48	32	36	16
Jamaica	2 765	98	98	78	88	40	95	87	84	90	67	39	59	38	43	3
Mexico	6 255	90	89	63	68	38	83	68	75	42	28	48	47	...	38	4
Panama ^{e/}	3 203	99	98	86	93	65	95	26	89	76	56	66	61	35	62	4
Peru	5 639	82	78	69	60	19	63	61	42	40	31	55	40	24	47	11

a/ Unless otherwise indicated, based on women aged under 50 or 15-49 ever-married or in a union. Data taken from M. Vaessen, Knowledge of Contraceptive Methods, World Fertility Survey Comparative Studies No. 8, (Voorburgh, the Netherlands, May 1980), p. 16, table 1, and from standard recode tapes.

b/ Modern methods include sterilization, pill, injection, IUD, condom and female vaginal methods (diaphragm, foam, other spermicides). Other methods are counted as traditional.

c/ Based on all women aged 15-50.

d/ Douche included with foam etc.

e/ Based on ages 20-49.

f/ Included with "other".

Table 3. Percentage of currently married women who had heard of an efficient method of contraception and percentage who knew of a family planning outlet, selected WFS countries a/

Country	Knew of a modern method ^{b/}	Knew of an outlet
Colombia	96	66
Costa Rica ^{c/}	100 ^{d/}	89 ^{e/}
Indonesia	80	53
Kenya	88 ^{f/}	42 ^{g/}
Malaysia	90 ^{d/}	77 ^{e/}
Nepal	22 ^{d/}	6 ^{e/}
Pakistan	75	32
Panama ^{c/}	99	72
Republic of Korea	98	86

a/ Percentages were taken from World Fertility Survey First Country Reports or data tapes and based on currently married women aged 15-49 or under age 50, except as noted.

b/ Sterilization, pill, injection, IUD, condom, diaphragm, foam and other spermicides.

c/ Ages 20-49.

d/ Based on ever-married women.

e/ G. Rodríguez, "Family planning availability and contraceptive practice", Family Planning Perspectives, vol. 11, No. 1 (January/February 1979), p. 53, table 1.

f/ Based on all women aged 15-50.

g/ Based on ever-married women aged 15-50.

Table 4. Percentage of currently married women who knew of a family planning outlet, by education and type of place of residence, selected WFS countries

Country	Total	Level of education			Type of place of residence			
		None	Primary	Secondary	Higher	Urban City	Town	Rural
<u>Colombia</u>								
Unadjusted percentage	66	36	66	90	93	79		43
Adjusted <u>a/</u>	66	42	66	83	87	80		42
<u>Costa Rica</u>								
Unadjusted percentage	89	68	88	93	95	92		85
Adjusted <u>a/</u>	89	71	89	92	94	93		85
<u>Malaysia</u>								
Unadjusted percentage	77	62	84	90	90	80	83	75
Adjusted <u>a/</u>	77	66	81	89	91	80	82	75
<u>Nepal</u>								
Unadjusted percentage	6	4	30	48	...	38		5
Adjusted <u>a/</u>	6	5	29	38	...	37		5
<u>Republic of Korea</u>								
Unadjusted percentage	86	76	87	91	88	87	83	85
Adjusted <u>a/</u>	86	77	86	93	91	87	83	85

Source: Adapted from G. Rodríguez, "Family planning availability and contraceptive practice", Family Planning Perspectives, vol. 11, No. 1 (January/February 1979), p. 54, tables 2 and 2A.

a/ Education percentages adjusted using analysis of covariance, for years since first marriage, number of living children, and type of place of residence. Type of place of residence percentages adjusted for years since first marriage and number of living children. Based upon unadjusted data in G. Rodríguez, loc. cit.

Table 5. Levels of and trends in knowledge, ever-use and current use of contraception, selected WFS countries

Country	Year of survey	Number	Currently married women ^{a/}		
			Percentage who:		
			Knew a method	Used a method	Are currently using
<u>Africa</u>					
Kenya	1977(WFS)	...	88 <u>b/</u>	32 <u>c/</u>	7
<u>Asia and Oceania</u>					
Bangladesh	1976(WFS)	5 762	83	15	8
Fiji	1974(WFS)	4 658 <u>d/</u>	100 <u>c/</u>	69	40
Indonesia	1973 <u>e/</u> , <u>f/</u>	...	56	12	10
	1976(WFS)	7 880	80	38	26
Jordan	1972 <u>g/</u>	4 938	94 <u>c/</u>	49 <u>c/</u>	22
	1976(WFS)	3 458	97	46	25
Malaysia	1966/67 <u>e/</u> , <u>k/</u>	...	...	...	9
	1974(WFS)	5 811 <u>d/</u>	92 <u>c/</u>	50	33
Nepal	1976(WFS)	5 502 <u>d/</u>	22 <u>c/</u>	4	2
Pakistan	1968 <u>l/</u>	2 910	97	12	6
	1975(WFS)	4 667	75	10	5
Philippines	1968 <u>e/</u> , <u>m/</u>	...	63	19	16
	1978(WFS)	8 866 <u>d/</u>	94 <u>c/</u>	58	36
Republic of Korea	1971 <u>e/</u> , <u>h/</u>	4 949	...	...	25
	1974(WFS)	5 062	98	59	35
	1978 <u>i/</u> , <u>j/</u>	...	...	...	49

(Table continued on following page)

Table 5. (continued)

Country	Year of survey	Number	Currently married women ^{a/}		
			Percentage who:		
			Knew a method	Used a method	Are currently using
<u>Asia and Oceania (continued)</u>					
Sri Lanka	1975(WFS)	6 159	92	45	32
Thailand	1969/70 <u>e/</u> , <u>n/</u>	...	...	...	15
	1975(WFS)	3 517	97	48	33
	1979 <u>e/</u> , <u>n/</u>	...	...	...	48
<u>Latin America</u>					
Colombia:					
Urban	1969 <u>o/</u>	...	65 <u>p/</u>	...	45
Rural	1969 <u>o/</u>	...	36 <u>p/</u>	...	15
Urban	1976(WFS)	...	...	...	54
Rural	1976(WFS)	...	...	...	32
Total	1976(WFS)	2 827	96	62	43
	1978 <u>o/</u>	2 086	94 <u>p/</u>	62	46
Costa Rica	1976(WFS) <u>q/</u>	2 699 <u>d/</u>	100 <u>c/</u>	84	64
	1978 <u>r/</u>	2 037	...	83	64
Dominican Republic	1975(WFS)	1 842 <u>d/</u>	97 <u>c/</u>	49	32
Guyana	1975(WFS)	3 216	96	55	31
Jamaica	1975/76(WFS)	2 302 <u>d/</u>	98 <u>c/</u>	66	38
Mexico	1976/77(WFS)	5 659 <u>d/</u>	90	47	30
	1978 <u>s/</u>	2 855	94	65	40
Panama	1974 <u>e/</u> , <u>t/</u>	...	...	...	31 <u>e/</u>
	1976(WFS) <u>q/</u>	2 723	99	75	54
Peru	1977(WFS)	5 060	82	50	31

(Sources and foot-notes on following page)

(Sources and foot-notes to table 5)

Sources:

Unless otherwise stated, data are from World Fertility Survey First Country Reports and/or data tapes.

- a/ For currently married women, percentages have been calculated based on women currently married or in a union, aged 15-49, unless otherwise specified. For exposed women, percentages have been calculated based on women aged under 50, married or in a union, excluding those who are currently pregnant or infecund (but including those sterilized for contraceptive purposes), unless otherwise specified.
- b/ Percentage calculated on the basis of all women aged 15-50.
- c/ Percentage calculated on the basic of ever-married women.
- d/ Including currently pregnant women who are not currently married, if any.
- e/ Women aged 15-44 years.
- f/ J. Sinquefield and B. Sungkono, "Fertility and family planning trends in Java and Bali", International Family Planning Perspectives, vol. 15, No. 2 (June 1979), pp. 49-51, table 9.
- g/ Jordan, Department of Statistics, National Fertility Survey in Jordan 1972 (Amman, 1976), pp. 80, 114, 128, tables 33, 51 and 58.
- h/ World Fertility Survey, The Korean National Fertility Survey, 1974, First Country Report (Seoul, Korean Institute for Family Planning, 1977), pp. 122, table 69.
- i/ Women aged 20-44 years.
- j/ D. Nortman and E. Hofstatter, Population and Family Planning Programmes: A Compendium of Data through 1978, tenth edition (New York, Population Council, 1981), table 21.
- k/ World Fertility Survey, Malaysian Fertility and Family Survey -- 1974, First Country Report (Kuala Lumpur, National Family Planning Board, 1977), p. 143, table 8.11.

(Foot-notes to table 5 (continued))

l/ N.M. Shah, "Past and current contraceptive practice in Pakistan", Studies in Family Planning, vol. 10, No. 5 (May 1979), p. 166, tables 1 and 2.

m/ M.B. Concepción and P.C. Smith, The Demographic Situation in the Philippines: An Assessment in 1977, Papers of the East-West Population Institute, No. 44 (Honolulu, Hawaii, East-West Center, 1977), p. 34, table 9.

n/ J. Knodel and others, "Thailand's continuing reproductive revolution", International Family Planning Perspectives (September 1980), vol. 6, No. 3, p. 89, table 6. The 1969/70 and 1979 figures have been standardized on the 1970 age distribution of ever-married women. The corresponding age-standardized percentage using among women 15-44 in 1975 is 26.

o/ Encuesta Nacional de Prevalencia del Uso de Anticoncepción, Colombia, 1978 (Bogotá, Corporación Centro Regional de Población, 1979), pp. 52, 60 and 65, tables 5.5, 6.6, 6.13

p/ Percentages have been calculated on the basis of all women aged 15-49.

q/ Women aged 20-49.

r/ Informe de la Encuesta Nacional de Uso de Anticonceptivos, Costa Rica, 1978 (San José, Dirección General de Estadística y Censos, 1978), pp. 50-51, tables 7.2 and 7.3.

s/ Encuesta Nacional de Prevalencia en el Uso de Metodos Anticonceptivos: Informe de Resultados, Mexico (Mexico, D.F., Coordinación del Programa Nacional de Planificación Familiar, 1978), pp. 99 and 103, tables 5.1 and 5.4; R. Rodríguez-Barocio and others, "Fertility and family planning in Mexico", International Family Planning Perspectives, vol. 6, No. 1 (March 1980), p. 6, table 5.

t/ R.W. Rochat and others, "Using contraceptive prevalence surveys to study the demographic impact of contraceptive sterilization in Latin America", paper presented at the IUSSP Workshop on Methodological Aspects of Contraceptive Sterilization (Atlanta, Ga., Center for Disease Control, 1979).

Table 6. Distribution of women currently using a contraceptive, by method used, selected WFS countries

Country	Year	All users		Sterilization		Pill	Injection	IUD	Condom	Diaphragm Foam etc. ^{e/}	Rhythm	With- drawal	Abstain- ence	Douche	Other	
		Total ^{a/}	Modern methods ^{b/}	Traditional methods	Female											Male
<u>Africa</u>																
Kenya (WFS)	1977	100	64	36	13	1	30	8	10	2	1	16	2	16	-	1
<u>Asia and Oceania</u>																
Bangladesh (WFS)	1976	100	61	39	4	6	35	-	6	9	-	13	7	15	1	3
Fiji (WFS)	1974	100 ^{d/}	86	14	39	-	20	...	11	15	... ^{e/}	6	6	—	3	—
Indonesia (WFS)	1976	100	87	13	1	-	56	1	21	7	-	3	1	4	-	5
Jordan	1972 ^{f/}	100 ^{g/}	...	...	— 4 —	—	63	...	4	5	8	10	14	3	5	...
(WFS)	1976	100	69	31	7	-	47	...	8	6	1	8	13	1	-	8
Malaysia	1966/67 ^{l/}	100 ^{m/}	...	...	...^{e/}	... ^{e/}	— 46 —	—	2	9	2	—	—	40	—	—
(WFS)	1974	100	72	28	10	1	— 49 —	—	2	9	1	11	6	5	— 6 —	—
Nepal (WFS)	1976	100	98	2	3	65	17	-	3	9	-	-	-	2	-	-
Pakistan (WFS)	1975	100	72	28	18	1	18	-	12	19	3	2	2	22	-	2
Philippines	1968 ^{n/}	100	17	83	— 1 —	—	9	-	3	3	1	32	47	...	2	2
(WFS)	1978	100	45	55	13	2	13	-	6	10	-	24	26	5	-	-
Republic of Korea	1971 ^{h/}	100 ^{i/}	...	...	— 12 —	—	30	-	28	14	—	—	—	17	—	—
(WFS)	1974	100	77	23	5	9	24	1	23	15	1	13	7	1	1	-
	1978 ^{j/}	100 ^{k/}	...	...	22	11	— 13 —	—	20	—	—	—	34	—	—	—
Sri Lanka (WFS)	1975	100	59	61	— 31 —	—	5	1	15	7	-	25	5	11	-	-
Thailand (WFS)	1975	100	92	8	19	6	41	6	18	1	-	3	3	2	-	1

(Table continued on following page)

Table 6. (continued)

Country	Year	All users		Sterilization		Pill	Injection	IUD	Condom	Diaphragm, foam, etc. ^{c/}	Rhythm	With- drawal	Abstain- ence	Douche	Other	
		Total ^{a/}	Modern methods ^{b/}	Traditional methods	Female											Male
Latin America																
Colombia:																
Urban	1969 ^{o/}	100	51	49	4	-	22	-	11	7	7	16	24	...	9	—
Rural	1969 ^{o/}	100	40	60	7	-	13	-	7	7	7	20	33	...	7	—
(WFS)	1976	100	72	28	9	-	31	1	20	4	5	12	11	2	1	2
	1978 ^{o/}	100	81	19	16	-	37	... ^{p/}	17	3	8	9	... ^{e/}	...	10	—
Costa Rica (WFS)	1976	100	83	17	19	2	35	3	8	14	3	8	7	1	-	-
	1978 ^{q/}	100	86	14	22	1	37	3	7	14	2	8	6	...	1	—
Dominican Re- public (WFS)	1975	100	84	16	38	-	— 26 —	—	9	5	7	4	11	...	...	1
Guyana (WFS)	1975	100	90	10	27	-	29	1	18	9	6	3	4	2	-	1
Jamaica (WFS)	1975- 1976	100	94	6	21	-	31	16	5	17	4	1	4	1	-	-
Mexico (WFS)	1976/77	100	77	23	9	1	36	6	19	2	5	10	12	...	1	-
	1978 ^{r/}	100 ^{s/}	83	17	18	-	35	7	16	3	4	7	7	...	3	—
Panama (WFS)	1976	100 ^{t/}	85	15	39	1	32	1	7	2	3	5	6	3	1	1
Peru (WFS)	1977	100	36	64	9	-	13	3	4	3	3	35	10	7	11	2

(Sources and foot-notes on following page)

(Sources and foot-notes to table 6)

Sources: Unless otherwise stated, data are taken from World Fertility Survey Country Reports and magnetic data tapes. Where results of one or more surveys are given, the World Fertility Survey is so designated.

- a/ Percentages calculated on the basis of currently married current users aged 15-49 or under 50, unless otherwise specified.
- b/ Sterilization, pill, injection, IUD, condom, diaphragm, and foam and other spermicides.
- c/ Including other spermicides, such as jelly, suppositories.
- d/ Excluding women practising post-partum abstinence.
- e/ Included with "other" category.
- f/ Jordan, Department of Statistics, National Fertility Survey in Jordan 1972 (Amman, 1976), pp. 123, 128, tables 56, 58.
- g/ Figures do not add to 100 because women using a combination of methods are shown under each method.
- h/ Factors Affecting the Use and Non-use of Contraception: Findings from a Comparative Analysis of Selected KAP Surveys (United Nations publication, Sales No. E.79.XIII.6), p. 52, table 6.
- i/ Percentages calculated on the basis of users aged 20-39.
- j/ D. Nortman and E. Hofstatter, Population and Family Planning Programs: A Compendium of Data Through 1978, tenth edition (New York, Population Council, 1981), table 21.
- k/ Percentages calculated on the basis of users aged 20-44.
- l/ World Fertility Survey, Malaysian Fertility and Family Survey - 1974, First Country Report (Kuala Lumpur, National Family Planning Board, 1977), p. 143, table 8.11.
- m/ Percentages calculated on the basis of users aged 15-44.
- n/ Data supplied by the Government of the Philippines.
- o/ Encuesta Nacional de Prevalencia del Uso de Anticoncepción, Colombia, 1978 (Bogotá; Corporación Centro Regional de Población, 1979), p. 65, table 6.13.

(Foot-notes continued on following page)

(Foot-notes to table 6 (continued))

p/ Included with diaphragm etc.

q/ Informe de la Encuesta Nacional de Uso de Anticonceptivos, Costa Rica, 1978 (San José, Dirección General de Estadística y Censos, 1978), p. 55, table 7.6.

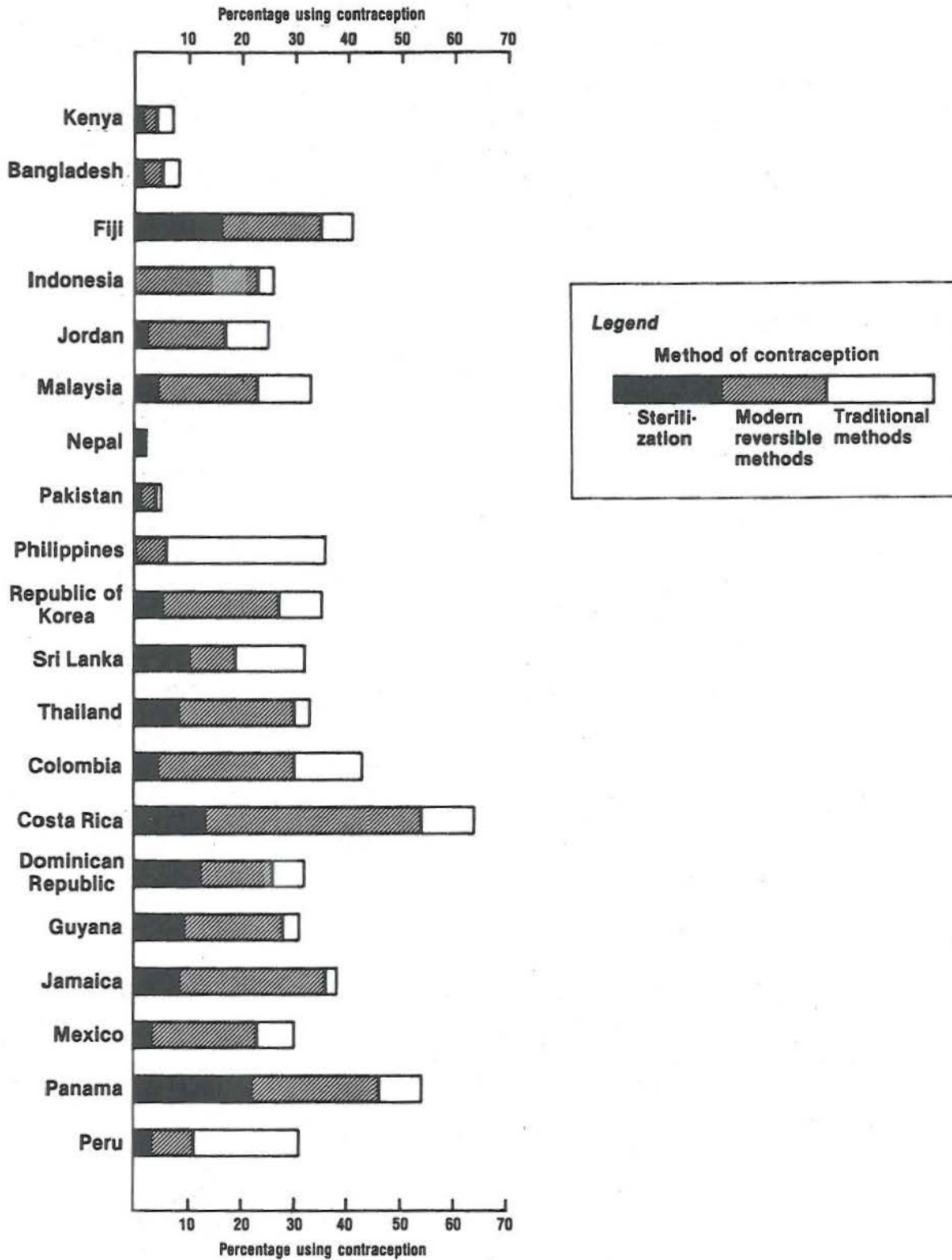
r/ Encuesta Nacional de Prevalencia en el Uso de Metodos Anticonceptivos; Informe de Resultados, Mexico (Mexico, D.F., Coordinación del Programa Nacional de Planificación Familiar, 1978), p. 102, table 5.3.

s/ Percentages calculated on the basis of current users among all women aged 15-49.

t/ Percentages calculated on the basis of users aged 20-49.

Figure 1

Percentage of currently married women who are currently using contraception, by type of method, 20 WFS countries



Chapter II

DIFFERENTIALS IN CONTRACEPTIVE USE BY DEMOGRAPHIC FACTORS AND DESIRE FOR MORE CHILDREN

In order to understand differences among countries in patterns of contraceptive use, it is important to examine the role of purely demographic factors (such as age, number of children and child death) as well as of preferences (for family size and sex composition) in determining these differentials. Differentials in contraceptive practice according to certain demographic variables such as age and number of living children may be expected to persist over time and from place to place since they partially reflect changes over the family life cycle in the desire to control fertility. Thus, it is reasonable to suspect that intercountry differences in the rate of practice of contraception might be at least partially due to differences in the demographic composition of the population. Couples who have experienced the death of a child might be expected to be less likely than others to use contraception and therefore intercountry differences in levels and patterns of child mortality may also contribute to an explanation of intercountry differences in contraceptive practice. Cultural values which affect family size preferences as well as sex preferences may also play a role in explaining intercountry differences in contraceptive use. A preference for sons has been observed in many, though not all, developing countries. These preferences can only influence fertility if couples use methods of fertility control in a way that is contingent on the sex composition of the children they bear.

In the course of the transition to low fertility, demographic differentials in contraceptive use may be expected to undergo some change in form while maintaining the same over-all direction of relationship. Contraceptive practice is usually not entirely absent even in societies in which the level of fertility is high and apparently stable. Logic would dictate that contraceptive practice would occur mainly among older women, among women with large families, and among women, in these countries, who state that they want no more children. When marital fertility begins to decline, it is generally accepted that it declines at first at the older ages, as couples who already have several children or more than they want begin to limit the size of their families. Statistics gathered by family planning programmes have consistently shown a decrease over time in the age and family size of programme acceptors. ^{1/}

^{1/} This is probably due in part to the eventual exhaustion of the pool of older, high parity women who have not already become acceptors (the saturation hypothesis) as well as to an increased propensity of younger, low-parity women to begin using contraception. J.A. Ross, "Declines in the age and family size of family planning program acceptors: international trends", Studies in Family Planning, vol. 10, No. 10 (October 1979), pp. 290-299.

These changes in demographic differentials in contraceptive use in the course of the demographic transition can be partially explained by the effect of modernization on family size and sex composition preferences (as well as on the desire for child spacing). In many developed countries, where couples tend to want small families, current contraceptive practice is nearly as high among women with one child as among those with two or more children, although women with no children are less likely than others to use contraception. 2/

In this chapter, WFS data from the 20 countries discussed in chapter I will be used as a basis for a comprehensive analysis of differentials in contraceptive use with respect to demographic factors and preferences. After a preliminary discussion of the appropriateness of using women exposed to the risk of pregnancy as the relevant base population for the subsequent analysis, the following variables will be examined in relation to contraceptive use: (1) age and number of living children; (2) desire for more children and sex composition of the family; and (3) the experience of the death of a child. The choice of variables has been constrained by a desire to maintain comparability across countries. Thus, variations within countries in contraceptive use by region, ethnic group or religion have not been considered here. These and other factors may have a very important influence on the practice of contraception which is independent of the effects of the variables examined here. Basic tabulations showing the relationship of the latter variables with contraceptive practice and fertility can be found in most of the first country reports, and these variables will in many cases receive attention in country-specific analysis. 3/

2/ Fertility and Family Planning in Europe Around 1970: A Comparative Study of Twelve National Surveys (United Nations publication, Sales No. E.76.XIII.2), p. 159, table 128.

3/ Several country-specific analyses which examine factors related to contraceptive use have been compared and others are in preparation. See J.G. Cleland and others, Illustrative Analysis: Socio-economic Determinants of Contraceptive Use in Thailand, Scientific Reports, No. 5 (Voorburg, the Netherlands, International Statistical Institute, August 1979); T.N. Pend and I Abdurahman, "Factors affecting contraceptive use in Peninsular Malaysia"; B. Soeradji and S.H. Hatmadji, "Contraceptive use in Java-Bali: multivariate analysis on the determinants of contraceptive use"; and N.I. Kim and B.M. Choi, "Preferences for number and sex of children and contraceptive use in Korea", papers presented at a Seminar on the Use of Multivariate Techniques in Second-stage Analysis of World Fertility Survey Data (Bangkok, August 1980) (mimeo.).

A. Exposure to the risk of pregnancy

For a discussion of trends in contraceptive use the most convenient base population is "currently married women in the reproductive ages", because reports of most surveys that precede the WFS tabulated statistics on that basis. However, the group of currently married women contains many who cannot reasonably be expected to be current contraceptive users: those who are currently pregnant, those who believe themselves incapable of having more children or who, owing to recency of birth, are amenorrheic and believe themselves protected from the risk of pregnancy, and those practising abstinence for a non-contraceptive reason (such as temporary absence of the spouse, recency of the last birth and, in some cultures, terminal abstinence). It is not possible to observe all the categories of non-risk for all countries. However, all of the WFS surveys permit identification among the currently married of a group of "exposed women", i.e., women who are non-pregnant and who believe themselves to be fecund, plus the contraceptively sterilized (who are counted as current contraceptive users). This group provides a more refined base population for the analysis of differentials in contraceptive use, and "exposed women" will be the base population employed for all the discussion in this chapter.

Table 7 shows the percentage of currently married women who were, at the time of the interview, pregnant, involuntarily infecund and exposed, the percentage of all women in the reproductive ages who were currently married, and exposed women as a percentage of all women in the reproductive ages. In all of these developing countries, two thirds or less of the women in the reproductive ages were exposed to the risk of pregnancy at the time of the interview. ^{4/} Among currently married women, the percentages ranged from 68 to 85. Although there is considerable variation within each region, the percentage of currently married women who were exposed is slightly lower, on average, in the Asian countries than in the Latin American countries. This is due more to higher estimates of infecundity in Asian countries than to higher percentages currently pregnant. These reports of level of infecundity should not be taken at face value. Except where non-contraceptive sterilizing surgery is common, as in the United States of America, most women conclude that they are infecund only if they have engaged in sexual relations for a long period when they were not using contraception and have failed to become pregnant. In countries where a high proportion of women practise contraception many women who have become infecund have no way of knowing it. Inter-country

^{4/} In some countries premarital sexual activity is common. The WFS definition of "marriage" is a broad one, including legal and consensual unions and, in some countries, visiting unions. In this report, these various types of unions are, for convenience, referred to as "marriages". There are some sexually active women who were counted as never married; these are excluded from discussion here because contraceptive use information for such women is lacking for most of the countries.

variations in the level of self-reported infecundity can thus be expected to reflect, *inter alia*, variations in proportion practising contraception in the recent past, and this is probably a major reason for the negative association in these data between "percentage infecund" and "percentage practising contraception". Reported rates of involuntary infecundity are lower in several developed countries for which comparable data are available. 5/

Women may be temporarily removed from risk of pregnancy for reasons other than current pregnancy and infecundity. Where lengthy breast-feeding is the norm, a large fraction of women may be in a state of post-partum amenorrhea at any given time, and these women may not consider themselves to be at risk. Information about breast-feeding practices is available for all of the WFS survey countries but, while it is possible to draw conclusions about the approximate average duration of amenorrhea in each population, 6/ it is not possible to identify the individuals that are currently amenorrheic. Direct information about post-partum amenorrhea is accessible only for Fiji, Kenya and the Philippines, among the countries considered here. Twenty-one per cent of Filipino women whose last pregnancy led to a live birth and who were not currently pregnant were still amenorrheic at the time of the interview. In Fiji, 9 per cent, and in Kenya a little over one-third, of exposed women were in this state. There is no direct information in the WFS about the extent to which women believe themselves protected by amenorrhea. 7/

5/ H. Leridon, "Les facteurs de la fécondité dans les pays développés", paper presented at the World Fertility Survey Conference (London, 7-11 July 1980), p. 25, table 11. The United States has relatively high levels of non-contraceptive sterility due to the prevalence of sterilizing operations performed for health reasons.

6/ It was estimated, on the basis of several studies, that the average amenorrhea increases with the average duration of breast-feeding roughly as follows:

<u>Months of breast-feeding</u>	<u>Months of amenorrhea</u>
0	2
3	3
6	4-5
9	6
24+	15

H. Leridon, "Biostatistics of human reproduction", in C. Chandrasekaran and A. Hermalin, eds., Measuring the Effect of Family Planning Programs on Fertility (Dolhain, Belgium, IUSSP, 1975), pp. 93-131; see also, R.J. Lesthaege and H.J. Page, "The post-partum non-susceptible period: development and application of model schedules", Population Studies, vol. 34, No. 1 (March 1981), pp. 143-169.

7/ Although amenorrhea does provide fairly effective protection from conception ovulation often resumes in the month preceding the first menstrual period, and women may thus become pregnant while amenorrheic. Some women may believe that there is no risk of pregnancy during amenorrhea, however.

Factors other than breast-feeding and the associated period of ammenorrhea may also be important in some countries. Women may be protected from pregnancy for a long period after a birth by the practice of post-partum abstinence. This practice may not be regarded by the people themselves as a form of contraception, although it certainly has the effect of increasing birth intervals. In most of the countries discussed here, post-partum amenorrhea probably endures for a longer period, on average, than does post-partum abstinence, but data regarding this are unavailable for most countries. For example, in the Philippines, 9 per cent of women whose last pregnancy ended in a live birth and who were not currently pregnant were practising abstinence, 8/ compared with 21 per cent amenorrheic (at the time of the interview) among women whose last pregnancy ended in a live birth.

For two countries, Fiji and Kenya, it was possible to examine the level of current contraceptive use among exposed women from the standpoint of whether the women were practising post-partum abstinence, were amenorrheic or were currently breast-feeding (table 8). Of exposed women who had borne at least one child, 14 per cent were either amenorrheic or were practising post-partum abstinence in Fiji, while 41 per cent were in one of these states in Kenya. In both countries, the level of contraceptive use among women who were amenorrheic but were not practising post-partum abstinence was intermediate between the level among those practising abstinence and those who were not amenorrheic. 9/

This indirectly suggests that some but by no means all of the women regarded amenorrhea as adequate protection against closely spaced pregnancies. In Kenya, but not in Fiji, women who were currently breast-feeding were

8/ Republic of the Philippines Fertility Survey, 1978, First Report, tables 6.4.3 and 6.2.5.

9/ In Fiji, nearly one fourth of those practising post-partum abstinence were coded as contraceptive users. While a few of these may have been coded erroneously, most of these users had been contraceptively sterilized, a procedure which is often performed immediately post-partum. Others were using an IUD, which may also be accepted by the woman immediately after a birth.

somewhat less likely than others to be using contraception, within the group of amenorrhoeic women and within the group that was not amenorrhoeic. 10/ In Kenya, all of these effects were rather small in absolute terms; women were unlikely to be using contraception regardless of their exposure status.

Another factor which is important in some countries is the temporary separation of spouses; information about this is also lacking for most countries. In Kenya, for which statistics on this are available, only 1 per cent of women were not at risk because of the husband's absence in addition to those removed from risk by the other factors discussed above. 11/

Variations across countries in patterns of breast-feeding and post-partum abstinence make it difficult to define exposure to the risk of pregnancy in precise terms. The definition of exposure adopted in the present report is a practical one given the information available in a practical one given the information available in a comparable form from the WFS surveys. However, in interpreting findings, it must be kept in mind that these other non-contraceptive factors (including the practice of abortion) may be important in understanding cross-national patterns in contraceptive use. In addition, it must be noted that self-defined infecundity is a negative function of the level of contraceptive use.

Therefore, the group measured as exposed in these data, which excludes those currently pregnant and those who believed themselves to be infecund, includes some women who were using contraception but did not realize that they were infecund and some women practising prolonged breast-feeding and/or post-partum abstinence who were non-contraceptive users but not in fact exposed.

10/ There is inconclusive evidence that lengthy breast-feeding may continue to depress level of fecundability even after menstruation resumes, but even if there is some residual effect of breast-feeding, it probably does not approach the degree of protection offered by traditional methods of birth control. M.L. Berman and others, "Effect of breast-feeding on post-partum menstruation, ovulation, and pregnancy in Alaskan Eskimos", American Journal of Obstetrics and Gynecology, pp. 524-534, vol. 114 (15 October 1972); A. Jain and others, "Lactation and natural fertility" in J. Menken and H. Leridon, eds., Patterns and Determinants of Natural Fertility (Liège, Ordinal, 1979). Breast-feeding women may be reluctant to use some methods of contraception not because they believe themselves to be protected from pregnancy but because they fear that contraception will interfere with the flow of breast milk. There is some evidence that combined and sequential pills do shorten the duration of lactation, although other pill formulations may not do so. F.W. Rosa, "Resolving the 'public health dilemma' of steroid contraception and its effects on lactation", American Journal of Public Health, vol. 66, No. 8 (August 1976) pp. 791-792.

11/ Kenya, Central Bureau of Statistics, Kenya Fertility Survey Major Highlights, table 35, op. cit. Only absences of three or more months' duration are counted here.

As contraceptive use increases, the amount of unreported infecundity will increase at the same time as the importance of factors other than contraception decrease. It is difficult to assess how these counteracting biases will affect the interpretation of intercountry differences in contraceptive use, but it is clear that particular country characteristics must be kept in mind when interpreting these differentials.

Table 9 shows the distribution of exposed women according to the characteristics to be analysed in this chapter. This provides a backdrop against which the differentials within and between countries can be assessed.

B. Differentials in contraceptive practice by age and number of living children

Current contraceptive use is typically highest among women in the middle of the reproductive ages, from 25 to 39 years, although the precise age at which contraceptive use peaks varies (table 10 and fig. II). Older women are, in most countries, less likely to be using contraceptives, even though women who believe themselves to be infecund are excluded from the base population in the comparison shown here. Although young women are, in most countries, much less likely to be using a method than are women in the peak ages 25-39, the level of current use among younger married women is fairly high in many countries, suggesting that contraception is frequently used to space births. (This is examined more directly below.)

The decline in use at the higher ages is not always a large one. The difference between the percentage using contraception among women aged 45-49 and the level in the five-year age-group with the highest use was under 10 percentage points in nine of the 20 countries: Bangladesh, Kenya, Nepal and Pakistan (where fewer than 20 per cent of any age-group were using contraception) and also in Fiji, Indonesia, Jordan, Panama and Sri Lanka.

There are several possible reasons for the typical curvilinear relationship between contraceptive use and age. Older women may be less likely to use contraception because of lack of information or because of adherence to traditional norms which discourage contraceptive use. Young women may be less subject to the influence of tradition, but some may also be relatively poorly informed about contraception. Furthermore, many of them will be trying to have more children. These possibilities may also apply in respect to the variations by parity noted below. A crude measure of contraceptive knowledge, the recognition of any method, shows that in most countries women aged 25-39 years are more likely to be informed about contraception than are younger or

older women, 12/ but in many countries, among exposed women, the difference by age in recognition of a method is much smaller than the age differential in contraceptive use.

It seems self-evident that motivation to use contraception is determined to a major extent by the number of children already in the family. It might be expected therefore that the percentage of women currently using contraception would increase as family size increases. Table 11 and figure III show the level of current contraceptive use among exposed women by number of living children. In all countries the level of contraceptive use increases with family size - in most cases very sharply - among women with zero to three children. In general, there is very little further increase with family size in the level of contraceptive use once a moderate family size has been reached and, in many countries, the level of use among women with large families is lower than among those with a moderate number of children. These variations are evidently influenced by the age of the woman. As discussed above, older women, who tend to have large families, are less likely to be using contraception than are those in the middle years of the reproductive period. 13/

Many of the countries in which the level of use shows little or no tendency to decline at higher family sizes are those in which the over-all level of use is very low - Bangladesh, Kenya, Nepal and Pakistan. In these countries, fewer than 20 per cent of women with seven or more children were using contraception at the time of the interview.

Although there are some general differences between the Latin American and the Asian countries in the shape of the curves displayed in figure III, it cannot be said that there is a single Asian pattern or a single Latin American pattern. In most Asian countries there is a positive association of family size with level of use, at least until the family contains three or four children, while in many Latin American countries use is not greater among couples with three or more children than among those with two children.

12/ Martin Vaessen, Knowledge of Contraceptive Methods, World Fertility Survey Comparative Studies, No. 8 (Voorburg, the Netherlands, May 1980).

13/ The relationship between family size and contraceptive use is usually similar in form, though less pronounced, even after statistical control for age and socio-economic variables. Results not shown.

While the level of use among childless women was always much lower than among women who had a living child, the level among childless exposed women 14/ was over 30 per cent in several Latin American countries and over 10 per cent in all the Latin American countries studied. By contrast, in Kenya and the Asian countries, with the exception of the Republic of Korea, 10 per cent or less of exposed women with no children were using contraception. These levels of use among childless women may be somewhat misleading; those women who use contraception before the first child will, naturally, remain childless longer than other women and thus, at the time of the interview, would be over-represented in the group of non-pregnant women with no children. In several of the countries, women were asked how many children (or how many pregnancies) they had had before they first used contraception. Table 12 shows the percentage who reported using contraception before they had a live birth (or before they became pregnant), tabulated by age. 15/ When compared with table 11, table 12 does suggest that the level of use among exposed childless women gives a misleadingly high impression of use before the first child, but it also shows that, in five of the six countries (with the exception of Sri Lanka), younger cohorts report much higher levels of use before the birth of the first child. In Costa Rica, Colombia and Panama, between 20 and 30 per cent of the younger ever-married women reported having used contraception before they had a child. Thus, although a large majority of women in those countries do not begin to use contraception until they have one or more children, contraceptive use in order to delay the first child is no longer very uncommon in a number of Latin American countries, and use early in marriage appears to share to some extent in the general increase in use in a number of Asian countries.

There is an interesting difference between the two English-speaking countries in or near the Caribbean and the other Latin American countries. In Guyana and Jamaica, women with one child are only slightly more likely to be using contraception than are women with no children, while, in the other Latin American countries, contraceptive use among women with one child is much more frequent than among childless women. This difference is related to cultural differences in marriage patterns. In Guyana and Jamaica

14/ Figures for contraceptive use for women with zero live births (not shown) differ little from those for women with zero living children.

15/ Data available for six countries only.

and some other countries in or near the Caribbean, visiting unions, which are less stable than either common law or legal unions, are very common, especially among young women. In Guyana and Jamaica, 42 and 44 per cent, respectively, of childless women in visiting unions were using contraception, compared with 26 and 37 per cent, respectively, among women with one child. Childless women in visiting unions are much more likely than childless women in other types of unions to be using contraception. 16/ This may represent an attempt to delay childbearing until there is a prospect of forming a more stable family. Conversely, women may enter more stable unions only after becoming pregnant or bearing a child.

The Republic of Korea exhibits a pattern distinct from that of all the other Asian countries. The level of contraceptive use among women with no children is higher than in other Asian countries and, as observed for Guyana and Jamaica, there is little difference in level of use between women with zero children and those with one child. Use increases rapidly after one child to a peak among Korean women with four children and then declines substantially with further increase in family size.

Some perspective can be gained by comparing the patterns observed for developing countries with those in developed countries, as summarized in a comparative analysis based on data gathered around 1970. 17/ The curvilinear pattern noted in table 11 and figure III for developing countries was also found in the developed countries; in the latter, the peak level of contraceptive use was generally observed among women with two children. In some countries (including Czechoslovakia, Hungary and Yugoslavia) the decline with increased family size was quite pronounced, while in others (including Belgium, Denmark, England and Wales, France and the United States of America) it was small. The over-all pattern in the latter countries resembled that observed in the non-Caribbean countries of Latin America, except that the over-all level of use was higher, and the level of use among childless women relative to that among women with one child was also somewhat higher in those developed countries. In other developed countries, however, notably Poland and Yugoslavia, the level of use among

16/ Jamaica Fertility Survey, 1975/76, Country Report, vol. I, p. 74;
Guyana Fertility Survey, 1975, Country Report, vol. I, p. 59.

17/ The developed countries for which relevant information was presented are Belgium, Denmark, England and Wales, Finland, France, Hungary, Poland, the United States of America and Yugoslavia. The available statistics for developed countries are somewhat incomparable with those in table 11. The developed country figures refer to contraceptive use by parity rather than by number of living children and exclude contraceptive sterilization, although this method may have been of minor importance in the countries studied, except for the United States and England and Wales. The statements made above are based primarily on a table showing contraceptive use by parity, for currently married, non-pregnant, fecund women. Fertility and Family Planning in Europe Around 1970: A Comparative Study of Twelve National Surveys (United Nations publication, Sales No. E.76.XIII.2), p. 159, table 128.

childless women was lower than in some of the South American countries. Thus there is no clear distinction between patterns observed in developed countries and some of the developing countries. Within both groups of countries there is diversity in the level of use among couples with no children relative to those with at least one child.

Finally, it may be noted that in none of the developing countries shown in table 11 does contraceptive use increase so sharply and regularly with family size as does the stated desire for no more children; ^{18/} in most of the countries, among women with small families (0-2 children), the percentage of exposed women using contraception is higher than the percentage who say that they want no more children. Thus, contraception in developing countries should not be viewed solely as a practice that couples adopt in order to limit their family size; it is also used for birth spacing.

Standardization of rates of contraceptive use among exposed women by number of living children or age shows that intercountry differences in demographic composition have only a modest effect on the magnitude of observed differences in the level of contraceptive use. Tables 10 and 11 show the level of current use among exposed women, standardized for age and family size, respectively. ^{19/}

^{18/} A summary for 15 countries of the percentage desiring no more children, according to size of family, may be found in United Nations Population Division, "Selected factors affecting fertility and fertility preferences in developing countries: evidence from the first fifteen WFS country reports", paper prepared for the World Fertility Survey Conference (London, July 1980), p. 34, table 15.

^{19/} Direct standardization involves calculation of a weighted average of within-group "rates" (in this case, the rates are percentages of exposed women practising contraception) using a standard proportional distribution to form the weighted average:

$$\tilde{r}_i = \sum_j r_{ij} w_j$$

where \tilde{r}_i is the standardized rate for country i

r_{ij} is the rate within group j of country i

w_j is the weight for group j .

For example, the proportion using contraception in Kenya standardized on the age distribution of Colombian women, is calculated as follows:

$$10 = 3(.055) + 7(.178) + \dots + 12(.082).$$

Thus if women in Kenya had the age distribution of Colombian women but the age-specific rates of contraceptive use observed in Kenya, the level of contraceptive use among exposed women would be 10 per cent. Further examples may be found in United States Department of Commerce, The Methods and Materials of Demography, by Shryock and Siegel, vol. II (Washington, D.C., 1973), pp. 481-485.

The Colombian age and family size distributions (see table 9) were used as standards. 20/ After standardization for either age or number of children, the variation from country to country is nearly as pronounced as before standardization.

Thus differences among countries in levels of contraceptive use among married women of reproductive age, unlike differences in cumulative fertility, can be accounted for only to a minor extent by differences in age or other demographic variables. Demographic variables are related to contraceptive use within each population, but there are typically very large differences among populations in the level of contraceptive use for women of any particular age or parity. 21/

C. Differentials in contraceptive practice by desire for more children and sex composition

Although family size and sex composition goals are often viewed as the primary determinants of contraceptive use, the desire to limit family size is not the only reason for using contraception. Couples may use contraception in order to ensure adequate spacing between births or because the wife is in poor health and wishes for that reason to avoid pregnancy. The discussion above relating to the comparatively wide use of contraception among women with small families suggests birth spacing as an additional reason. In some Latin American countries, use in order to postpone the start of childbearing is also becoming common.

In most of the countries 22/ between 50 and 65 per cent of the exposed women said that they did not want more children. Lower percentages were reported in Kenya (16), Nepal (30), Indonesia, Jordan, Malaysia, Pakistan and Guyana (40 to 49), and a higher percentage (74) in the Republic of Korea.

Table 13 shows the percentage of exposed women using contraception, among those who want more children or are undecided, and among those who want no more. It distinguishes use of any method and use of a modern method: pill, injectable, IUD, condom, sterilization and female barrier methods, i.e., techniques offered most often by family planning programmes.

20/ Colombian women have an age and family size distribution near the median for the countries examined here. Because patterns of use by age and family size are not identical for all countries, the choice of standard has some effect on apparent intercountry differences after standardization, but alternative reasonable choices of standard would not affect the conclusion reached above.

21/ A similar conclusion is reached using a different technique by A.I. Hermalin and W.M. Mason, "A strategy for the comparative analysis of WFS data, with illustrative examples", in The United Nations Programme for Comparative Analysis of World Fertility Survey Data (New York, United Nations Fund for Population Activities, 1980), pp. 90-168.

22/ The discussion excluded Bangladesh, where some women were asked, "Do you want another child soon?". The data for Bangladesh are none the less shown in table 13.

Exposed women who do not want more children were, as would be expected, more likely than others to be using contraception in all countries (see table 13, left-hand columns), and in 19 of the 20 countries at least one half of the current users were women who wanted no more children (right-hand columns of table 13). The exception is Kenya, where 84 per cent of exposed women wanted more children or were undecided, and only about two fifths of current users were women who wanted no more children.

In 17 of the 20 countries, at least 40 per cent of women who said that they did not want more children were not using any method of contraception. Only in Costa Rica were at least three fourths of the women who did not want more children using a method. Statistics presented later show that this gap between stated desire to stop bearing children and current contraceptive practice is, in most countries, heavily concentrated among women with little or no education.

Use of modern methods is not confined to women who want no more children (and who might for this reason be highly motivated to practise contraception effectively), although it generally comprises a slightly larger proportion of total use among them than among the others (fig. IV). Only in Kenya, the Philippines and Sri Lanka was the proportion employing a modern method at least 10 percentage points lower among current contraceptive users who wanted more children than among those who did not want more. Thus, where use of traditional methods is prevalent among women who want more children, it is also found among those who do not.

In most of the Latin American countries, the level of use is quite high among women who want more children, ranging from 25 per cent in the Dominican Republic to 71 per cent in Costa Rica, an indication that deliberate birth spacing is common. In the Asian and Oceanic countries, however, the level of use among women who want more children is generally lower, ranging from 0 in Nepal to 38 per cent in Fiji. This compares to a range in the percentage using contraception among exposed women who wanted no more children in the Latin American countries of 46 (in Guyana) to 84 (in Costa Rica) and to a range in the Asian and Oceanic countries of 8 (in Nepal) to 74 (in Fiji) among such women.

In countries in which contraceptive practice is relatively frequent among women who want no more children, it is also relatively frequent among those who want more children. The correlation among the 19 countries (excluding Bangladesh, for which the information is not comparable to that for the other countries) between "proportion using among those who want more children" and "proportion using among those who want no more" is over 0.8. In other words, where use of contraception is fairly widespread, both birth spacing and family limitation are being practised.

As noted earlier, the extent to which lengthy breast-feeding is practised may be an important determinant of demand for contraception for the purpose of spacing births. It is clear, though, that use of contraceptives among women who want more children varies among countries closely with the level of use among women who want no more, suggesting that most of the intercountry differences in the level of use among women who want more children can be attributed to the same

factors that influence use among women who want no more children. Contraceptive use may be restricted by lack of information or lack of availability of modern methods or by disapproval or distrust of methods that are available; these factors will limit use by women who would prefer longer birth intervals as well as by women who wish to limit their family size. It is expected that at any given moment, the level of use among exposed women who wish to have more children will be lower than the level among women who want no more, if only because at any particular time some of the women who want more children will already have experienced a long enough delay and will be hoping for another pregnancy. The level of use among women who want no more children may be regarded as an upper limit to the level of current use that is expected to appear among women who want more children. Thus the ratio between the level of use among women who do want more children and women who do not provides a rough index of the intensity of use for birth spacing. 23/

Figure V shows a comparison between this index of the intensity of use for spacing births and a rough measure of the extent of practice of extended breast-feeding - the percentage of women who breast-fed more than six months in the last closed birth interval. It can be seen that, as hypothesized, the practice of extended breast-feeding does show a fairly strong relationship to the index of intensity of contraceptive use for spacing of births.

As a rough generalization, extended breast-feeding has been found primarily in those countries and in those social groups within countries in which the level of contraceptive use is low. 24/ Fertility will tend to rise as the duration of breast-feeding decreases, unless, to compensate, the use of family planning methods increases. While broad comparisons of a cross-section of developed and developing countries show that, on average, the increased use of family limitation methods has more than compensated for decreased breast-feeding; 25/ trends in these two practices cannot be assumed to move in exact conjunction with each other over shorter intervals of time within particular societies. There is obviously nothing automatic about this relationship between breast-feeding and the use of contraceptives.

23/ Given that both numerator and denominator are affected by the same within-country constraints affecting availability, this index should be relatively unbiased.

24/ J. Bongaarts, "The fertility-inhibiting effects of the intermediate fertility variables", Working Paper No. 57, Center for Policy Studies (New York, Population Council, May 1980); A.K. Jain and J. Bongaarts, "Socio-biological factors in exposure to child-bearing: breastfeeding and its fertility effects", paper presented at the World Fertility Survey Conference (London, July 1980).

25/ J. Bongaarts, op. cit.

The view is commonly held that the sex composition of the family may also be an important factor affecting the motivation for contraceptive use. It has been reported that couples in many developing countries prefer a family that contains more sons than daughters, 26/ and that they may deliberately surpass their desired parity, unless they have one or two sons by the time they reach the most preferred family size. The WFS First Country Reports included tabulations of the level of current contraceptive use and of desire for more children (and, among women who wanted more children, preferred sex of the next child) by sex composition of the current family. An examination of stated desire for more children and preferred sex of the next child for 15 of the WFS countries 27/ suggested that in most countries women prefer to have at least one child of each sex. In several, the desire to have at least one son appeared stronger than the desire to have a daughter, but this was not a universal pattern. Preference for sons is found in many Asian countries, including Bangladesh, Jordan, Nepal, Pakistan and the Republic of Korea. In some other Asian countries and some Latin American countries, women with at least one son and at least one daughter were more likely than others with the same size family to say they wanted no more children, but there was no clear preference for sons, and there was no discernible differential by sex composition in Costa Rica and the Dominican Republic.

The relationship between sex composition and current contraceptive use should, in general, be weaker than the relationship between sex composition and desire for more children. 28/ Where fertility regulation is not widely practised, sex preferences will be nearly irrelevant to achieve fertility. Where most couples prefer large families, sex preferences tend to have little effect on aggregate fertility regardless of the extent of fertility control practised once the desired size is reached because, if most couples desire large families, few will reach the desired size without bearing a son and a daughter. 29/ The fact that contraception is practised to space births as well as to limit family size will also tend to render the association between sex composition and contraceptive use weaker than that between sex composition and desire for more children.

26/ Nancy E. Williamson, Sons or Daughters, A Cross-cultural Survey of Parental Preferences (Beverly Hills, Calif., Sage Publications, 1976).

27/ These are Bangladesh, Colombia, Costa Rica, Dominican Republic, Fiji, Indonesia, Malaysia, Mexico, Nepal, Pakistan, Panama, Peru, Republic of Korea, Sri Lanka and Thailand. United Nations Population Division, "Selected factors affecting fertility and fertility preferences in developing countries: evidence from the first fifteen World Fertility Survey country reports", paper presented at the World Fertility Survey Conference (London, July 1980).

28/ One study based on data from surveys other than the WFS bears out this expectation. R. Freedman and L.C. Coombs, Cross-cultural Comparisons: Data on Two Factors in Fertility Behavior, Occasional Paper of The Population Council (New York, 1974).

29/ This statement is based on the assumption that the number of children, not simply the sex of children, is important to couples, and that couples who achieve an acceptable number of sons or daughters before they have as many children as they prefer will tend to go on to have the preferred number.

Results of any examination of current contraceptive practice by the sex composition of the respondent's family are likely to underestimate the effect of sex preferences on contraceptive practice. Even if one kind of sex preference - a preference for at least two sons, for example - is heavily dominant in a society, some couples will have other preferences - a preference for at least one son and at least one daughter, for example, or an indifference with regard to the number of sons but a desire to have daughters. When aggregate statistics are examined, only the average pattern of preference will be revealed; the existence of a minority pattern that is opposite in effect to the majority pattern tends to give the impression that sex preferences have a smaller impact on intention to have more children and on contraceptive use than is actually the case. 30/ A more sophisticated measure of sex preference, the Coombs sex preference scale, provides a measure of sex preferences for each individual. This measure shows that there is indeed a distribution of preferences within societies, with a minority of couples preferring daughters even when most couples prefer more sons than daughters. 31/ This measure also reveals an underlying preference for sons in some societies in which the preference does not express itself clearly in the form of differentials in the stated desire to continue bearing children. This was true for the Malaysian survey data examined here; the Coombs scale reveals that most Malaysian women prefer more sons than daughters, but this does not necessarily mean that they will be willing to revise their goals for family size upwards in the hope of improving the sex composition of the family. 32/

An analysis of differential contraceptive use according to current family composition revealed small effects in all but one, the Republic of Korea, of the 17 countries for which data tapes were available. Table 14 includes only those countries in which effects were statistically significant. Contraceptive use by Korean couples depends heavily on the number of sons they have. In Sri Lanka, differentials are smaller, and the pattern of effects suggests a desire to have

30/ G.H. McClelland, "Determining the impact of sex preferences on fertility: a consideration of parity progression ratio, dominance, and stopping rule measures", *Demography*, vol. 16, No. 3 (August 1979), pp. 377-388.

31/ L.C. Coombs, Are Cross-cultural Comparisons Possible? A Measurement-Theoretic Approach, IUSSP Papers, No. 5. The Coombs measure has revealed an underlying preference for sons in most of the countries examined. These countries have included chiefly Asian developing countries, plus the United States of America and Hungary. In the Philippines, however, the modal preference is for more daughters than sons, with a large minority preferring sons. This scale was not included in most of the WFS inquiries.

32/ McClelland has proposed combining the Coombs scale approach with questions about whether couples would stop having children if they had various combinations of sons and daughters. G.H. McClelland, loc. cit.

at least one child of each sex, rather than an over-riding desire for one or two sons. A small but statistically significant association between contraceptive use and the presence of sons is observable in Kenya and Nepal. In all other countries sex composition had no detectable effect on contraceptive use. A preference for sons undoubtedly does exist in a number of other Asian populations, in spite of the lack of significant effects in this investigation. These preferences are apparently not always translated into differential contraceptive use, so that preference for sons probably has little effect on fertility in these countries at present, except in the Republic of Korea.

Important differentials in contraceptive use by sex composition of living children may yet emerge in such countries as Bangladesh, Nepal and Pakistan, where contraceptive practice is now relatively rare even among those who stated that they did not want more children. In the Latin American countries and in some of the other Asian countries examined, however, contraception is already relatively widely diffused, and it is questionable whether really large differentials, such as those observed for the Republic of Korea, will emerge in these countries as contraceptive practice increases still further. Even in these countries, however, the desire for smaller families in the future may strengthen the importance of sex composition as a factor determining practice of family planning, since, as the number of desired children, more couples will reach the desired size without having one or two sons, or both a son and a daughter.

The findings presented here which relate levels of contraceptive use to preferences demonstrated the complexity which underlies the motivation for and the practice of contraceptive use. Given the multiple goals of postponement, spacing and fertility limitation, it is difficult to measure the so-called "unmet need" for family planning in any precise way. In addition, desired family size as expressed by the female respondent cannot always be presumed to correlate with those of the male decision-maker in the family whose preferences may be more important in explaining actual family size. Clearly, a woman's expressed desire for no more children is neither a necessary nor a sufficient condition to establish contraceptive practice. In the subsequent discussion, various factors related to the process of modernization will be discussed (i.e., child death, urban/rural residence, education and occupation) which individually and jointly affect the motivation for, as well as the knowledge and availability of, contraception. These factors can be more objectively defined and more comparably measured than preferences but, at the same time, are likely to be correlated with preferences in a systematic way.

D. Differentials in contraceptive practice by incidence of child death

There has been much speculation about the link between the level of early childhood mortality and the level of fertility control, but knowledge is as yet insufficient to permit firm conclusions about the interrelationships. Although there may be relationships between fertility and mortality that manifest themselves at the level of the community or cultural group, the tabulations discussed here pertain only to relationships between a couple's own experience of the death of a child and their contraceptive practice.

It has been hypothesized that parents who have experienced the death of a child may be less likely than others of the same parity to practise contraception, because they would want to replace the child lost as soon as possible. However, at higher parities, couples may not wish to replace the lost child. Other couples may already have succeeded, at the time of the interview, in replacing the child that died. In still other cases, the child may have been lost after the women became infecund. Therefore, the difference in the level of current contraceptive use between couples who have experienced a child death and couples who have not cannot be expected to be a particularly sensitive indicator of the relationship between child mortality and the attempts of couples to control their own fertility. It is not thought that there should be large differentials in countries in which knowledge of fertility regulation is not widespread, or the means of fertility control are not widely available, or in which most couples disapprove of their use, or in which the average family size desired is so large as to be beyond the reach of many couples. Thus it might be expected that large differences in current contraceptive practice will be observed among couples of low to moderate parity in countries in which the level of contraceptive use among women who want no more children is high and in which most couples desire small to moderate-sized families.

For the 17 countries for which data could be tabulated, table 15 shows the percentage of exposed women currently using contraception by number of children ever born and by whether any of the children died.

In most countries contraceptive use appears to have been more prevalent among women who had not experienced a child death than among those who had, but the over-all differences are often small. In fact, in five of the 17 countries (Bangladesh, the Dominican Republic, Jordan, Malaysia and Panama) the over-all difference in level of contraceptive use between women who had experienced a death and women who had not was statistically insignificant after demographic and socio-economic variables were controlled. ^{33/} In several countries the death of a child had, as expected, a larger effect on contraceptive use for women who had few children than for those with a large number of births, but this was not apparent in all the countries. Only Costa Rica, Guyana, Indonesia, Malaysia, the Republic of Korea and Sri Lanka clearly exhibited the pattern that was expected. These data suggest that the event of a child death does tend to depress contraceptive use, but the magnitude of the effect is probably not of great significance demographically.

^{33/} The data were adjusted for the effects of age, number of living children, rural/urban residence, husband's and wife's education and husband's occupation using multiple regression analysis (as discussed below in chap. III). With controls, couples showed levels of contraceptive use that were within 10 percentage points of the rate of use among women whose children were all living. Women with no births were excluded from the analysis.

A similar analysis of data for four Latin American and one Asian country also revealed a small or zero difference in current contraceptive practice according to experience of a child death. 34/

Another question regarding the relationship between death of a child and subsequent fertility, desired family size and practice of family planning is whether couples who have experienced the death of a child will try not merely to replace the lost child but to have additional children as an insurance against the possibility that children will die later, after the couple is no longer capable of replacing a lost child. (Even though couples who lose a child may not, on the average, succeed in replacing the loss, some couples do succeed, and it may be inquired whether they will then go on to have more children than do similar couples who have not experienced a death.) In order to test this hypothesis, levels of current contraceptive use must be compared between groups of women with the same number of living children. An earlier study of factors affecting contraceptive use, using data from 17 surveys conducted prior to the WFS, showed that there were small differences (in most cases less than 10 percentage points) in the level of use between women who had experienced a child death and women who had not, controlling for number of living children, age and several socio-economic variables. 35/ The direction of the relationship was in most cases consistent with the expectation that women who had experienced a death would be less likely than others to use contraception, but the small size of the differential suggests that this cannot in itself account for much of the difference among countries in the average level of fertility. 36/

34/ S. Rutstein and V. Medina, "The effect of infant and child mortality in Latin America", Seminar on Infant Mortality in Relation to the Level of Fertility (Paris, CICRED, 1977), pp. 225-246. This study employed a more complete set of control variables than was used here. Differences in ever-use of contraception according to the number of child deaths were more pronounced in the countries studied by Rutstein and Medina than were differences in current contraceptive practice.

35/ Factors Affecting the Use and Non-use of Contraception: Findings from a Comparative Analysis of Selected KAP Surveys (United Nations publication, Sales No. E.79.XIII.6), pp. 36-38, 76-77.

36/ A similar analysis of WFS data reinforced this impression. Results are not shown because of space limitations. Generally, the difference in contraceptive use by occurrence of a death is smaller when the comparison is between groups with similar numbers of living children than when it is between groups with similar numbers of children ever born, and the tendency for the difference to be largest at small family sizes weakens or disappears. The over-all difference in use between women who had experienced the death of a child and women who had not was less than 5 percentage points, after control for number of living children and several socio-economic variables.

Other studies have shown that couples who have lost a child do not, on the average, make up the loss entirely; they generally finish their reproductive years with more live births, on the average, but fewer living children than do "otherwise similar" couples who have not experienced a child death. ^{37/} The moderate size of the differences in the level of contraceptive use between those who have experienced a death and those who have not, in these WFS data, seems consistent with the latter finding.

It may be, however, that the chief link between mortality and fertility control is not that between couples' experience of child mortality and their own fertility behaviour. The general level of mortality in an area may influence fertility norms throughout the area, in ways obvious neither to survey respondents nor to demographers. Indeed, there is a strong relationship among the 20 developing countries for which WFS information is available between the national level of mortality and the level of current contraceptive use, as can be seen from tables 1 and 5, and among developing countries for which sufficient information is available there is also evidence of an association between fertility and change in mortality. ^{38/} The difficulties in interpreting cross-national correlations of this sort are well known. Leaving aside problems of international comparability of measures, it is clear that countries differ sharply in many respects. Alternative sets of explanatory variables which seem to measure different concepts are often, in practice, so highly interrelated that each set can "explain" fertility differences equally well. Thus, a full testing of this hypothesis will require research at an intermediate level of analysis, perhaps at the level of communities within countries.

E. Summary

In most countries, both age and number of living children are curvilinearly related to current contraceptive use. There is a sharp rise in the level of use with age to a peak in the middle of the reproductive years followed by a decline at older ages. Similarly, in most countries, the level of current use increases sharply from generally low levels among women with no children to a much higher level among women with 2-4 children, but the level frequently declines slightly with further increases in family size. In Latin America the peak level of use tends to occur at a smaller family size than in Asia, but it cannot be said that there is a single Asian or a single Latin American pattern. However, differences between countries in distributions of exposed women by age and number of living

^{37/} See, for example, S. Preston, "Introduction", in S. Preston, ed., The Effect of Infant and Child Mortality on Fertility (New York, Academic Press, 1978), for a review and discussion.

^{38/} See World Population Trends and Policies: 1979 Monitoring Report, vol. I (United Nations publication, Sales No. E.79.XIII.4), pp. 172-180.

children provide very little of the explanation of intercountry differences in levels of contraceptive use.

Probably the most important finding in the chapter is the extent of contraceptive use for birth spacing in countries where the over-all level of contraceptive use is relatively high. In 10 of the 20 countries the rate of use of contraception among exposed women who wanted more children, or were undecided, was over 50 per cent of the rate of use among women who wanted no more children. The relative level of use among those who do want more children and those who do not is associated with the practice of extended breast-feeding. In countries in which extended breast-feeding is practised by most women, contraceptive use is relatively infrequent among women who want more children. Extended breast-feeding, which increases birth intervals by delaying the return of ovulation after a birth, may lessen the need women feel to increase the spacing between births by using contraception.

In every country women who say they want no more children are, as expected, considerably more likely than others to be using contraception. However, in 17 out of the 20 countries, at least 40 per cent of the women who said they wanted no more children were not currently using contraception. Although such figures are often used as a measure of "unmet need" for family planning services, they are extremely inaccurate indicators, given, on the one hand, the additional demand for birth control for birth spacing purposes and, on the other hand, the absence of information on perceived costs of family planning in relation to the intensity of stated family size desires. It must be acknowledged, too, that the seeming incongruence of the woman's behaviour and stated wishes may be attributable, inter alia, to her obligation to accede to the wishes and preferences of others.

In the Republic of Korea couples with no sons or with only one son were much less likely to be using contraception than were other couples with the same size family. Small differentials in use according to number of sons were noted in several other countries, and in some countries couples with at least one child of each sex were slightly more likely than others to be current users. However, only in the Republic of Korea did the differences appear large enough to suggest that sex preference may have an important impact on fertility. It is argued that in order for a large differential in contraceptive use according to sex composition to appear, several conditions must obtain: most couples in the society must hold roughly the same pattern of preference for sex composition of offspring; family size desires must be low enough that a substantial fraction of couples will reach their desired family size without having one or two children of the preferred sex, or without a child of each sex; many couples must be willing to subordinate their desire for a particular number of children to their desire for children of a particular sex; and the means of fertility control must be widely available and accepted and the population capable of applying it. Many societies do not meet all these conditions at present. In some cases the increasing availability and acceptance of contraceptives and declines in the number of children desired may cause important differences to appear in the future.

Women who had experienced the death of a child were slightly less likely to be using contraception than women whose children were all living. When statistical control was introduced for socio-economic and demographic variables, including number of children born, couples who had experienced a child death showed rates of contraceptive practice which were usually within 10 percentage points of the rate of use among women whose children were all living. These differences may be taken to indicate that there is some differential in contraceptive use aimed at replacing lost children. When couples with similar numbers of living children were compared, those who had experienced a child death often showed lower use (an effect that was statistically significant in seven of 17 countries), but the over-all difference between the two groups amounted to 5 percentage points or less. Thus, although the general level of mortality in a society or community may have an important and pervasive impact on the practice of family planning (a hypothesis which could not be examined here), it appears that, at the individual level, the occurrence of a child death may have only a minor effect on family planning practice.

Table 7. Marital status of women in the reproductive ages and exposure status of currently married women, selected WFS countries

Country	Percentage of currently married of women aged 15-49	Total ^{a/}	Percentage of currently married women			Percentage exposed of all women aged 15-49
			Exposed	Infecund	Pregnant	
<u>Africa</u>						
Kenya	71	100 ^{b/}	73	11	17	52
<u>Asia and Oceania</u>						
Bangladesh	81	100 ^{b/}	81	7	13	65
Fiji	64	100 ^{b/}	78	10	12	50
Indonesia	66	100	72	17	12	48
Jordan	70	100	68	11	21	47
Malaysia	60	100 ^{b/}	77	11	11	46
Nepal	84	100 ^{b/}	79	11	11	66
Pakistan	75	100	71	12	17	54
Philippines	54	100 ^{b/}	75	11	14	41
Republic of Korea	62	100	76	13	11	47
Sri Lanka	54	100	76	14	10	41
Thailand	60	100	73	17	10	44
<u>Latin America</u>						
Colombia	53	100	82	6	10	44
Costa Rica ^{c/}	68	100 ^{b/}	82	9	9	56
Dominican Republic	56	100 ^{b/}	75	8	18	42
Guyana	... ^{d/}	100	85	5	10	...
Jamaica	63 ^{d/}	100 ^{b/}	84	7	9	53
Mexico	60	100 ^{b/}	73	13	15	43
Panama ^{c/}	74	100	83	7	10	61
Peru	56	100	76	11	13	43

Sources: Except as noted, data taken from WFS First Country Reports and standard recode tapes prepared by the World Fertility Survey from raw data tapes; the percentage of women who were currently married taken from M. Kabir, The Demographic Characteristics of Household Populations, World Fertility Survey, Comparative Studies No. 6 (Voorburg, the Netherlands, May 1980), pp. 20-21, 36, 43, tables 1.1, 3.1, 3.8.

^{a/} Percentages may not add to 100 because of rounding.

^{b/} Including women currently pregnant but not married, if any.

^{c/} All figures pertain to age-group 20-49.

^{d/} S. Singh, "Evaluation of the Jamaica Fertility Survey" (WFS/TECH.1203, 19 October 1979) (mimeo.), p. 21, table 10.

Table 8. Percentage of exposed women currently practising contraception, by detailed exposure status, Fiji and Kenya

Exposure status and parity	Fiji		Kenya	
	Number of women	Percentage using contraception	Number of women	Percentage using contraception
All classes	3 634	52	4 214	9
No live births	302	9	278	1
One or more births:				
Practising post-partum abstinence	369	23	480	-
Not practising post-partum abstinence:				
Not amenorrheic:				
Breast-feeding	299	61	767	12
Not breast-feeding	2 568	61	1 560	16
Amenorrheic:				
Breast-feeding	74	50	1 036	4
Not breast-feeding	22	45	93	9

Sources: World Fertility Survey standard recode tapes prepared by the World Fertility Survey from raw data tapes.

Table 9. Distribution of exposed women, by selected demographic variables, selected WFS countries

Variable	Kenya	Bangla- desh	Fiji	Indo- nesia	Jordan	Malay- sia	Nepal	Pak- istan	Philip- pines	Republic of Korea	Sri Lanka	Thai- land	Colom- bia	Costa Rica	Dominican Republic	Guy- ana	Jama- ica	Mexico	Pan- ama	Peru
<u>Sample size</u>	4 214	4 645	3 634	5 638	2 337	4 487	4 325	3 334	6 684	3 866	4 709	2 569	2 323	2 222 ^{a/}	1 381	2 713	1 939	4 107	2 257 ^{a/}	3 853
<u>Age</u>	<u>Percentage</u>																			
<20	9.1	24.3	4.4	11.7	9.0	3.9	15.0	14.7	2.9	1.0	2.7	6.1	5.5	-	7.9	9.1	10.4	7.2	-	5.1
20-24	19.1	22.3	18.4	21.0	16.8	15.3	23.4	18.4	13.1	10.3	14.0	17.5	17.8	18.5	20.4	19.4	21.4	18.8	17.0	16.2
25-29	23.7	18.2	22.6	19.8	20.9	20.6	21.8	19.2	20.7	23.7	21.6	23.3	21.0	22.1	20.1	20.6	18.4	22.2	22.7	20.6
30-34	16.7	12.6	21.8	17.4	18.9	19.8	15.6	17.9	20.8	24.2	21.2	17.9	17.5	19.3	15.4	16.7	15.1	19.2	22.1	18.3
35-39	15.3	9.6	16.5	15.9	16.0	20.2	12.6	14.0	20.3	22.3	19.3	17.6	16.4	17.7	18.5	14.8	14.6	17.7	16.4	18.0
40-44	8.8	8.1	11.1	9.9	11.9	13.2	8.6	10.8	15.2	14.5	12.6	12.8	13.6	13.1	10.1	11.4	12.2	10.4	12.8	13.8
45+	7.2	4.8	5.1	4.3	6.4	7.0	3.1	5.0	7.0	4.0	8.7	4.8	8.2	9.4	7.7	8.1	8.0	4.6	9.0	8.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
<u>Number of living children</u>																				
0	8.2	15.7	9.0	12.2	6.6	5.7	21.8	15.4	4.0	4.4	7.6	6.8	6.0	4.3	9.5	12.2	12.4	5.8	4.6	3.3
1	13.0	16.2	13.6	19.9	8.5	12.2	19.3	14.3	11.6	12.9	16.4	17.8	13.8	15.9	13.3	14.3	18.2	12.1	11.9	13.0
2	13.5	15.0	15.1	18.4	11.2	15.7	17.5	13.8	15.8	18.7	16.4	18.8	17.5	20.7	14.8	13.9	16.8	16.1	17.5	18.1
3	13.5	14.1	15.1	15.1	11.0	16.1	15.9	13.5	16.1	21.9	15.8	16.4	15.3	15.7	15.1	13.2	13.0	14.9	16.8	17.0
4	12.0	12.0	13.0	12.3	11.5	13.4	11.4	11.6	14.6	19.1	12.8	12.9	11.5	10.9	12.0	11.4	9.4	13.1	14.0	13.6
5	11.5	10.5	11.0	9.0	10.5	11.1	6.8	10.4	11.1	12.6	10.5	9.7	10.1	8.9	9.7	9.7	8.2	11.0	11.4	12.5
6	10.2	7.2	8.9	6.2	11.4	9.1	4.0	9.2	9.3	6.4	7.1	7.2	7.3	6.4	7.7	7.7	6.7	8.1	7.7	9.2
7+	18.0	9.3	14.3	7.0	29.2	16.9	3.3	11.8	17.6	4.1	13.3	10.5	18.5	17.2	18.0	17.6	15.2	19.1	16.1	13.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
<u>Number of living sons</u>																				
0	20.3	30.8	20.7	30.0	16.3	17.4	37.6	26.8	16.1	16.0	22.4	21.4	19.3	18.9	23.3	24.9	26.9	18.0	16.9	17.5
1	24.7	25.4	27.8	31.2	19.0	26.8	29.3	25.3	26.2	30.9	28.4	31.1	26.9	30.7	25.9	25.4	27.0	26.1	27.8	28.4
2	22.5	19.5	21.7	19.1	19.5	23.2	18.5	20.2	23.3	31.5	21.8	22.5	21.6	20.7	20.8	20.0	19.5	22.7	23.1	24.0
3	15.2	12.8	14.4	10.9	16.7	15.6	9.4	13.4	16.3	14.7	14.0	12.6	13.9	12.6	13.5	12.5	11.3	14.9	15.6	15.1
4	10.0	7.1	7.9	5.7	13.5	9.5	3.6	8.0	9.3	5.0	7.8	7.0	8.9	7.5	7.6	7.5	7.6	9.1	9.2	8.2
5+	7.5	4.4	7.4	3.2	15.0	7.6	1.5	6.3	8.7	1.9	5.6	5.3	9.3	9.5	8.9	9.8	7.7	9.3	7.4	6.9
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

(Table continued on following page)

Table 9 (continued)

Variable	Kenya	Bangla- desh	Fiji	Indo- nesia	Jordan	Malay- sia	Nepal	Pak- istan	Philip- pines	Republic of Korea	Sri Lanka	Thai- land	Colom- bia	Costa Rica	Dominican Republic	Guy- ana	Jama- ica	Mexico	Pan- ama	Peru
<u>Percentage</u>																				
<u>Desire for more children</u>																				
Want more or undecided ^{b/}	83.6	36.0	49.8	60.4	58.0	53.8	70.3	57.3	45.6	25.9	37.8	38.8	38.7	47.9	47.9	47.0	52.2	44.2	37.4	39.1
Want no more	16.4	64.0	50.2	39.6	42.0	46.2	29.7	42.7	54.3	74.1	62.2	61.2	61.3	52.1	52.1	53.0	47.8	55.8	62.6	60.9
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
<u>Whether any child died</u> ^{c/}																				
No	59.1	44.4	87.1	60.3	64.0	76.5	50.5	47.1	...	77.4	75.1	70.8	67.7	76.0	60.3	73.5	...	...	78.5	59.4
Yes	40.9	55.6	12.9	39.7	36.0	23.5	49.5	52.9	...	22.6	24.9	29.2	32.3	24.0	39.7	26.5	...	...	21.5	40.6
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	...	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Sources: Data taken from World Fertility Survey First Country Reports or tabulated from WFS standard recode tapes. Excluding women who were currently unmarried, currently pregnant or who believed themselves to be infecund; including those sterilized for contraceptive purposes. Except as noted, the age range is 15-49 or under 50 years.

a/ Women aged 20-49.

b/ Including women who did not state whether they wanted more children.

c/ Based on exposed women with at least one live birth.

Table 10. Percentage of exposed women currently using contraception, by age of woman, selected WFS countries

Country	Total		Age of women						
	Unstand-ardized	Stand-ardized ^{a/}	<20	20-24	25-29	30-34	35-39	40-44	45+
<u>Africa</u>									
Kenya	9	10	3	7	8	13	9	13	12
<u>Asia and Oceania</u>									
Bangladesh	10	11	4	9	9	14	17	11	8
Fiji	52	52	29	42	49	57	59	62	59
Indonesia	37	38	16	33	40	43	42	43	36
Jordan	37	38	13	25	37	44	46	48	41
Malaysia	42	42	21	37	48	46	43	43	34
Nepal	3	3	-	1	2	5	6	4	5
Pakistan	7	9	-	3	7	9	13	11	17
Philippines	48	46	23	40	49	52	54	48	40
Republic of Korea	46	41	18	19	36	51	60	52	45
Sri Lanka	41	40	16	26	37	49	48	48	42
Thailand	45	45	23	39	48	52	50	46	40
<u>Latin America</u>									
Colombia	52	52	38	52	56	65	53	45	31
Costa Rica	79 ^{b/}	77 ^{c/}	...	77	79	82	80	77	64
Dominican Republic	42	42	20	37	51	51	45	35	27
Guyana	38	39	24	32	40	48	44	39	32
Jamaica	45	46	37	45	49	57	48	38	32
Mexico	42	41	21	36	48	46	46	39	33
Panama	65 ^{b/}	63 ^{c/}	...	56	70	66	67	64	65
Peru	41	41	24	38	46	50	42	39	31

Sources: Data taken from World Fertility Survey standard recode tapes and First Country Reports.

^{a/} Standardized on the age distribution of exposed women in Colombia

^{b/} Women aged 20-49.

^{c/} Assuming the same ratio as in Colombia between contraceptive practice at ages 15-19 and 20-24.

Table 11. Percentage of exposed women currently using contraception, by number of living children, selected WFS countries

Country	Total		Number of living children							
	Unstandard- ized	Standard ^{a/} ized	0	1	2	3	4	5	6	7+
<u>Africa</u>										
Kenya	9	10	2	4	8	10	10	13	12	15
<u>Asia and Oceania</u>										
Bangladesh	10	11	3	7	8	11	12	13	15	16
Fiji	56	57	10	39	52	56	66	69	72	75
Indonesia	37	42	4	27	40	46	43	48	51	54
Jordan	37	36	7	27	37	36	36	43	45	43
Malaysia	42	42	10	37	43	45	47	45	45	46
Nepal	3	5	-	1	2	3	5	9	9	11
Pakistan	7	8	-	2	4	7	9	12	14	16
Philippines	48	46	6	36	49	55	54	52	51	48
Republic of Korea	45	42	16	17	47	54	57	54	49	37
Sri Lanka	41	43	4	26	41	48	53	53	55	47
Thailand	45	45	10	38	47	53	58	52	45	43
<u>Latin America</u>										
Colombia	52	52	24	50	60	57	59	56	47	45
Costa Rica	78	77	39	75	82	83	80	82	78	76
Dominican Republic ^{b/}	42	43	15	30	44	51	50	57	41	41
Guyana	38	39	22	26	37	39	38	46	49	47
Jamaica	45	47	32	34	50	45	52	57	55	51
Mexico	42	42	13	38	49	47	46	41	43	39
Panama	65	64	31	58	70	73	71	67	69	58
Peru	41	40	16	36	49	48	43	38	39	36

Sources: Data from World Fertility Survey First Country Reports and from magnetic data tapes, including standard recode tapes.

a/ Standardized on the distribution of exposed Colombian women, by number of living children.

b/ The percentage using contraception differs slightly from that shown in other tables because of small discrepancies in the source tables and because of rounding errors.

Table 12. Percentage of ever-married women who used contraception before the first child, by age of woman, selected WFS countries

Country	Total	Age of women						
		<20	20-24	25-29	30-34	35-39	40-45	45+
Colombia	9	21	16	13	6	4	3	1
Costa Rica	15		28	24	13	8	5	4
Malaysia ^{a/}	5	10	13	8	4	2	2	1
Panama	10		22	14	8	6	5	3
Republic of Korea	4	11	11	7	3	2	1	0
Sri Lanka	2	4	4	5	2	1	2	0

Sources: World Fertility Survey standard recode tapes.

a/ Percentage who used contraception before the first pregnancy.

Table 13. Percentage of exposed women by contraceptive-use status and percentage of users by desire for more children, selected WFS countries

Country	All Users (per cent)	Percentage of users among those who wanted		Percentage of exposed women who wanted				
		More children ^{a/}	No more children	Total ^{b/}	More children ^{a/} and were		No more children and were	
					Users	Non-users	Users	Non-users
A. <u>Any Contraceptive Method^{c/}</u>								
<u>Africa</u>								
Kenya	9	7	21	100	6	78	3	13
<u>Asia and Oceania</u>								
1969 - Bangladesh ^{d/}	10	2	14	100	1	35	9	55
1969 - Fiji ^{e/}	56	38	74	100	18	30	38	13
Indonesia	37	26	53	100	16	45	21	18
Jordan	37	22	59	100	13	45	25	17
Malaysia	42	34	52	100	18	26	24	22
Nepal	3	0	8	100	--	70	3	27
Pakistan	7	1	15	100	1	56	6	36
Philippines	48	33	60	100	15	31	33	22

Table 13. (continued)

Country	All Users (per cent)	Percentage of users among those who wanted		Percentage of exposed women who wanted				
		More children ^{a/}	No more children	Total ^{b/}	More children ^{a/} and were		No more children and were	
					Users	Non-users	Users	Non-users
<u>Asia and Oceania (continued)</u>								
Republic of Korea	46	16	56	100	4	22	41	33
Sri Lanka	41	22	54	100	8	30	33	29
Thailand	45	29	56	100	11	28	34	27
<u>Latin America</u>								
Colombia	52	45	56	100	17	21	34	27
Costa Rica	78	71	84	100	34	14	44	8
Dominican Republic	41	25	57	100	12	36	29	23
Guyana	38	29	46	100	13	32	25	29
Jamaica	46	39	55	100	19	33	27	22
Mexico	42	34	48	100	15	29	27	29
Panama	65	50	74	100	19	19	46	16
Peru	41	33	46	100	13	26	28	33

Table 13. (continued)

Country	All Users (per cent)	Percentage of users among those who wanted		Percentage of exposed women who wanted				
		More children ^{a/}	No more children	Total ^{b/}	More children ^{a/} and were		No more children and were	
					Users	Non-users	Users	Non-users
B. Modern Contraceptive Methods^{c/}								
<u>Africa</u>								
Kenya	6	3	17	100	3	81	3	14
<u>Asia and Oceania</u>								
Bangladesh ^{d/}	6	1	9	100	--	36	6	59
Fiji ^{e/}	49	30	66	100	15	34	34	17
Indonesia	32	23	46	100	14	47	18	21
Jordan	26	14	42	100	8	50	18	24
Malaysia	31	25	37	100	13	41	17	29
Nepal	3	0	8	100	--	70	3	27
Pakistan	5	1	11	100	1	57	5	38
Philippines	21	12	29	100	5	40	16	39
Republic of Korea	35	12	44	100	3	23	32	42
Sri Lanka	24	9	34	100	3	34	26	41
Thailand	42	26	52	100	10	29	32	30

Table 13. (continued)

Country	All Users (per cent)	Percentage of users among those who wanted		Percentage of exposed women who wanted				
		More children ^{a/}	No more children	Total ^{b/}	More children ^{a/} and were		No more children and were	
					Users	Non-users	Users	Non-Users
<u>Latin America</u>								
Colombia	37	32	40	100	13	26	25	37
Costa Rica	65	57	71	100	27	20	37	15
Dominican Republic	30	15	43	100	7	41	22	30
Guyana	29	25	43	100	11	34	23	31
Jamaica	43	35	52	100	18	34	25	23
Mexico	32	26	37	100	11	33	20	35
Panama	55	40	65	100	15	23	41	22
Peru	15	11	17	100	4	35	10	51

Sources: Data from World Fertility Survey First Country Reports and standard recode tapes.

a/ Wanted more children, or were undecided, or desire for more children was not stated.

b/ Percentages may not add to 100 because of rounding.

c/ Panel B shows use and non-use of modern methods (sterilization, pill, injection, condom, diaphragm, IUD, foam and other spermicides), while Panel A shows use and non-use of either a modern or a traditional method.

d/ Some women were asked "Do you want another child soon?".

e/ Base excludes those practising post-partum abstinence.

Table 14. Percentage of exposed women currently using contraception, by number of living children and sex composition of family, Kenya, Nepal, Republic of Korea and Sri Lanka

Country and number of living children	Total ^{a/}	Percentage currently using contraception and having				
		No boys	More girls than boys	Same number of boys and girls	More boys than girls	No girls
<u>Kenya</u>						
Total	10	5	10	9	14	8
1	4	2				5
2	8	8		6		11
3	10	8	7		12	11
4	10	10 ^{b/}	8	10	10	15 ^{b/}
5 or more	13	10 ^{b/}	11	12	15	22 ^{b/}
<u>Nepal</u>						
Total	4	1	4	5	6	2
1	1	1				1
2	2	1		3		4
3	3	3	1		5	5
4	5	0 ^{b/}	4	6	7	5 ^{b/}
5 or more	9	<u>c/</u>	8	18	8	<u>c/</u>
<u>Republic of Korea</u>						
Total	47	20	47	54	56	45
1	17	14				20
2	47	22		46		61
3	54	37	43		60	64
4	57	23 ^{b/}	46	62	64	60 ^{b/}
5 or more	50	<u>c/</u>	51	61	47	44 ^{b/}
<u>Sri Lanka</u>						
Total	45	35	48	52	51	32
1	26	28				24
2	41	36		45		39
3	48	43	47		52	40
4	53	61 ^{b/}	47	60	49	46 ^{b/}
5 or more	51	63 ^{b/}	49	56	51	39 ^{b/}

Sources: Tabulated from World Fertility Survey standard recode tapes.

^{a/} Confined to women with at least one living child.

^{b/} 20-49 cases.

^{c/} Fewer than 20 cases.

Table 15. Percentage of exposed women with at least one live birth who were currently using contraception, by number of children ever born and whether any child died, selected WFS countries

Country and child deaths	Total	Number of children ever born						
		1	2	3	4	5	6	7+
<u>Africa</u>								
Kenya:								
None	12	5	9	13	13	16	15	17
One or more	7	7	1	5	5	2	8	10
<u>Asia and Oceania</u>								
Bangladesh:								
None	11	6	9	12	13	18	17	17
One or more	11	2	9	6	11	10	12	12
Fiji:								
None	56	35	51	52	62	64	71	71
One or more	57	9 <u>a/</u>	41 <u>a/</u>	39	43	58	64	68
Indonesia:								
None	42	27	43	48	44	54	57	65
One or more	38	16	26	31	39	48	43	41
Jordan:								
None	41	25	40	39	42	45	50	48
One or more	36	<u>b/</u>	<u>b/</u>	28	30	23	30	39
Malaysia:								
None	46	38	45	47	51	46	46	49
One or more	38	<u>b/</u>	21 <u>a/</u>	37	36	33	46	41

(Table continued on following page)

Table 15 (continued)

Country and child deaths	Total	Number of children ever born						
		1	2	3	4	5	6	7+
<u>Asia and Oceania (continued)</u>								
Nepal:								
None	4	-	2	2	5	13	8	15
One or more	4	-	1	1	4	4	4	6
Pakistan:								
None	9	2 <u>a/</u>	6	10	8	14	19	20
One or more	8	1 <u>a/</u>	2	1	5	5	10	11
Republic of Korea:								
None	47	16	47 <u>a/</u>	55	59	55	52	37
One or more	47	<u>b/</u>	22 <u>a/</u>	41	50	45	56	46
Sri Lanka:								
None	45	26 <u>a/</u>	44	50	56	54	53	47
One or more	43	13 <u>a/</u>	19	30	41	39	53	49
Thailand:								
None	50	39	47 <u>a/</u>	56	65	54	53	47
One or more	42	<u>b/</u>	37 <u>a/</u>	43	50	46	47	38
<u>Latin America</u>								
Colombia:								
None	59	54	63 <u>a/</u>	61	63	66	52	52
One or more	41	<u>b/</u>	30 <u>a/</u>	42	51	53	46	38
Costa Rica:								
None	82	76	83 <u>a/</u>	86 <u>b/</u>	82 <u>b/</u>	81	87	79
One or more	72	<u>b/</u>	65 <u>a/</u>	70 <u>b/</u>	72 <u>b/</u>	77	80	71

(Table continued on following page)

Table 15 (continued)

Country and child deaths	Total	Number of children ever born						
		1	2	3	4	5	6	7+
<u>Latin America (continued)</u>								
Dominican Republic:								
None	46	30	47 <u>a/</u>	56 <u>b/</u>	47	63	41	39
One or more	41	<u>b/</u>	28 <u>a/</u>	30 <u>b/</u>	45	48	49	42
Guyana:								
None	40	29 <u>a/</u>	38 <u>a/</u>	40	38	45	50	51
One or more	37	8 <u>a/</u>	13 <u>a/</u>	25	34	38	39	44
Panama:								
None	59	59	70	76 <u>a/</u>	69 <u>a/</u>	70	74	62
One or more	60	<u>b/</u>	<u>b/</u>	67 <u>a/</u>	64 <u>a/</u>	79	62	53
Peru:								
None	51	40	56	57	55	48	49	46
One or more	29	<u>b/</u>	25	36	33	28	29	28

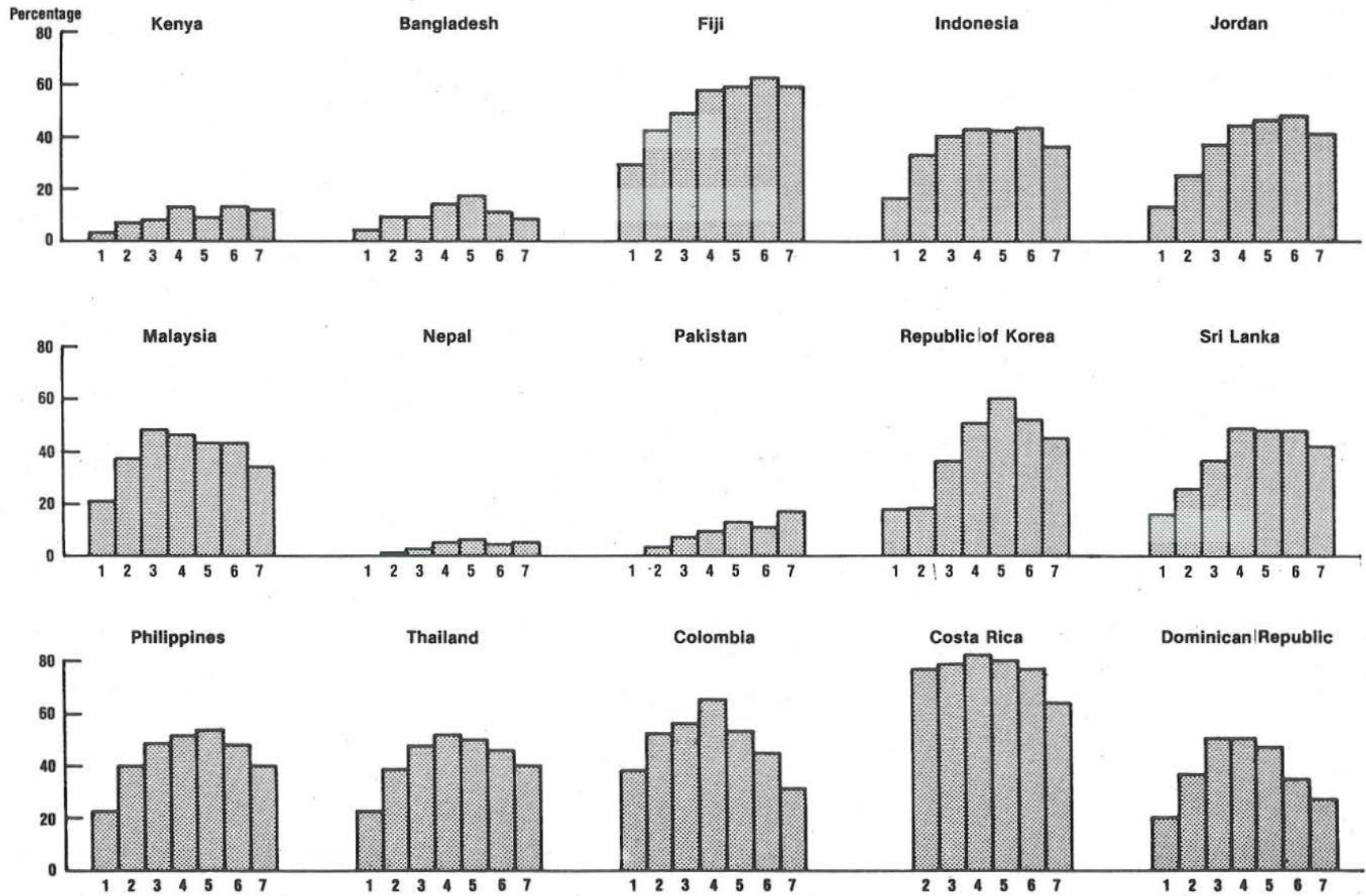
Sources: Data tabulated from World Fertility Survey standard recode tapes.

a/ Cell size 20-49.

b/ Not shown when cell size < 20.

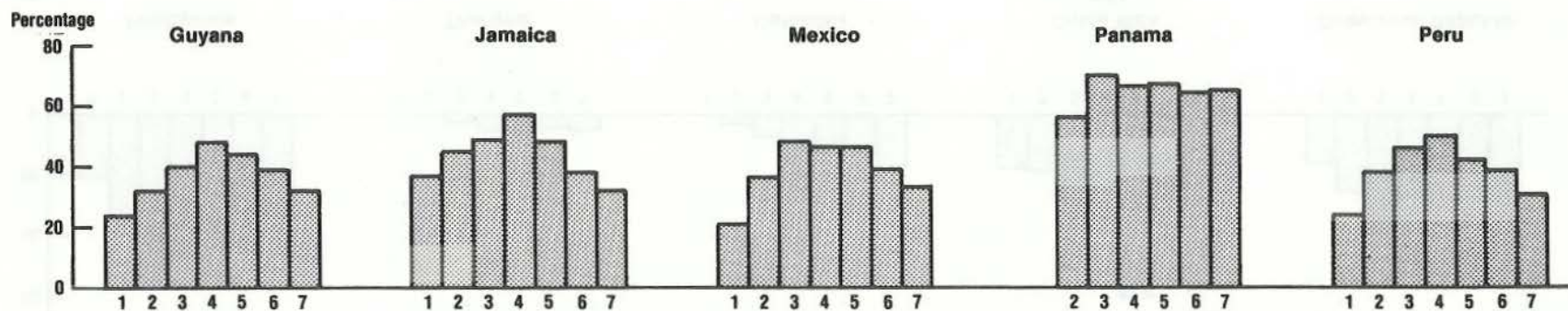
Figure II

Percentage of exposed women currently using contraception, by age, 20 WFS countries



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Figure II (continued)



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Legend: Age of women
 1 = under 20
 2 = 20-24
 3 = 25-29
 4 = 30-34
 5 = 35-39
 6 = 40-44
 7 = 45 and over

Note: Data were not obtained for women under age 20 in Costa Rica and Panama.

Figure III

Percentage of exposed women currently using contraception, by number of living children, 20 WFS countries

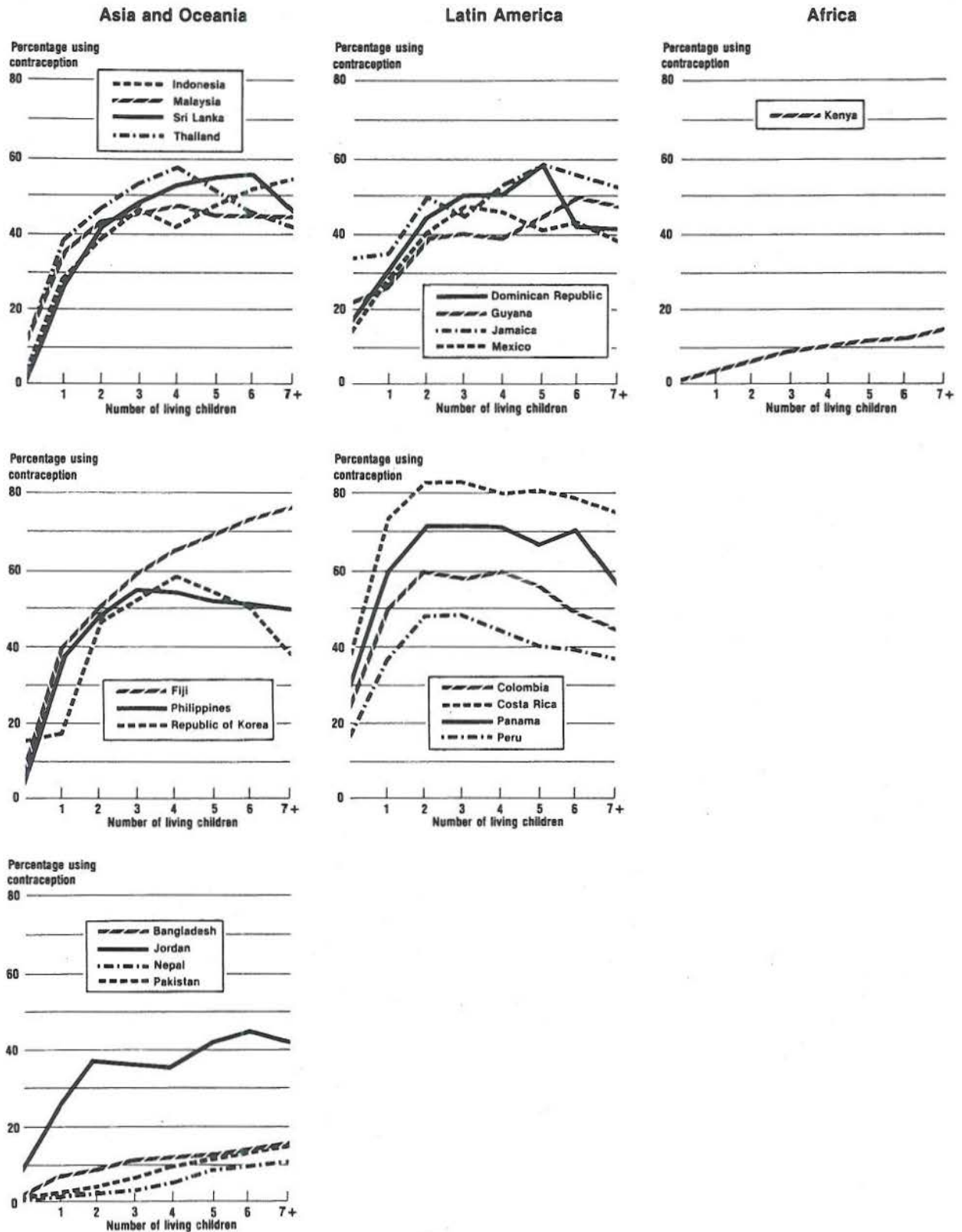
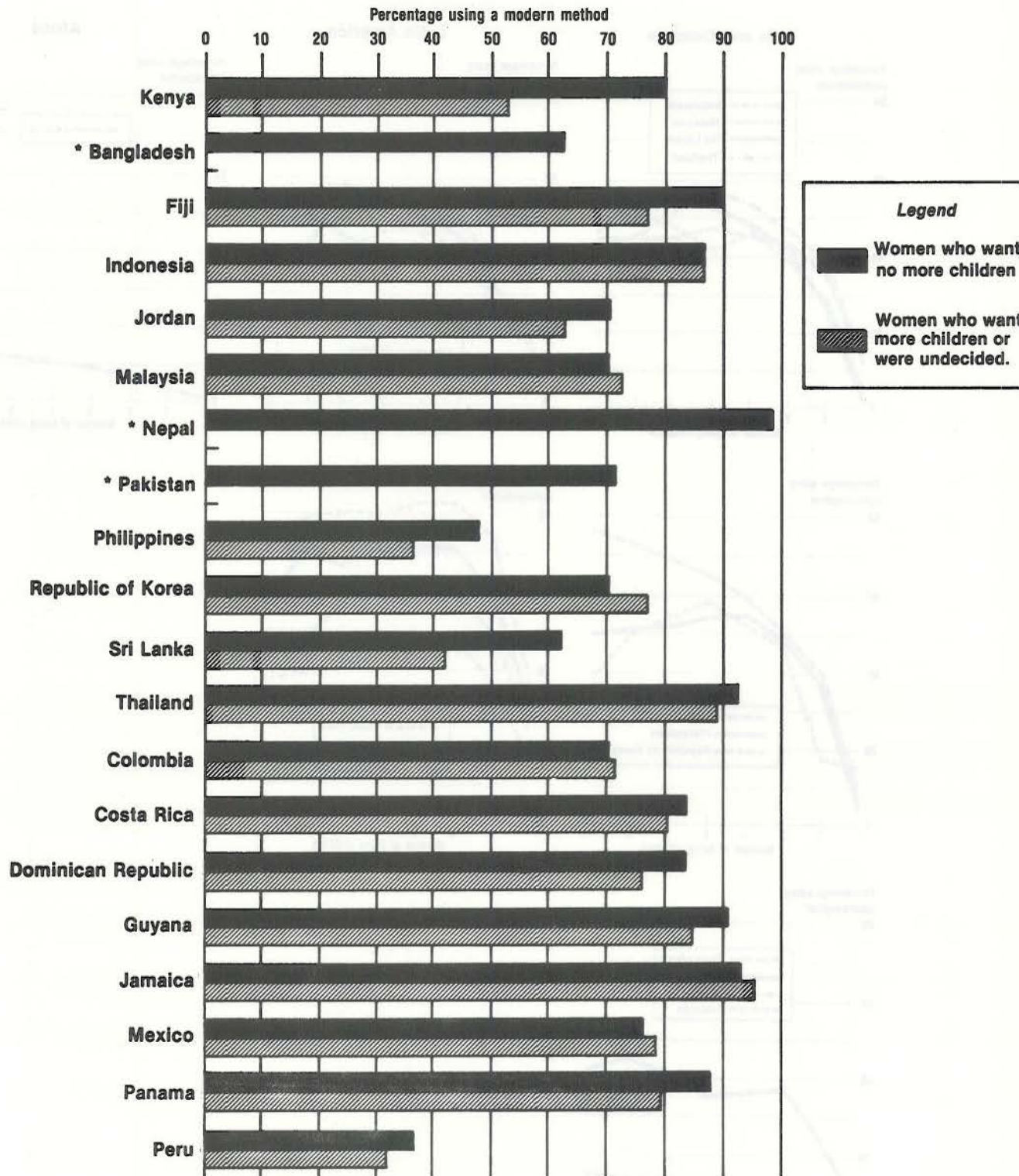


Figure IV

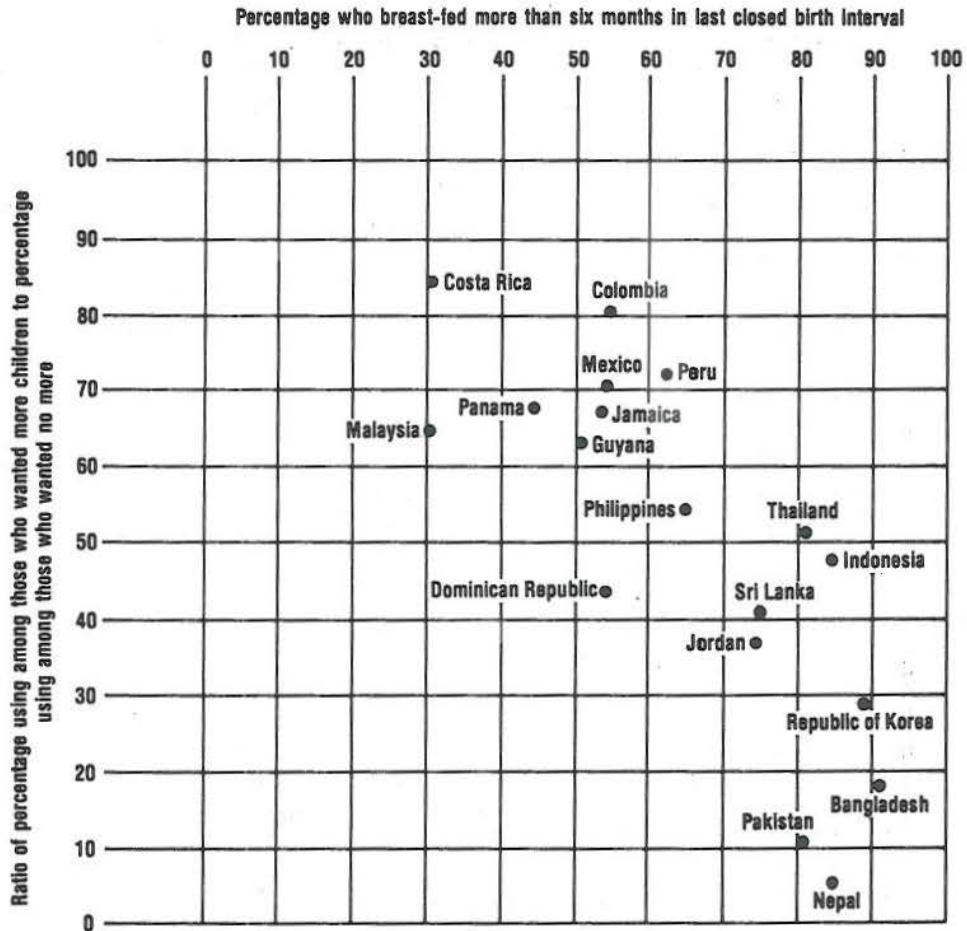
Percentage of current contraceptive users who are using a modern method, by desire for more children, 20 WFS countries



*Percentage not shown for women who wanted more children because of small number of contraceptive users.

Figure V

Relative level of contraceptive use among exposed women who wanted more children and among those who did not want more, by percentage of women who breast-fed for more than six months in the last closed birth interval, 18 WFS countries



Notes:

Data not available at present for Fiji and Kenya.

For Bangladesh, percentage who breast-fed excludes women who breast-fed until the child died.

For Nepal, Pakistan, Republic of Korea, Costa Rica, Dominican Republic, Mexico and Panama, the data pertain only to women whose last closed birth interval did not exceed five years.

DIFFERENTIALS IN CONTRACEPTIVE USE BY SOCIO-ECONOMIC FACTORS

A persistent idea in the demographic literature is that large differences in fertility and contraceptive practice according to socio-economic group are temporary phenomena associated with the demographic transition; this idea has been called the theory of cultural lag. 1/ It holds that, in the course of the demographic transition, differentials arise among groups defined by topographical divisions of a country or by social and economic classes; groups that are relatively isolated from social and economic change or which hold beliefs especially supportive of high fertility maintain a level of high and stable fertility longer than other groups. Further, the theory is that urban women of high socio-economic status are the first to adopt small family size goals and accept family planning, and that rural women of lower socio-economic status are, on the other hand, the last to change traditional attitudes. 2/ Thus differentials in contraceptive use should widen and ultimately narrow. However, there may be changes in the precise form of this relationship as a society experiences a fertility decline.

Although there is a general expectation that socio-economic, cultural and areal differentials in contraceptive use will widen during a transition from high to low fertility, the bases do not exist for predicting the magnitude of these differentials at any point during the transition or for expecting the differentials to become equally large in all countries over the course of a transition to lower fertility.

The WFS data examined here pertain to some countries in which the transition to lower fertility is well under way and also some in which there is little or no evidence of change; it might be expected that differentials in contraceptive use by variables such as education and urban/rural residence will be smaller in the latter countries. 3/

1/ C.V. Kiser, "Changing patterns of fertility in the United States", Social Biology, vol. 17, No. 4 (December 1970), p. 306.

2/ The Determinants and Consequences of Population Trends, vol. I (United Nations publication, Sales No. E.71.XIII.5), p. 86.

3/ Of the 17 countries included in the analysis of socio-economic differences in contraceptive practice there is little evidence of marital fertility decline or of recent increase in contraceptive practice over time in Bangladesh, Jordan, Kenya, Nepal and Pakistan. In the case of Jordan, the level of contraceptive use is moderate but there is no firm evidence of a decline in marital fertility. It is possible that some decline has occurred in Jordan but, because of inaccuracies in the fertility measurements, this is not clear.

An issue of great importance concerns the role that government policy, through family planning programmes, may play in hastening the transition once it has begun. To the extent that the pace and timing of the start of the fertility decline within various social groups is dependent on the spread of knowledge about contraception and of the accessibility of services, an active family planning programme which strives to provide services to all social groups may hasten the transition and, in the process, reduce the size of the socio-economic differences that are observed at any point during the transition. Thus it might be expected that countries in which a family planning programme has succeeded in extending services throughout rural as well as urban areas would show relatively small differentials in contraceptive use according to socio-economic variables, provided that the services had been accepted equally by all population subgroups. In analysing socio-economic differentials in contraceptive use, differences in the size and strength of family planning programmes between the countries included in this report (as discussed in chap. I) should be kept in mind.

The present chapter contains a detailed analysis of differentials in contraceptive practice by rural/urban residence, husband's and wife's education, and husband's and wife's occupations; variables available in a comparable form from the WFS surveys. Also examined is the extent to which socio-economic differences in contraceptive practice (especially differences according to education) are attributable to differences in the desire to continue childbearing. This is important in order to identify the proximate or attitudinal variables through which the socio-economic variables exert their effects. For these purposes, previously unpublished tabulations have been obtained in order to achieve the greatest degree of comparability possible in the variables examined and in the analytic procedures employed. ^{4/} Thus, the analysis is confined to the 17 developing countries for which the data tapes were available ^{5/} and the technique of multiple regression is applied to isolate the independent effects of each of the socio-economic variables examined. Table 16 shows the distribution of exposed women, as defined in chapter II, section A, according to the background variables whose relationship with contraceptive use is examined here. The presentation of findings for each of the socio-economic variables under examination is preceded by a short discussion of the method of analysis and the causal ordering of variables.

^{4/} In four countries the individual data permitted a further refinement of the definition of exposure. In Colombia, Costa Rica, Fiji and Kenya, where women practising post-partum abstinence can be identified, these women are omitted from the base population. In Kenya, women practising terminal abstinence are also omitted.

^{5/} Data tapes were not available for Jamaica, Mexico and the Philippines.

A. Method of analysis and causal ordering of variables

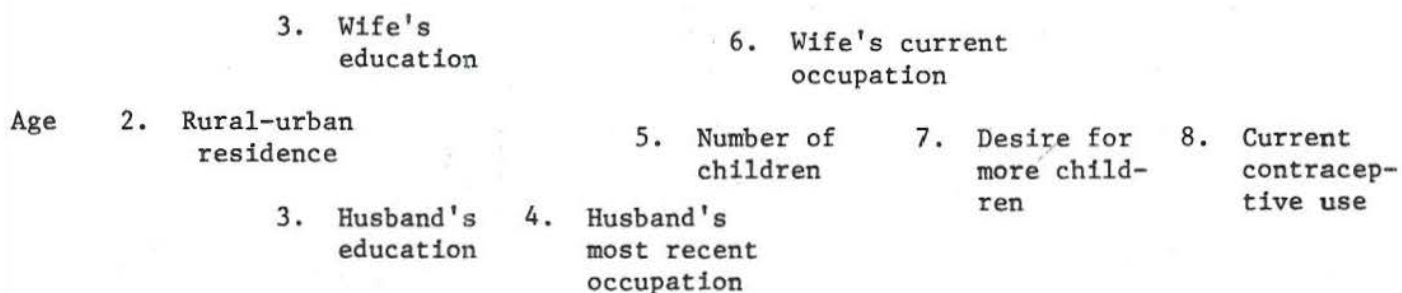
The causal ordering of variables involved in an analysis influences the substantive interpretation which will be given to the empirical results and also helps provide an answer to a basic question that must be faced in the course of analysis: which variables to employ as control variables when the effect of a specific variable, such as wife's education, on contraceptive practice is examined. Generally speaking, control variables should include all relevant variables which are causally prior to the variable whose effect on contraceptive use is being examined. For example, analysts usually control for the effect of the respondent's age when examining the effect of education on contraceptive use; if the education-contraceptive use relationship were to disappear when age was controlled, the original relationship between education and contraceptive use (examined without control for age) would be generally regarded as a spurious one. The effect of an independent or predictor variable on the dependent variable, assessed after control for the variables which are causally prior to the predictor variable of interest, has been termed the total effect of the variable. ^{6/}

It may also be of interest to control for variables intermediate in the causal sequence between the predictors whose effects are being examined. For example, it may be instructive to compare the size of the total effect of education on contraceptive use with the size of the effect after control for respondent's occupation. If the latter is smaller than the total effect it may be concluded that education affects contraceptive use partly through the effects of education on the type of job a woman holds.

As is frequently the case, it is impossible to justify a strict causal ordering of the variables which have been selected for this analysis. Some pairs of variables, such as husband's and wife's education, have no clear ordering between themselves. In other cases, such as the relationship between type of place of residence and education, it may be surmised that one direction of causation is predominant, but simultaneous relationships cannot be ruled out. In such cases it may not be possible to identify in an unambiguous fashion the total effect of a particular variable as described above, but a partial causal ordering may still be possible. For instance, age is not affected by educational attainment, or by any of the other variables considered here.

^{6/} R.J.A. Little, Linear Models for WFS Data, World Fertility Survey Technical Bulletin, No. 9 (Voorburg, the Netherlands, June 1980), p. 64.

Following is a list of the variables whose effects on contraceptive use are discussed in this report, arranged in a rough and incomplete causal sequence from left to right.



Placement of the variables indicates the presumed direction of predominant influence. Because the causal ordering is ambiguous it is often difficult to choose a unique set of variables to use as control variables when examining the effect of a particular variable, such as wife's education, on contraceptive use.

In this study the effect of each socio-economic variable on contraceptive use is examined first without control for any other variables and then as successive control variables are added. Controls are added in the following order: age and number of children, rural/urban residence, husband's and wife's education, and husband's and wife's occupations, and desire for more children. This sequence corresponds to the rough causal ordering shown above, except that the control for number of children, which comes late in the causal sequence, is added at the beginning, because of an analytic interest in examining the effects of the socio-economic variables after demographic or life cycle characteristics of the couple have been accounted for. This approach provides considerable information about the consequences of correlation among socio-economic variables for the apparent effect of each variable on contraceptive use. ^{7/}

Multicollinearity is potentially a problem in all analyses which attempt to examine the effect of one variable controlling for the effects of others. In some cases, two predictor variables which are distinguishable conceptually may be so strongly associated statistically in a particular data set that it would not be really meaningful to regard them as different variables. It would not be possible to obtain estimates of the effect of one variable, controlling for the other, in that data set. Although for reasons of space this is not demonstrated here, it was concluded on the basis of analysing measured correlates between

^{7/} This approach is suggested and illustrated in J. Cleland and others, Illustrative Analysis: Socio-economic Determinants of Contraceptive Use in Thailand, Scientific Reports, No. 5 (Voorburg, the Netherlands, International Statistical Institute, August 1979).

variables that the variables examined here are not, at the individual level, so strongly associated that it is meaningless to examine them separately.

The statistical technique employed in this study is multiple regression analysis. ^{8/} This technique is used to provide both estimates of the level of contraceptive use for couples with various characteristics, after control for other variables, and information about whether the observed effects might be due to sampling error rather than to genuine differences in the population as a whole. ^{9/} For the purposes of this analysis, all cases for which a value for one of the relevant variables was not stated were excluded; an analytical decision which in most cases resulted in only a minor reduction in sample size. The form in which the results of the analysis are presented and the way in which they may be interpreted is discussed below, in the section of the report which describes the effects of education on contraceptive use, the first section that includes results of the multivariate analysis.

B. Differentials in contraceptive use by education

This section of the report has several foci. First, the relationship between contraceptive use and education is described and summarized, using the same coding categories of education for all 17 countries for which the data could be tabulated. Some attention is given to the relative effects of the husband's and wife's education, and to the extent to which each spouse's education has an effect on contraceptive use that is independent of the effect of the spouse's education and of other demographic and socio-economic characteristics of the couple. The use of modern versus traditional methods by women of various levels of educational attainment is also briefly described and discussed. Finally, there is an examination of the extent to which differences by education in the practice of contraception can be understood to arise through differences in the desire to have more children or through differences in the perceived accessibility of family planning services. Previous studies have found a positive relationship between educational attainment and contraceptive practice with some consistency

^{8/} The statistical routine used was the regression routine in the Statistical Package for the Social Sciences (SPSS). See N.H. Nie and others, Statistical Package for the Social Sciences (New York; McGraw-Hill, 1975).

^{9/} It is felt that the reported levels of statistical significance are useful as a general guide, although the assumptions underlying these tests are violated here. See J. Cleland and others, op. cit., pp. 22-23, for a discussion of these problems in connexion with this topic of analysis. The assumptions governing the statistical tests are that the underlying model (which assumes linearly additive relationships among the variables) is true and that there is equal variance of the dependent variable within categories of the independent variables, normally distributed error term, and simple random sampling.

in developing countries; in developed countries, generally positive relationships also appear although, in recent years, the differentials have been quite small in many of them. 10/ In most cases, wife's education has been used as the classifying variable.

Economists writing about fertility determinants have given a prominent position to the wife's education, which is regarded as a proxy for the "opportunity cost of the wife's time". This line of reasoning leads to the expectation that wife's education would have a positive relationship with contraceptive use, even after control for other socio-economic characteristics. 11/ Empirical findings from a study of Latin American countries support these expectations in reporting that wife's education is usually more strongly related to contraceptive practice than is husband's education before as well as after statistical control for other characteristics of the couple. 12/ On the other hand, husband's education is generally viewed as playing a more important role than wife's education in

10/ No comprehensive review of past research is attempted here. Recent comparative analyses which discuss the level of contraceptive use according to education include, for developing countries: Factors Affecting the Use and Non-use of Contraception: Findings from a Comparative Analysis of Selected KAP Surveys (United Nations publication, Sales No. E.79.XIII.6); D. Nortman, Changing Contraceptive Patterns: a Global Perspective (Washington, D.C., Population Reference Bureau, August 1977); Population Bulletin, vol. 32, No. 3; CELADE and Community and Family Study Center, Fertility and Family Planning in Metropolitan Latin America (Chicago, Ill., 1972). Recent data for several countries which are not included in this report may be found in D. Nortman and L. Hofstatter, Population and Family Planning Programs: A Compendium of Data through 1978, tenth edition (New York, Population Council, 1981), pp. 79-80, table 24. Education differentials in contraceptive use in developed countries are discussed in Fertility and Family Planning in Europe Around 1970: A Comparative Study of Twelve National Surveys (United Nations publication, Sales No. E.76.XIII.2), table 130 and pp. 160-162, 166-169.

11/ For a discussion of the applicability of economic models of fertility determinants to the situation in developing countries, see R.A. Easterlin and others, "Toward a more general economic model of fertility determination: endogenous preferences and natural fertility", in R.A. Easterlin, ed., Population and Economic Change in Developing Countries (Chicago, Ill., University of Chicago Press, 1980), pp. 81-149.

12/ CELADE and Community and Family Study Center, Fertility and Family Planning in Metropolitan Latin America (Chicago, Ill., 1972), pp. 179-184.

determining the couple's social standing and, in some societies, the husband's views may carry more weight than the wife's in determining whether contraception will be used. Thus in certain societies the husband's education may be a particularly important determinant of contraceptive use, with the wife's education possibly having little independent effect.

For this analysis, husband's and wife's education are classified into five categories, based on the number of years of school completed: none, 1-3, 4-6, 7-9, 10 or more years. ^{13/} As can be seen from table 16, the level of education varies greatly among these countries. In Bangladesh, Nepal and Pakistan less than one fourth (in Nepal about 5 per cent) of exposed women had received any formal education, while in Costa Rica, Guyana and Panama over nine tenths had received some education. Fewer than 5 per cent of exposed women in Bangladesh, Indonesia, Malaysia, Nepal and Pakistan had completed 10 or more years of schooling while, in Panama, over 20 per cent had received that much education. The educational attainment of husbands is generally higher than that of wives; although in the Latin American countries the differences in educational attainment between the sexes tend to be small.

Before turning to the empirical results, some note should be taken of the way in which they are presented. In the following discussion, table 17 can be taken as an example. The table provides, in the first line for each country, the percentage of exposed women currently using contraception by education without control ^{14/} for any other variable and, in the second line, after control

^{13/} This choice of educational classification is discussed in United Nations Population Division, "An educational coding system constructed for application in the United Nations Programme of International Comparative Analysis of World Fertility Survey Data" (ESA/P/WP.71, 15 January 1981). In most of the countries included here, "primary graduate" falls in the range 4-6 years, and in all cases "secondary graduate" falls in the "10+ years" group. In the Republic of Korea the categories are: none, less than primary, primary graduate, some secondary, secondary graduate and above. For Nepal, the higher categories for women are combined, because few women had attended school beyond 6 years. For Nepalese men several hundred cases for whom the number of years attended was not ascertained were included in the "1-3 years" category; these cases had been counted in the "primary" category in the First Country Report. For Guyana, husbands and wives who attended secondary school but for whom the number of years completed was not known were counted in the "7-9 years" category. Couples for whom no information about husband's or wife's education was available were excluded from the analysis.

^{14/} The terms "effects controlled", "effects removed" and "effects adjusted" are used interchangeably in the following discussion.

for age and number of living children. 15/ The figures in the second line may be interpreted in the same way as figures that had been directly standardized for the effects of age and number of living children using the over-all within-country distribution of exposed women by age and family size as the standard. It is important to note that the figures for the various countries are not interpretable as education differences standardized on the age and family size distribution of a single country. However, the discussion of contraceptive use by age and number of children, presented earlier, indicated that standardization for these demographic variables has little effect on the amount of intercountry variation in contraceptive use. Lines C, D and E show for each country, education differentials in contraceptive use when controls for urban/rural residence, spouse's education, and both spouses' occupations are added.

A summary statistic, "average difference", provides a quick reference to the size of the differential in contraceptive practice according to education. 16/ Statistical tests were employed as a rough guide for distinguishing variations which might occur by chance from those that correspond to real differences in the population. Effects which tested as significant at the 1 per cent level are marked with two asterisks, and those significant at the 5 per cent level are marked with one asterisk. 17/

15/ In these and in all similar tables dealing with the effects of socio-economic variables, linear and quadratic effects of age, coded in single years, were controlled. "Number of living children" was treated as a categorical variable, coded 0, 1, ..., 9 or more. The quadratic term for age is included because the typical form of relationship between age and contraceptive use is, as discussed earlier, curvilinear.

16/ "Average difference" is the average absolute deviation of the within-category rates from the mean of the category rates. For example, for the first line of figures in table 17 the five category rates are 6, 9, 13, 17 and 27 per cent, and their mean is 14.4. The absolute values of the differences between the category rates and 14.4 are 8.4, 5.4, 1.4, 2.6 and 12.6 and their mean, 6.1, is the "average difference" (which is rounded to 6 in the table). In practice, the "average difference" statistics were computed from unrounded category rates rather than the rounded rates which appear in the tables.

17/ When, as in the case of education, a variable has more than two categories, the significance of differences between specific pairs of these categories is not tested; rather the statistical tests refer to the existence of an association between contraceptive use and the other variable, tested jointly over all categories of that variable. Sample design weights have been employed for those countries in which such weights were used for the tables in the First Country Reports. See R.J.A. Little and S. Periera, "Socio-economic differentials in cumulative fertility in Sri Lanka, a marriage cohort approach" (WFS/TECH. 1286, January 1979) (mimeo.) for a discussion of the use of such weights in regression analyses.

It cannot be concluded from an examination of tables 17 and 18 that large education differentials in contraceptive practice are universal in developing countries although, among the countries for which data are presented here, small differentials appear to be the exception rather than the rule. This is true for both husband's and wife's education. Usually, although not in Thailand, the differentials by wife's education are somewhat larger than those by husband's education. In most countries, the level of use increases steadily, but not always linearly, from one educational group to the next.

The difference by wife's education in level of contraceptive use, after the influence of the demographic variables has been accounted for (fig. VI and line B of table 17), between the highest and lowest educational classes varies markedly among these countries, from 18 (Nepal) to 60 (Jordan). Especially large differentials are found in Colombia, Jordan and Peru - where the spread between the extreme categories is 50 percentage points or more; it is nearly that large in the Dominican Republic. Line B of table 18 shows similar figures for husband's education. The difference between extreme education categories ranges from 12 points (Nepal) to 55 points (Peru).

Countries for which there is a difference of 25 points or less between the level of contraceptive use in the highest and lowest education categories are Kenya (for both husband's and wife's education), Bangladesh (for husband's education), Fiji (husband's and wife's education), Indonesia (husband's education), the Republic of Korea (husband's education) and Costa Rica (husband's and wife's education); two of which (Kenya and Bangladesh) have extremely low levels of development and high fertility and four of which (Indonesia, the Republic of Korea, Fiji and Costa Rica) have strong family planning programmes and a wide range of stages of development.

In keeping with the theory of transition which holds that large fertility differentials are characteristic of conditions of change, these data show that the size of the education differential is not always larger in countries experiencing rapid change in fertility than in those in which little fertility decline has occurred. For example, in three countries in which marital fertility has not shown a marked decline, Bangladesh, Nepal and Pakistan, the differences by education are smaller than in most of the other countries, but these differences are nevertheless rather substantial in Bangladesh and Pakistan. However, in Jordan, another country in which there is no clear evidence of marital fertility decline, the education differentials are among the largest shown in table 17. Further, in some of the countries that have been experiencing a decline in marital fertility, notably Fiji and the Republic of Korea, the differentials are no larger than they are in Bangladesh or Pakistan. In the case of Fiji and the Republic of Korea, the presence of strong family planning programmes may have moderated the size of the differentials.

There appears to be a rather sharp increase in contraceptive use between one educational group and the next in several countries, but no consistent pattern among countries in this regard is apparent. The level of use among women with

no education, or among those whose husbands have no education, varies considerably from country to country, which indicates that lack of education is not itself an insuperable barrier to contraceptive use.

One result of this exercise is the finding that the size of the education differentials in contraceptive use generally increases after adjustments are made for the demographic factors. Largely because of the recent increases in educational attainment, the more highly educated men and women tend to be heavily over-represented among young couples who have 0-1 children who are much less likely than others to be using contraception. That is, if the more highly educated group of people had the age and family size distribution that is the national average, the educational differences in current contraceptive use would be even greater than the unadjusted differentials suggest. The effect of adjustments for the demographic variables is thus much different when contraceptive use is the dependent variable than when achieved fertility is the dependent variable.

Figure VI shows that the use of both traditional and modern methods is greater among better-educated women than among others, so that the differential in use of any method (traditional plus modern) is usually larger than the differential in the use of modern methods alone. Many of the users of traditional methods have used a modern method at some time in the past and, in most countries, well-educated women who are using a traditional method at the time of the interview were more likely than poorly educated users of traditional methods to have tried a modern method. In 11 of the 15 countries for which the information is currently available, at least 25 per cent of current users of traditional methods had used a modern method, 18/ and in four of the countries over half had used a modern method. 19/

Around 1970, education differences in the use of traditional methods in many European countries were quite different from those observed among these developing

18/ Of the 20 countries, this information is not at present available for Guyana, Jamaica, Mexico and the Philippines. In the case of Nepal, the number of traditional users is extremely small, making this tabulation relatively meaningless. Countries in which fewer than 25 per cent of users of traditional methods had used a modern method are Kenya, Pakistan, Sri Lanka and Thailand.

19/ The traditional methods are primarily those important historically in the developed countries of Europe. While local indigenous methods were included in the definition of traditional methods, it is suspected that use of folk methods is underreported because these methods were not, in most countries, mentioned specifically in the questionnaire.

countries. As noted earlier in this text, not only were the more common traditional methods much more widely practised by European people than they are by inhabitants of most developing countries but the percentage of exposed women using withdrawal or rhythm was in many European countries - notably Belgium, England and Wales, Finland and France - considerably higher among poorly educated women than among highly educated women. The term "traditional", applied to methods such as withdrawal and rhythm, is in fact drawn from the experience of Western countries. Although the term is retained here for convenience, it is clear, both from the low level of knowledge of these methods and from the patterns of use of the methods, that there is no widespread tradition of their use in most of the developing countries studied here.

The influence of type of place of residence upon contraceptive use overlaps with that of educational attainment. Figure VII (solid lines) shows the size of the husband's and wife's education differentials adjusted for the influence of rural/urban residence as well as for the two demographic variables. Although the education differentials are still large, they are somewhat smaller (except Indonesia) after the effect of type of place of residence has been controlled, as can be seen by comparing lines B and C of tables 17 and 18.

As expected, the effect of husband's education overlaps with that of wife's education; the differentials in contraceptive use are reduced when the effect of the spouse's education has been accounted for. However, in all cases except wife's education for Nepal and Thailand and husband's education for Costa Rica, each spouse's education retains a statistically significant effect on contraceptive use. As was observable before control for spouse's education, the differential after control is larger, in most cases, for wife's than for husband's education but, in most cases, both variables are important. ^{20/} After control for spouse's education the differentials are very small ("average difference" ≤ 3 , which

^{20/} A recent analysis of differentials in fertility during the five years preceding the survey found that wife's education had a slightly larger effect on fertility than did husband's education, that the effect of wife's education overlaps considerably with that of husband's education and other socio-economic variables, and that each spouse's education retained a significant effect on recent fertility in somewhat over 50 per cent of the study populations. See G. Rodríguez and J. Cleland, "Socio-economic determinants of marital fertility in twenty countries: a multivariate analysis", paper presented at the World Fertility Survey Conference (London, July 1980) (mimeo). It may be noted that the relationship between education and contraceptive use is more consistently positive and is more likely to remain statistically significant after control for other socio-economic variables than is the relationship between education and recent fertility. Contraceptive use is only one of several variables that immediately affects fertility in an important way.

usually means a difference of 10 percentage points or less between the extreme education categories) for wife's education in Fiji, Nepal, the Republic of Korea and Thailand and for husband's education in Bangladesh, Fiji, Kenya, Nepal, Pakistan, the Republic of Korea and Sri Lanka (see dotted lines in fig. VII and line D of tables 17 and 18). The main point to note from these results is that both husband's and wife's educational levels typically influence contraceptive use.

Education strongly affects an individual's type of occupation and, in the case of women, the likelihood of taking a job outside the home. If the education differential decreases markedly when occupation is controlled, the indication is that the effect of education operates on contraceptive use partly or entirely through its influence on the types of work that people do. On the other hand, if the education differential remains large when occupation is controlled, it may be concluded that education influences contraceptive use in some other as yet unidentified way.

The controls for occupation have only small effects on the wife's education differential and wherever wife's education had a statistically significant effect before the occupation variables were controlled, the effect remains significant after occupation is controlled. ^{21/} Kenya is the only country in which a control for wife's occupation had any discernible effect on the wife's education differential; the control for husband's occupation decreased the wife's education differential by a small amount in several other countries. After control for husband's occupation, the husband's education differential in Fiji and Panama, previously of borderline statistical significance, is not significantly different from zero, and a modest decline in the value of the summary statistic "average difference" can be observed in most of the countries; control for wife's occupation had essentially no effect. In summary, education has an important effect on contraceptive use in most of these countries even after occupation is controlled and, where part of the influence of education can be regarded as operating through its effect on types of work that people do, it appears (except in Kenya) to be the husband's rather than the wife's occupation that has this mediating effect.

Thus far, it has been established that education of each spouse has an important relationship with contraceptive use that is independent of the demographic factors or of type of place of residence, that it is partially independent of the level of education attained by the other spouse and that, in most cases, education has an effect that is mediated little, if any, by occupation.

^{21/} In examining the effect of a control for occupation on the education differential, wife's and then husband's occupation was controlled for the examination of the behaviour of the wife's education differential, while the opposite order was followed for the examination of the husband's education differential. However, as the effect of controlling for wife's occupation was almost always negligible, only the effect of controlling for both occupation variables is shown in tables 17 and 18.

A remaining question is: through which of the more immediate determinants of contraceptive practice does education exert its influence? Education may be related to motivation to limit family size, knowledge about and attitude towards conception, or proximity to and ability to afford family planning services. It may also be related to the duration of post-partum sterility, temporary separation of spouses, and other factors that decrease the risk of conception. Even if they did not favour relatively small families, educated women might be more highly motivated to use contraception if they tended, on average, to be at higher risk of conception for such reasons as better health, less frequent breast-feeding etc. In this report the only intervening variables discussed are knowledge of and perceived accessibility of a family planning outlet, and whether the respondent said she wanted to have more children.

There is evidence that a part of the education differential in the use of modern contraceptive methods is attributable to the fact that better-educated women are more likely than others to know of a place where services may be obtained. Table 4, presented in chapter I, showed that, in the five countries that were included in the study (Colombia, Costa Rica, Malaysia, Nepal and the Republic of Korea), highly educated women were substantially more likely than others to know of a family planning outlet. The study from which this table was taken also showed that knowledge of an outlet and its perceived accessibility did account for part of the relationship between wife's education and current use of a modern method of contraception. ^{22/} In Costa Rica there was no statistically significant relationship between education and contraceptive use once knowledge and accessibility were controlled; for the other countries, these two conditions accounted for some but not all of the education differentials.

When desire for more children was included in this analysis it had essentially no effect on the size of the education differential in current contraceptive use, which suggests that differences by education in motivation to stop childbearing contribute very little to the formation of large differentials in contraceptive use by husband's and wife's education. This does not imply, however, that stated desire to stop childbearing is itself unrelated to contraceptive practice once other factors have been accounted for. Statistics presented earlier (table 13) show that, in all countries considered, women who want no more children are much

^{22/} G. Rodríguez and J. Cleland, *op. cit.*

more likely than others to use contraception. Other multivariate analyses of WFS data have shown that the relationship between stated desire for more children and contraceptive use was maintained after control for demographic and socio-economic variables. 23/

The First Country Reports revealed that, although highly educated women are somewhat more likely than others to say that they want no more children, once the effect of current family size is controlled, this difference is generally rather small compared with the size of the education differentials in contraceptive use, a fact which suggests that the effect of education on contraceptive use is unlikely to operate primarily through differences in desire to stop childbearing. This is illustrated in table 19 which provides data for women with three children in Colombia and Sri Lanka.

The level of use among exposed women who want to have more children (or are undecided) and among those who want no more children is shown by wife's education in figure VIII and table 20. This shows more directly the point discussed in the preceding paragraph. Large education differentials in current contraceptive use may be observed among women who want more children as well as among those who do not, and desire for more children has a substantial effect net of education. At least 80 per cent of women with 10 or more years of education and who do not want more children were using contraception in nine of the 17 countries: Indonesia, Jordan, Malaysia, Thailand, Colombia, Costa Rica, the Dominican Republic, Panama and Peru. 24/

Finally, it may be observed that programme strength may be one important factor moderating the size of these differentials, since a strong programme, through its outreach and education programme, may provide in the area of family planning at least a limited substitute for a more general education. The size

23/ N. Sadik, "Use of family planning services", and J.A. Palmore and M.B. Concepción, "Desired family size and contraceptive use", papers presented at the World Fertility Survey Conference (London, July 1980). The analysis done for this report confirms this result for all 17 countries. The difference in the level of use between those who do want more children and those who do not is not identical, after control for other variables, to the unadjusted differences shown in table 13, but in most cases adjustment for demographic and socio-economic variables has little effect on these numbers. In eight countries (Bangladesh, Fiji, Indonesia, Jordan, Kenya, Nepal, Pakistan and the Republic of Korea) the differential according to desire for more children was 70-79 per cent as large as before control for other variables; in the other 11 countries the change in the differential was smaller.

24/ Although the level of use is lower than this among well-education Korean women, it should be noted that induced abortion is widely practised in the Republic of Korea; well-educated women are particularly likely to have used abortion. The Korean National Fertility Survey 1974, First Country Report, p. 135.

of the education differential in use tends to be relatively small in several countries that have family planning programmes that are generally regarded as strong: Costa Rica, Fiji, Jamaica and the Republic of Korea. ^{25/} Somewhat larger differentials are observed in Thailand and Indonesia, which also have programmes rated as strong, and in most countries that have a programme regarded as of moderate strength. ^{26/} All these countries are in the process of a demographic transition. Among the three countries which do not have a programme, Peru and Jordan show large differentials, and Guyana, which is the most developed of the three, shows moderate differentials. ^{27/} On the other hand, countries with weak programmes also had small differentials which can be explained by their high fertility rates and low levels of development. An important point to recognize is that the general level of education itself may be in certain cases a factor contributing to programme strength.

C. Differentials in contraceptive use by urban/rural residence

Results of past surveys have usually but not always shown higher contraceptive use among urban people than among rural people in the same country. Among other things, use may be higher in urban areas because it is probably less difficult to obtain modern contraceptives there than in rural areas. This is usually true even where there is an organized family planning programme, because of the difficulty and cost of supplying services to remote and sparsely settled areas. Other possible reasons for the typically lower level of use in rural areas are that rural people may tend to want larger families and that they are less well-educated and more firmly steeped in tradition.

What follows is a discussion of the differences in contraceptive use between rural and urban areas after statistical control for the woman's age and number of living children, and of the extent to which the rural/urban differences are independent of the education differences discussed earlier. The analysis is

^{25/} See W.P. Mauldin and B. Berelson, "Conditions of fertility decline in developing countries, 1965-75", Studies in Family Planning, vol. 9, No. 5 (May 1978), p. 90.

^{26/} As mentioned earlier, relatively small differentials are also observed in most countries which show no sign of decline in the level of marital fertility.

^{27/} In Guyana the only real difference according to wife's education is between women with 10 or more years of schooling and those with less.

restricted to data for the 17 countries for which standard recode tapes were available, but rural/urban differences for the other WFS countries are also discussed briefly. 28/

In all countries except Indonesia, contraceptive use is significantly higher in urban areas than in rural areas, after the demographic variables are controlled, with the more pronounced gaps occurring in Jordan, Malaysia, Colombia, the Dominican Republic and Peru, for which the percentages differ by 33, 29, 22, 20 and 37 points, respectively (see table 21 and fig. IX). In Bangladesh, Nepal, Pakistan, Panama and Thailand, the difference exceeds 10 percentage points, while in Costa Rica, Fiji, Guyana, Kenya, the Republic of Korea and Sri Lanka, the margins amount to 10 points or less but are still highly significant statistically. The control for age and number of children had little effect on the size of the differential. The published reports also show a small (10 percentage points or less) difference in Jamaica. Rural/urban differences are between 10 and 20 points in size in the Philippines, and the differential is more than 20 points in Mexico.

Evidence which is available for a few countries indicates that large rural/urban differentials in contraceptive practice are often associated with large rural/urban differences in the perceived availability of family planning services. Table 4, presented earlier, shows that there are substantial differences between rural and urban areas in the proportion of women who know of a place to obtain services in Colombia and Nepal, and rural/urban differences in perceived availability of family planning services have also been reported elsewhere to exceed 15 percentage points in the Philippines and 40 points in Mexico. 29/ All of these countries also show a moderate to large rural/urban differential in contraceptive practice. Costa Rica and the Republic of Korea show a small (10 points or less) rural/urban differential in contraceptive practice and also in the knowledge of a family planning outlet. However, a large rural/urban differential in use exists in Malaysia, even though the percentage of women who know of an outlet is nearly as high in rural areas as in urban areas.

28/ Urban and rural places are generally defined according to the criteria used for other purposes within each country. As table 16 shows, the proportion of exposed women living in urban areas varies from under 10 per cent in Bangladesh and Nepal to 71 per cent in Jordan. Except in Jordan, roughly one third or fewer of the women in the Asian countries live in urban areas (37 per cent in Fiji), while in the Latin American countries, the proportion urban ranges between 36 per cent in Guyana and 65 per cent in Costa Rica.

29/ V.C. Chidambaram and L.V.T. Mastropaolo, "Role of WFS data in the analysis of family planning programmes", paper prepared for the IUSSP Seminar on the Use of Surveys for the Analysis of Family Planning Programmes (Bogotá, 28-31 October 1980), table 2.

The rural/urban differences in contraceptive practice for these developing countries may be contrasted with the rural/urban differences observed in developed countries. Although the level of contraceptive use has tended to be higher in urban areas than in rural areas in most developed countries, the difference between the two types of areas in the level of contraceptive use among married women was 10 percentage points or less in all but three of the 10 developed countries included in a recent comparative analysis. ^{30/} Differences this small, as summarized above, occur in fewer than half of the 20 developing countries for which WFS reports are available.

For most countries the differentials are considerably smaller after account is taken of the effect of husband's and wife's education (table 21, line C). Colombia, Jordan and Peru had very large differentials before education was controlled, and contraceptive use in urban areas is higher by 15 to 20 percentage points than it is in rural areas, net of the effects of the educational composition of the population. In the Republic of Korea, the difference after control for education is insignificant at the 0.05 level, and in Sri Lanka the difference is of borderline significance ($0.01 < P < 0.05$). The data show that rural Indonesian women are more likely to be using contraception than are the women who live in urban areas, given the relative educational attainment of couples in rural areas compared with urban areas (and controlling also for the demographic variables); the difference between rural and urban areas is, however, not very large (8 percentage points). When husband's and wife's occupations are controlled (line D) the urban/rural difference is 10 points or less in all countries except Jordan, Malaysia, Nepal and Peru, but remains statistically significant in nine of the 17 countries. Thus, in most countries, much of the effect of rural/urban residence overlaps with effects of the other socio-economic characteristics of individuals.

In comparison with the large education differentials examined earlier, the differences in contraceptive use by type of place of residence appears, even before control for other socio-economic variables, to be of moderate size in many, though not all, countries. Inasmuch as some of the WFS surveys did not cover the most

^{30/} The 10 developed countries were Belgium, Czechoslovakia, Denmark, Finland, France, Hungary, Poland, the Netherlands, the United States of America and Yugoslavia; rural/urban differences exceed 10 percentage points in Poland, the Netherlands and Yugoslavia (Fertility and Family Planning in Europe Around 1970: A Comparative Study of Twelve National Surveys (United Nations publication, Sales No. E.76.XIII.2), p. 155, table 125). Small rural/urban differences have also been found in Japan in recent years. Y. Okazaki, "Knowledge, attitudes and practice of family planning", Fertility and Family Planning in Japan (Tokyo, Japanese Organization for International Cooperation on Family Planning, Inc., 1977), p. 124, table 5.

remote areas of the country, it is possible that the differentials are in fact somewhat larger, in some cases, than these data indicate. 31/ A simple distinction between rural and urban areas does not, of course, capture the entire effect of size of place of residence, which varies along a continuum.

D. Differentials in contraceptive use by wife's occupation

There has been much interest in recent years in the relationship between women's employment status, type of work, their contraceptive practice and desired and achieved fertility. Employment, especially in jobs performed away from home, is viewed as "an index of commitment to and involvement in non-familial roles. Presumably women who leave the home to work may find the work role competitive (in terms of time and resources) with the mother role and limit their fertility as a consequence. In addition, involvement in the economy outside the home may itself be a source of new information and values inconsistent with high fertility". 32/ Most of the empirical studies that have shown a negative relationship between women's work and fertility or contraceptive use have been concerned with developed countries, and theoretical work on this subject has also dealt, implicitly or explicitly, with developed countries. The great differences that exist between developed and developing countries and within the group of developing countries in the type of work women do and in the conditions in which the work is performed make it questionable whether the relationships that are found in developed countries will appear in those now less economically advanced.

Recent literature reviews show that, although there has been much empirical research on the relationship between work and fertility, results are conflicting, and it is not clear at present whether in most developing countries, women's type of work is at all related to contraceptive use, once account is taken of the fact that working women differ from others in their level of education and in other characteristics known to have an important effect on contraceptive use. 33/

31/ The Indonesian survey covered only Java and Bali, approximately two thirds of the total population, while the Malaysian survey covered Peninsular Malaysia. The Jordanian survey covered the East Bank only. Several other countries omitted smaller fractions of the total population.

32/ Fertility and Family Planning in Europe Around 1970: A Comparative Study of Twelve National Surveys (United Nations publication, Sales No. E.76.XIII.2), p. 163.

33/ G. Standing, Labour Force Participation and Development (Geneva, International Labour Organisation, 1978), chap. 7; R.H. Weller, "Demographic correlates of women's participation in economic activities", in International Population Conference, Mexico, 1977, vol. III (Liège, International Union for the Scientific Study of Population, 1977), pp. 497-516.

The WFS provides several kinds of information about women's past and current work. Although there are some serious problems of comparability among countries, 34/ the WFS data permit a more detailed examination of the relationship between women's work and their contraceptive use than has been possible in the past.

Wife's current occupation was chosen as a measure of differences in type of work. The classification of occupation is discussed elsewhere; this analysis provides an opportunity to evaluate this scheme by application. 35/ The occupational categories are: own housework only; professional, clerical and managerial; service, including household service work; sales and labour; farm, including work on family farms. Current work was chosen in preference to work at any time since marriage because it was felt that the relationship between current work and contraceptive use would be somewhat more clear-cut than that between past work and use. The countries vary enormously in the fraction of women employed and in the type of work performed, according to the level of economic development, social customs and the inclusiveness of the definition of work employed in each survey (see table 16). 36/

34/ In Bangladesh, only cash work was counted; in Pakistan, family farm work was excluded; in Kenya, only salaried employment was included. There may be even more important differences introduced not by variations in question wording but by cultural differences in the sorts of activities women and interviewers accept as being "work other than housework".

35/ United Nations, Population Division, "Occupational classification systems constructed for application in the United Nations Programme of International Comparative Analysis of World Fertility Survey Data" (ESA/P/WP.70, 15 January 1981). The classification of work that is adopted here represents a compromise between the need to obtain categories that represent roughly the same types of work from one country to another, and the necessity of avoiding a classification that in some categories may yield very small numbers of cases. These criteria cannot always be met simultaneously. Occupational categories which contained fewer than 50 women were combined with another category, except in the case of agricultural occupations. The distinction between farm and non-farm employment was felt to be an important one, and "farm" was retained as a separate category so long as there were at least 20 women working in farm jobs. (Numbers based on 20-49 cases are shown in parentheses in table 22. Even if the effects of variables with very uneven distributions of cases are statistically insignificant in each country, a consistent pattern of effects across countries might emerge. Women for whom occupation was not stated were omitted from this analysis.

36/ See also United Nations Population Division, "Some demographic characteristics of women's work in ten World Fertility Survey countries", paper presented at the United Nations Working Group on Comparative Analysis of World Fertility Survey Data (Geneva, November 1980).

The effect of wife's occupation on contraceptive use was examined with and without control for other variables; the results are shown in table 22. Because the type of occupation that is open to a woman is heavily influenced by her level of education, it is relevant to ask whether occupation has any effect on contraceptive use that is not attributable to the fact that education and occupation are correlated. Line D of table 22 shows the effect of occupation after control for age, number of children, urban/rural residence and respondent's education; line E adds a control for husbands education.

An analysis of the figures in table 22 reveals that although wife's occupation was rather strongly related to contraceptive use before wife's education was controlled, in nine of 17 countries there was no significant effect of occupation once the influence of wife's education was accounted for. ^{37/} In Bangladesh, Jordan, Pakistan, the Republic of Korea, Sri Lanka, Colombia, Costa Rica, the Dominican Republic and Panama, occupation had no statistically significant effect that was independent of the effects of the other variables. But in Kenya, Fiji, Indonesia, Malaysia, Nepal, Thailand and Peru the relationship between occupation and contraceptive use remained statistically significant after the effect of education had been included. (However, the difference in Nepal between non-working women and others was trivially small - 2 percentage points - and in Fiji and Nepal the relationship became insignificant once a control for husband's education was added.) In all countries, the apparent magnitude of the effect of occupation was reduced after the control for education. The difference before and after control for education is especially pronounced with respect to women in professional and clerical jobs. In Indonesia, Jordan, the Republic of Korea, Sri Lanka, Colombia and Peru, at least 15 per cent more women working in professional and clerical jobs were using contraception ^{38/} than women working in other occupations, but this was primarily due to the fact that women in such occupations were relatively well educated. After control for education, women in professional and clerical jobs are seen to be little, if any, more likely to be using contraception than are women in other non-farm jobs, except in Kenya, where use is 21 points higher among professional and

^{37/} A cautionary note should be added on statistical significance, which depends on the size of the effects, the size of the total sample and the distribution of cases across the occupational categories. In countries such as Bangladesh, Nepal and Pakistan, fewer than 1 per cent of the exposed women are employed in professional or clerical jobs, and a larger sample would be required to measure accurately their level of contraceptive use.

^{38/} Controlling for age, number of living children and rural/urban residence.

clerical women than among others. 39/ This difference is striking, not only by comparison to the modest occupation effects observed in most other countries but also by comparison to the relatively small effects in Kenya of several of the other socio-economic variables. 40/

In a number of countries, part of the relatively low use among women employed in agriculture can be attributed to their low level of education, rather than to any independent effect of agricultural employment. Yet it occurs with some consistency in Latin America that women working in agriculture are less likely than others to use contraception (although Panama is an exception), and this is also the case in Fiji, Malaysia and Thailand. These effects are usually of the order of 10 to 15 points difference in contraceptive use between women in farming occupations and those engaged in other types of work. In many of the countries in which this pattern is observed, the over-all effect of occupation is insignificant once education is controlled, but the fact that the pattern appears in so many countries suggests that agricultural work (or perhaps farm residence) is usually associated with relatively low levels of contraceptive use.

Where occupation has a significant effect, the pattern within countries is not consistent. In Kenya, the only difference is between professional and clerical women and all others, and in Malaysia farm women have the lowest level of use, followed by non-working women, then professional, clerical, sales and labour, with service workers showing the highest level of use. In Thailand, farm women have the lowest use, followed by non-working women and then by women with other sorts of jobs, while Indonesian women who are not working have the lowest level of use, and Indonesian farm women are as likely as other workers to be using contraception. (When husband's as well as wife's education is controlled, professional women are near non-working women in their level of use.) An irregular pattern may be observed for Guyana among the working women with service and farm women showing the lowest use and professional women the highest. The largest difference in Peru is between farm workers and all others.

In so far as these effects can be summarized, it appears that wife's occupation has a significant effect on contraceptive use after education is controlled in the countries of South-East Asia, in Kenya and in two of six Latin American countries. Even within South-East Asia the type of effect of

39/ In the Republic of Korea, a difference of over 10 percentage points remains, but the relationship between contraceptive use and occupation is not statistically significant.

40/ It may be noted that the definition of "work" was quite restrictive in Kenya so that working women comprise only 6 per cent of the total.

occupation differs among countries. The most common pattern of effects, one that appeared in all but one of the Latin American countries and in several Asian countries, was that farm workers have the lowest contraceptive use, followed by women who are not working; women with other kinds of jobs tend to have higher contraceptive use and there appears to be no consistent ranking of use among the three non-farm occupational categories. The effects of occupation, even when statistically significant, were frequently small by comparison to the strong effects of education that were discussed earlier.

Although it cannot be stated conclusively on the basis of the tests applied that occupation has no effect on contraceptive use, there is at present no basis for expecting that the size of differentials is very large or that occupation is very important in the sense of adding to explained variance, once statistical control is introduced for variables which are causally prior to occupation in most of the countries examined here. 41/

41/ A comparative analysis of factors related to recent marital fertility (G. Rodríguez and J. Cleland, "Socio-economic determinants of marital fertility in twenty countries: a multivariate analysis", paper presented at the World Fertility Survey Conference (London, July 1980), found that wife's work was substantially related to fertility, even after control for other socio-economic variables. In about two thirds of the samples examined the effect was statistically significant after control for other variables, including education, and the size of the effect was almost as large after control for other variables as before. Women who had not worked since marriage were found to have consistently higher fertility than women who worked. The results from the Rodríguez and Cleland study seem to be at variance with the results of the comparative analysis of fertility, since contraceptive practice is not consistently higher among working women than among non-working women, the relationship between occupation and contraceptive use was affected in an important way by control for other socio-economic variables, and the relationship was not, in most of the countries, statistically significant after control for other variables. The contraceptive analysis carried out by Rodríguez and Cleland was redone, using the "wife's work status" variable employed for the fertility analysis, to see whether the apparent discrepancies were due to the type of classification of work used in the analysis. The results of that analysis are not reproduced here as they add little to the results shown in table 22. The "wife's work status" variable had a weaker relationship to contraceptive practice than did "current occupation" in all 17 countries. After control for other socio-economic variables, as in line E of table 22, there was a statistically significant relationship between contraceptive use and work status in only three countries (Kenya, Indonesia and Malaysia), and in the other 14 countries the estimated size of the differential was trivially small. In the three countries in which the

(foot-note continued on following page)

E. Differentials in contraceptive use by husband's occupation

The occupation of the respondent's husband or partner is often regarded as an indicator of the couple's social status. By inference from the transition theory, ^{42/} it would be expected that farm couples would be less likely to use contraception and more likely to desire large families, whereas couples in which the husband has a professional, clerical or managerial job could be expected to be relatively more likely to use contraception (as a result of smaller family size goals), with other occupational groups falling between these extremes. Occupation is heavily influenced by education, so that it is of interest to examine the extent to which occupation contributes to an understanding of contraceptive practice independently of the effects of education on contraceptive use.

Four categories of husband's occupation are distinguished in this analysis: ^{43/} professional, clerical and managerial; sales and service, including household service; skilled and unskilled labour; farmers and farm workers. These occupation groups differ slightly from those used for the examination of the effect of wife's occupation on contraceptive use; for wives, the sales occupations were grouped with manual labour. As is described elsewhere, it was felt that the sales group had a somewhat different character for husbands than for

(foot-note continued from previous page)

relationship was significant the differentials were smaller than those reported in table 22. The fertility analysis had shown that non-working women generally had the highest fertility, so that it might be expected that non-working women would show the lowest contraceptive use. This was not the usual pattern observed, either before or after control for other variables. Non-working women tended to be intermediate in level of use between family of self-employed workers (who showed the lowest level of use) and the other workers. These results cast doubt on the idea that the association between women's work and fertility is due primarily to deliberate limitation of fertility by working women.

^{42/} The Determinants and Consequences of Population Trends, vol. I (United Nations publication, Sales No. E.71.XIII.5), pp. 100-101.

^{43/} Husbands reported to have no occupation, usually a small number, were counted with farmers; the latter was usually the largest category. Cases in which the husband's occupation was coded "not stated" were omitted from the analysis.

wives. ^{44/} The percentage distribution according to husband's occupation appears in table 16.

The data for the 15 countries for which information about husband's occupation was available ^{45/} reveal that, before controlling for the effects of other variables (table 23, line A), the relationship between husband's occupation is, in general, as expected. Couples in which the husband has a professional, clerical or managerial job have the highest levels of contraceptive use, followed by the sales and services category, then by the manual group, with the farm category showing the lowest level of use. Statistical control for the effects of demographic variables (line B) has little effect, as was also the case for other socio-economic variables examined in this study.

The addition of controls for type of place of residence (line C) and for husband's and wife's education (lines D and E) successively diminished the apparent effect of husband's occupation in most countries, although, in some, the control for wife's education had little impact. In most cases the final control variable, wife's occupation (line F), had little additional effect.

After control for the demographic variables and for the socio-economic variables regarded as causally prior to husband's occupation (rural/urban residence and husband's and wife's education), husband's occupation had a statistically significant effect on contraceptive use in 11 of the 15 countries. In Fiji, Nepal, Costa Rica and Guyana, the effect was insignificant. (In Kenya the effect became insignificant after the control for wife's occupation was added.)

The pattern of the relationship between husband's occupation and contraceptive use after control for demographic variables, rural/urban residence and education (line E of table 23) was generally in the direction that had been expected, but most of the differentials were small. Farm couples did, as anticipated, have the lowest level of use (or were tied for the lowest level) in 13 of the 15 countries. The exceptions were Nepal, where the differential was insignificant statistically, and Indonesia, where wives with agricultural jobs were observed to have a level of use similar to that of other workers (table 22, line E). The professional, clerical and managerial group was expected to show the highest level of use, and this was the case in 10 of the 15 countries. However, the difference in contraceptive use between extreme categories was small -

^{44/} United Nations Population Division, "Occupational classification systems constructed for application in the United Nations Programme of International Comparative Analysis of World Fertility Survey Data" (ESA/P/WP.70, 15 January 1981).

^{45/} This variable was unavailable on the current version of the data tape for Bangladesh and Pakistan, although it will become available on subsequent versions of the tapes.

10 percentage points or less - in seven of the 15 countries (Kenya, Fiji, Nepal, the Republic of Korea, Sri Lanka, Costa Rica and Guyana) and it did not exceed 20 points in any of the countries.

F. Explained variance

The discussion of factors related to contraceptive use has emphasized the size of the differentials according to demographic and socio-economic variables, and according to stated desire for more children. Another common way of examining relationships is through the use of statistics which are influenced both by the size of the differentials and by the proportion of the sample in each category of the explanatory variable. For the type of analysis conducted in this study, multiple regression analysis, the usual such statistics are partial and multiple correlation coefficients. The square of the multiple correlation coefficient (R^2) is interpreted as the proportion of variance explained by the predictor variables included in the analysis. The strength of association between a particular variable and contraceptive use, after control for other variables, may be summarized by a variety of statistics; the one chosen for the discussion below is the "R² added", the amount by which the explained variance increases when the variable of interest is added to the analysis.

Table 24 presents a summary of variance explained by the variables discussed earlier. ^{46/} Line 1 shows the percentage of variance explained by age and number of children without control for other variables; these variables explain from 2.4 per cent of the total variance (Bangladesh, Kenya) to roughly 9.7 per cent (Indonesia, Republic of Korea). Lines 2 through 6 of the table show the amount by which R^2 is increased when each socio-economic variable is added to a model containing age and number of children, and line 7 shows the R^2 added by all the socio-economic variables together. The fact that line 7 is much smaller than the sum of lines 2 through 6 indicates that the effects of the socio-economic variables overlap to a considerable extent. This point was discussed earlier in the chapter from the perspective of the size of differentials. Altogether (line 7) the socio-economic variables add between 2.7 per cent (Republic of Korea) and 22.0 per cent (Peru) to explained variance.

There is not necessarily an exact correspondence between amount of variance explained and size of the differential. For example, it is possible to observe a very large differential according to education but a small addition to variance explained, if a very high proportion of the sample is concentrated in a single

^{46/} The sex composition and child death variables are omitted, as the base population for the analysis of the effects of these variables was not the same as for the others. Except for the case of "number of sons" in the Republic of Korea, these variables were not strongly related to contraceptive use.

education group. In practice, however, for each country the socio-economic variables that show a relatively high addition to R^2 in lines 2 through 6 of table 24 are usually those for which relatively large differentials were observed in the tables discussed earlier.

Line 9 of table 24 shows the amount added to R^2 when "desire for more children" is added to a model containing the socio-economic and demographic variables. "Desire for more children" adds between 0.9 per cent (Colombia) and 6.5 per cent (Dominican Republic) to total variance explained. These additions are highly significant statistically in all countries.

A comparison of lines 7 and 8 shows that, as remarked earlier, the effect of the socio-economic variables is, in most cases, mediated only to a small extent by the fact that relatively high-status and urban couples tend to want to stop childbearing earlier than do others. Both desire for more children and the socio-economic variables have important effects on contraceptive practice, but their effects operate largely independently, in a statistical sense. In Jordan, "desire for more children" has a more important mediating effect than in other countries. 47/

Lines 10 and 11 show the total variance explained, with and without "desire for more children" included in the model. The demographic and socio-economic variables explain between 7.1 per cent (Bangladesh) and 27.0 per cent (Jordan) of total variance, which may be regarded as within the usual range observed for models of this sort. Although most of the total variance remains "unexplained", large demographic and socio-economic differentials in use are consistent with these levels of R^2 .

It can be seen that, for the countries examined here, relatively high levels of explained variance are due more to exceptionally large effects of socio-economic variables than to a heavy concentration of use at particular ages or family sizes (lines 1, 7 and 10).

These observations suggest that analyses which examine demographic and socio-economic differentials in contraceptive practice should not always be expected to "explain" a high proportion of total variance; indeed proportions much higher than the upper range of those observed in table 24 would probably reflect extremely sharp socio-economic disparities in the practice of contraception.

47/ In two countries, Costa Rica and Guyana, the variance added by the socio-economic variables is actually slightly higher after desire for more children is controlled than before, a result which may mean that couples of higher socio-economic status are more likely than others to use contraception for spacing. However, a careful examination of each variable's relationship to desire for more children would be required before any conclusions could be drawn.

G. Summary

Of the socio-economic variables chosen for analysis in this study, education is by far the most important variable explaining within-country differences in contraceptive use. In most but not all countries there are large differences in the level of contraceptive use according to the level of either husband's or wife's education, and the difference by wife's education are typically somewhat larger than those by husband's education. The education differentials usually remain large, though they are typically reduced in size when "rural/urban" residence is controlled. Education, particularly that of the wife, usually contributes more to explained variance in contraceptive practice than does any other socio-economic variable examined. In most countries both husband's and wife's education have an effect, often a substantial effect, that cannot be attributed to the level of the spouse's education.

In all countries but Indonesia, urban couples are more likely than rural couples to be using contraception, but this rural/urban difference is not always large. Differences of 20 percentage points or more are evident in six of the 20 countries, while seven countries show urban/rural differences of 10 points or less. The effect of rural/urban residence overlaps considerably with that of the other socio-economic variables.

Both the husband's and the wife's occupation variables indicate that agricultural work tends to be associated with relatively low contraceptive use, although the over-all relationship between contraceptive use and occupation was more consistently present, and more frequently statistically significant for husbands than for wives, once the effects of other variables were controlled. It is unclear whether this should be regarded as an effect of agricultural work per se or as a related effect of farm residence. 48/

Husband's occupation had a statistically significant effect on contraceptive use 49/ in 11 of the 15 countries for which data are available, but the effect was in most cases small, after control for other variables. The most common pattern of effects was that couples in which the husband had an agricultural job had the lowest level of contraceptive use, and couples in which the husband

48/ The interview schedules do not indicate whether the respondent lived on a farm. In some societies some members of an extended family residing on a farm may have non-farm jobs, so that farm work and farm residence are not equivalent.

49/ After control for demographic variables, rural/urban residence and husband's and wife's education.

had a professional or clerical job had the highest level of use. In only four of the 15 countries did the difference between these two categories exceed 10 percentage points, once demographic and other socio-economic variables were controlled.

The wife's current occupation had a statistically significant effect on use in six of 17 countries, after control for the other variables included in the analysis, and considerable variation in type of effect was observed. The most common pattern was that women with agricultural jobs were less likely than others to use contraception, women with other types of jobs more likely than others to use, and women with no job other than housework were intermediate in the level of use. Most of the statistically significant effects were small, once the effects of other variables were controlled, and it is concluded that the type of occupation has, in most countries, only a minor effect on contraceptive use. Differences in definitions of "work" employed in the various interviews, as well as real differences in the content and social context of women's work, obviously complicate the interpretation of these results.

It might be expected that countries which show large differentials according to one socio-economic variable will also exhibit large differentials according to other such variables, since, if large differentials are a consequence of "cultural lag", they may appear across any social dimension which influences fertility norms and values, affects basic living conditions, or which retards or facilitates the spread of information.

There is in fact some tendency for large differentials in contraceptive use according to rural/urban residence to occur in countries in which large education differentials are also observed 50/ (see fig. X). There is a weak tendency for the effect on use of husband's occupation (assessed after control for education, rural/urban residence, age and family size) to be larger in countries in which large differentials in use were observed according to husband's education. There is, however, essentially no relationship between the size or statistical significance of the effect of wife's occupation (assessed after control for demographic variables, rural/urban residence and education) and the size of other socio-economic differentials. 51/

50/ More precisely, large rural/urban differentials, assessed after statistical control for demographic variables, tend to occur in countries in which large education differentials are observed, after statistical control for demographic variables and for rural/urban residence.

51/ The basic questions dealing with classification of women's work were less standard from country to country than were the basic questions used to measure the other socio-economic characteristics, and it is difficult to tell what impact these definitional variations may have had.

Figure X uses the "average difference" statistics presented earlier to summarize the magnitude of the education and rural/urban differentials. ^{52/} For the purposes of this comparison the summary statistics are classified, somewhat arbitrarily, as "small", "medium" and "large". The dividing points used here are chosen solely to ease the task of drawing distinctions and making comparisons among the countries included in this analysis. The classification of a differential as "small" does not mean that it is unimportant, merely that it is small in relation to the much larger differentials observed in some of the other countries. ^{53/} In fact, some of the "small" education differentials represent a spread in the level of contraceptive use between the highest and lowest education categories of 20 or more percentage points.

Seven countries have education differentials in contraceptive use that are classed as "small"; the rural/urban differentials for these countries are small to moderate in size. This group includes three (Kenya, Nepal and Pakistan) of the four countries in which a very low over-all level of contraceptive use was observed. The fourth country with a low over-all level of use, Bangladesh, has a moderate-sized differential in use according to the wife's education and according to rural/urban residence. These four countries showed

^{52/} In the case of rural/urban differences in the level of use, a classification based on the "average difference" statistic will be identical to one based on the spread between rural and urban areas in the level of contraceptive use, as the summary statistic is simply one half of the rural/urban difference. In the case of education, a slightly different ranking of the size of differentials would emerge if the difference in the level of use between the highest and lowest education category were examined in lieu of the "average difference" statistic, but these differences are minor. Wife's education was chosen for this comparison, but a comparison employing husband's education would yield broadly similar results, as relatively large differentials according to husband's education tend to be observed in the same countries in which large differentials according to wife's education are observed.

^{53/} It must be stressed that differences in criteria used in each survey to distinguish rural from urban areas and differences in the type of educational system in each country make the interpretation of this rough comparison difficult. It is also possible that, where urban areas and persons with a high (or a low) degree of education comprise a small proportion of the population, these "unusual" groups will be sharply distinguished from others simply because they are so distinct in social characteristics from the bulk of the population. That is, there might be a relationship between the proportional distribution of the population according to rural/urban residence and education and the size of the differentials in use that are observed. While there may be some such effect of "relative status", this effect cannot readily be separated from other forces acting to influence differentials according to these variables, and it may simply be noted that the largest socio-economic differentials in contraceptive use are not, in general, observed in the countries in which urban couples or those with high educational attainment comprise a small fraction of the population.

distinctly smaller differentials in use according to age and number of living children than did the other countries examined, have not exhibited a decline in the level of marital fertility, are among the least economically developed, and all have family planning programmes rated as weak (see table 1).

The other four countries with small differentials in use according to wife's education 54/ and small to moderate differentials according to rural/urban residence are Costa Rica, Fiji, the Republic of Korea and Thailand, all four of which are rated as having strong family planning programmes but widely varying levels of development. In Costa Rica and the Republic of Korea, most women with little education and most rural women are aware of a place to obtain family planning services 55/ (see table 4), although in Nepal (another country with small differentials) there were significant differences by education and residence in awareness of services.

Moderate to large differentials in contraceptive use according to the wife's education are observed in all the countries which have family planning programmes classed as moderate in strength, the three countries which had no organized programme in the period preceding the survey, and Indonesia (a country with a strong programme). Four of the five countries with especially large rural/urban differentials in contraceptive practice also show large education differentials. Moderate-sized education differentials are observed in three countries (Guyana, Indonesia and Sri Lanka) with small rural/urban differentials, in two (Bangladesh and Panama) with moderate rural/urban differentials and in one (Malaysia) which shows a large spread between rural and urban areas in the level of current contraceptive use. Large differentials according to both variables appear in Jordan, Colombia, the Dominican Republic and Peru.

As remarked earlier, the countries with strong programmes do show relatively small socio-economic differences in contraceptive use, with Indonesia, which has a programme which has concentrated on reaching rural areas, showing essentially no rural/urban differential in use, even though the education differential is more substantial. It may also be noted that, although two of the countries which had no official programme, Jordan and Peru, showed very large rural/urban and education differentials, the third, Guyana, showed a small rural/urban differential and a moderate rather than large differential according to wife's education. These differences can probably be explained by Guyana's significantly higher level of development.

54/ Thailand is a somewhat anomalous case, since this analysis showed the differential in contraceptive practice according to husband's education to be larger than that according to wife's education; the husband's education differential would be classed by the criteria used here as moderate in size.

55/ This information is not available for Fiji or Thailand.

In conclusion, it can be said that there is some tendency for countries with large differentials in contraceptive use according to one socio-economic variable to have relatively large differentials according to other such variables. Contraceptive use differentials, particularly in the case of education, can be seen to relate to such factors as over-all socio-economic development, the stage of the demographic transition, and the strength of national family planning programme.

Table 16. Percentage distribution of exposed women according to selected socio-economic variables, selected WFS countries

Variable	Kenya	Bangladesh	Fiji	Indonesia	Jordan	Malaysia	Nepal	Pakistan	Republic of Korea	Sri Lanka	Thailand	Colombia	Costa Rica	Dominican Republic	Guyana	Panama	Peru
<u>Type of place of residence</u>																	
Urban	12.0	7.8	35.8	16.2	70.9	31.5	2.2	25.6	39.4	18.9	15.3	64.3	50.6	48.5	36.3	56.3	65.3
Rural	88.0	92.2	63.8	83.8	28.1	68.5	94.5	74.4	60.6	81.1	84.6	35.7	49.4	51.5	63.7	43.7	34.7
Not stated	--	--	0.4	--	--	--	3.3	--	--	--	0.1	--	--	--	--	--	--
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
<u>Respondent's education (years)</u>																	
0	52.2	76.1	19.3	56.1	46.3	31.9	94.9	89.0	16.7 ^{a/}	18.7	17.6	15.2	7.7	15.3	3.7	7.4	28.4
1-3	11.9	8.4	8.2	16.4	6.6	18.1	1.5	2.1	10.8	17.3	5.8	37.0	24.5	37.1	12.9	14.8	24.5
4-6	18.1	11.7	28.8	20.6	22.5	36.4	2.1	5.2	41.2	28.0	69.0	29.8	41.7	28.8	47.3 ^{b/}	38.8	24.1
7-9	12.8	2.3	33.4	3.7	14.3	7.3	0.7	2.0	19.1	20.0	2.4	12.1	9.9	11.9	29.8 ^{b/}	17.1	8.5
10+	4.9	1.3	10.4	3.2	10.4	6.2	0.4	1.7	12.2	16.0	5.1	5.7	16.1	7.0	5.8	21.9	14.5
Not stated, or other	0.1	0.2	--	--	--	--	0.5	--	0.1	--	0.1	0.2	--	--	0.5	--	--
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
<u>Husband's education (years)</u>																	
0	27.7	54.7	7.8	27.4	19.4	10.9	68.2 ^{c/}	56.9	7.9 ^{a/}	6.6	10.9	14.6	9.2	16.8	3.1	6.2	10.0
1-3	7.5	10.7	6.6	23.4	5.8	16.3	13.0 ^{c/}	4.9	4.7	14.8	3.7	35.2	24.7	29.3	10.6	15.2	25.6
4-6	21.1	16.1	27.8	34.5	31.1	48.1	6.9	16.2	27.1	33.2	67.2	29.7	38.9	25.7	47.2 ^{d/}	36.3	30.8
7-9	27.5	8.3	41.6	6.8	19.8	11.9	6.5	9.8	25.6	25.6	3.5	11.6	8.5	14.2	21.4 ^{d/}	16.4	9.7
10+	14.2	8.8	14.6	7.8	23.8	12.5	5.2	12.1	34.5	19.7	13.1	8.6	18.7	9.1	12.6	25.8	23.9
Not stated, or other	2.0	1.3	1.7	--	--	0.5	0.1	--	0.2	0.2	1.7	0.3	--	5.0	5.0	--	--
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

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Table 16. (continued)

Variable	Kenya	Bangladesh	Fiji	Indonesia	Jordan	Malaysia	Nepal	Pakistan	Republic of Korea	Sri Lanka	Thailand	Colombia	Costa Rica	Dominican Republic	Guyana	Panama	Peru
<u>Respondent's current occupation</u>																	
Own housework only	94.0	90.7	84.0	38.6	87.6	55.5	32.6	82.6	53.7	61.4	16.1	68.0	77.3	80.4	74.1	60.2	53.7
Professional, clerical	3.3	0.4	5.2	2.0	3.4	3.7	--	0.5	1.5	4.4	4.0	6.4	8.7	3.5	5.3	17.9	5.4
Service	0.7	3.5	3.2	12.7 ^{e/}	0.3	2.9	--	1.3	2.4	0.7	1.7	7.6	6.4	6.0	6.0	11.7	3.5
Sales and manual	1.3	4.3	4.9	5.2 ^{f/}	3.5	9.3	3.5	10.1	14.1	8.5	17.4	14.0	5.8	8.0	9.4	8.3	18.4
Agri-culture	0.7	1.1	2.6	41.4	5.2	28.5	63.7	5.5	28.2	24.9	60.8	4.0	1.8	2.0	5.1	1.9	19.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
<u>Husband's occupation^{g/}</u>																	
No work	3.9	...	0.1	0.7	0.1	3.0	1.2	...	0.5	0.7	0.2	0.3	--	0.1	0.4	0.3	0.3
Professional, clerical	14.5	...	12.6	9.0	19.6	13.1	4.5	...	17.3	12.7	10.0	11.3	19.6	7.1	16.1	17.4	17.2
Sales, service	19.9	...	13.5	18.1	39.3	18.6	8.0	...	17.0	16.6	10.4	16.1	15.3	19.6	17.2	19.0	14.7
Manual	23.9	...	41.0	16.2	33.0	29.9	8.7	...	32.4	29.5	18.3	35.5	33.2	32.3	43.4	36.5	29.0
Agri-culture	36.6	...	32.8	55.5	8.0	35.4	74.7	...	32.3	40.4	61.0	36.8	32.1	40.8	22.0	26.9	38.1
Not stated	1.2	...	--	0.6	--	--	2.9	...	0.3	0.1	--	--	--	--	0.7	0.8	0.8
Total	100.0	...	100.0	100.0	100.0	100.0	100.0	...	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
<u>Sample size</u>	4 214	4 645	3 634	5 638	2 337	4 487	4 325	3 334	3 866	4 709	2 569	2 323	2 222 ^{h/}	1 381	2 713	2 257	3 853

(Foot-notes continued on following page)

(Sources and footnotes to table 16)

Sources:

Data from World Fertility Survey First Country Reports tabulated from standard recode tapes. Excluding women who were currently unmarried, currently pregnant or who believed themselves to be infecund, but including those sterilized for contraceptive purposes. Except as noted, age-group is 15-49 or under 50 years.

- a/ Education categories are: none, less than primary, primary graduate, some secondary, secondary graduate and above.
- b/ Including 3.5 per cent who attended secondary school or higher, but for whom the number of years completed were not stated.
- c/ Including 8.4 per cent who attended primary school, but for whom the number of years completed were not stated.
- d/ Including 4.1 per cent who attended secondary school or higher, but for whom the number of years completed were not stated.
- e/ Sales and service occupations.
- f/ Manual occupations.
- g/ Confined to countries for which usable data were available on WFS standard recode tapes.
- h/ Women aged 20-49 years.

Table 17. Percentage of exposed women using contraception at the time of the interview, by respondent's education, with controls for selected demographic and socio-economic variables, selected WFS countries

Country and control variable	Total ^{a/}	Years of education completed					Average Difference ^{b/}
		0	1-3	4-6	7-9	10+	
<u>Africa</u>							
Kenya: ^{c/}							
A. Without control variables	10	6	9	13	17	27	6 **
B. Age, number of children	10	6	8	14	19	30	7 **
C. (B) + urban/rural residence	10	6	8	13	18	28	7 **
D. (C) + husband's education	10	7	8	13	17	26	6 **
E. (D) + respondent's and husband's occupations	10	7	9	13	15	19	4 **
<u>Asia and Oceania</u>							
Bangladesh:							
A	10	7	13	16	32	33	10 **
B	10	7	13	16	35	35	11 **
C	10	7	13	15	33	30	9 **
D	10	8	14	13	29	26	8 **
E ^{d/}	10	8	14	13	29	26	8 **
Fiji: ^{e/}							
A	56	59	62	56	50	59	3 **
B	56	52	56	53	55	73	6 **
C	56	53	56	54	54	70	5 **
D	56	55	57	54	54	66	4 **
E	56	53	56	55	55	65	3 *
Indonesia:							
A	37	33	37	40	51	61	9 **
B	37	32	38	42	49	61	8 **
C	37	32	38	43	51	63	9 **
D	37	33	38	41	43	53	5 **
E	37	34	38	41	43	50	5 **

(Table continued on following page)

Table 17. (continued)

Country and control variable	Total ^{a/}	Years of education completed					Average Difference ^{b/}
		0	1-3	4-6	7-9	10+	
Jordan:							
A	37	22	41	44	49	71	12 **
B	37	16	38	49	59	76	16 **
C	37	20	36	47	54	71	14 **
D	37	23	37	46	52	64	11 **
E	37	23	37	45	51	64	11 **
Malaysia:							
A	42	31	42	46	52	65	9 **
B	42	28	40	47	59	73	13 **
C	42	30	40	47	55	68	11 **
D	42	34	41	46	50	59	7 **
E	42	35	41	46	49	56	6 **
Nepal:							
A	3	3	7	10	20		5 **
B	3	2	8	10	20		5 **
C	3	3	8	10	14		3 **
D	3	3	6	6	8		2
E	3	3	6	5	8		2
Pakistan:							
A	7	6	15	13	26	34	9 **
B	7	6	15	14	27	36	9 **
C	7	6	13	11	20	29	7 **
D	7	7	12	9	17	25	5 **
E ^{d/}	7	7	12	9	16	25	5 **
Republic of Korea: ^{f/}							
A	46	45	44	43	47	55	3 **
B	46	38	38	44	53	60	8 **
C	46	39	39	44	52	59	7 **
D	46	42	43	44	49	55	4 **
E	46	43	44	44	49	52	3 *
Sri Lanka:							
A	42	29	35	43	48	54	8 **
B	42	24	33	41	51	61	11 **
C	42	25	34	41	50	60	11 **
D	42	27	35	41	49	58	9 **
E	42	28	36	41	48	56	8 **

(Table continued on following page)

Table 17. (continued)

Country and control variable	Total ^{a/}	Years of education completed					Average Difference ^{b/}
		0	1-3	4-6	7-9	10+	
Thailand:							
A	45	39	44	46	46	60	5 **
B	45	37	43	46	50	65	8 **
C	45	38	42	47	46	57	5 **
D	45	41	44	47	39	44	2
E	45	42	45	47	35	40	3
<u>Latin America</u>							
Colombia: <u>e/</u>							
A	54	29	44	64	76	82	18 **
B	54	29	44	64	78	84	19 **
C	54	34	46	61	73	79	15 **
D	54	38	48	60	67	69	11 **
E	54	38	49	60	67	68	10 **
Costa Rica: <u>e/</u>							
A	79	65	74	81	83	85	6 **
B	79	64	72	81	86	89	8 **
C	79	66	73	81	84	87	7 **
D	79	68	74	81	83	85	6 **
E	79	68	75	81	83	85	5 **
Dominican Republic:							
A	42	26	34	45	59	70	14 **
B	42	25	32	46	62	74	16 **
C	42	27	34	45	59	69	14 **
D	42	31	36	44	56	63	11 **
E	42	33	36	43	56	62	10 **
Guyana: <u>g/</u>							
A	38	36	41	37	35	54	6 **
B	38	31	37	32	35	63	9 **
C	38	32	39	33	35	62	9 **
D	38	35	41	35	35	56	7 **
E	38	36	42	35	35	56	7 **

(Table continued on following page)

Table 17. (continued)

Country and control variable	Total ^{a/}	Years of education completed					Average Difference ^{b/}
		0	1-3	4-6	7-9	10+	
Panama:							
A	65	44	49	66	76	73	12 **
B	65	41	47	65	77	77	14 **
C	65	45	50	65	74	74	11 **
D	65	50	53	65	73	72	9 **
E	65	52	55	66	72	69	7 **
Peru:							
A	41	16	31	54	64	72	19 **
B	41	15	31	55	66	73	20 **
C	41	22	34	50	60	66	15 **
D	41	26	35	48	56	60	12 **
E	41	26	36	48	55	60	11 **

Sources:

Tabulated from World Fertility Survey data tapes.

Notes:

* P < .05

** P < .01

a/ The level of contraceptive use shown here may differ from that shown in other tables because of the omission of cases with "not stated" responses from the multivariate analysis.

b/ Average absolute deviation of the within-category rates from the (un-weighted) mean of the category rates.

c/ Base population excludes women practising post-partum and terminal abstinence.

d/ Husband's occupation not available at present.

e/ Base population excludes women practising post-partum abstinence.

f/ The education categories are: none, less than primary, primary graduate, some secondary, secondary graduate and above.

g/ Women who attended secondary school or higher, but for whom the number of years completed was not stated, are included in the "7 to 9 years" category.

Table 18. Percentage of exposed women using contraception at the time of the interview, by husband's education, with controls for selected demographic and socio-economic variables, selected WFS countries

Country and control variable	Total ^{a/}	Years of education completed by husband					Average Difference ^{b/}
		0	1-3	4-6	7-9	10+	
<u>Africa</u>							
Kenya: ^{c/}							
A. Without control variables	10	6	4	12	10	19	4 **
B. Age, number of children	10	5	4	11	11	21	5 **
C. (B) + urban/rural residence	10	5	4	11	11	20	5 **
D. (C) + respondent's education	10	7	6	13	11	13	3 **
E. (D) + respondent's and husband's occupations	10	8	6	13	10	11	2 **
<u>Asia and Oceania</u>							
Bangladesh:							
A	10	8	7	9	13	23	5 **
B	10	8	7	9	13	24	5 **
C	10	8	7	9	12	22	4 **
D	10	9	8	9	11	15	2 *
E ^{d/}	10	9	8	9	11	15	2 *
Fiji: ^{e/}							
A	56	58	55	56	54	60	2
B	56	52	49	52	55	69	5 **
C	56	53	50	53	55	66	4 **
D	56	54	50	54	56	63	3 *
E	56	54	51	54	56	61	3
Indonesia:							
A	37	29	37	36	46	56	8 **
B	37	28	35	38	46	54	8 **
C	37	28	35	38	48	57	9 **
D	37	30	36	38	46	50	6 **
E	37	30	36	38	46	47	6 **
Jordan:							
A	37	19	33	36	33	59	9 **
B	37	12	28	35	40	61	12 **
C	37	19	28	35	38	57	10 **
D	37	26	32	37	39	47	6 **
E	37	28	33	38	39	44	5 **

(Table continued on following page)

Table 18. (continued)

Country and control variable	Total ^{a/}	Years of education completed by husband					Average Difference ^{b/}
		0	1-3	4-6	7-9	10+	
Malaysia:							
A	42	25	39	40	52	61	10 **
B	42	24	36	39	54	66	13 **
C	42	27	37	40	52	62	11 **
D	42	32	40	41	50	54	7 **
E	42	34	41	41	48	52	6 **
Nepal: ^{f/}							
A	3	2	4	2	5	13	3 **
B	3	2	5	3	6	14	4 **
C	3	2	4	3	6	13	3 **
D	3	2	5	3	5	11	3 **
E <u>d/</u>	3	2	4	3	5	10	2 **
Pakistan:							
A	7	5	5	7	8	19	4 **
B	7	5	4	8	9	20	4 **
C	7	6	5	8	7	16	3 **
D	7	6	5	8	7	13	2 **
E <u>d/</u>	7	6	5	8	7	13	2 **
Republic of Korea: ^{g/}							
A	46	42	37	42	44	52	4 **
B	46	36	33	41	44	54	6 **
C	46	37	35	41	44	54	5 **
D	46	40	37	44	45	50	4 **
E	46	41	38	45	45	49	3
Sri Lanka:							
A	42	30	37	37	47	50	6 **
B	42	26	34	36	47	55	9 **
C	42	26	35	36	47	54	9 **
D	42	34	40	39	45	45	3 **
E	42	35	40	40	44	44	3 *
Thailand:							
A	45	37	43	43	51	64	8 **
B	45	35	38	43	53	67	10 **
C	45	35	39	43	51	64	9 **
D	45	37	40	43	51	64	8 **
E	45	38	40	44	49	59	6 **

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Table 18. (continued)

Country and control variable	Total ^{a/}	Years of education completed by husband					Average Difference ^{b/}
		0	1-3	4-6	7-9	10+	
<u>Latin America</u>							
Colombia: <u>e/</u>							
A	54	33	45	58	74	83	16 **
B	54	33	44	59	75	83	16 **
C	54	39	47	56	69	77	12 **
D	54	46	50	54	63	67	7 **
E	54	47	51	54	61	65	6 **
Costa Rica: <u>e/</u>							
A	79	71	75	80	84	85	5 **
B	79	68	72	80	85	88	7 **
C	79	70	73	80	84	87	6 **
D	79	73	75	80	82	84	4
E	79	74	76	80	82	83	3
Dominican Republic:							
A	42	20	39	48	50	65	12 **
B	42	19	35	49	53	69	14 **
C	42	22	37	48	51	64	12 **
D	42	27	40	48	47	52	7 **
E	42	29	41	47	46	49	6 **
Guyana: <u>h/</u>							
A	38	25	37	35	36	48	5 **
B	38	24	30	31	36	55	8 **
C	38	25	31	33	35	54	7 **
D	38	26	32	34	37	49	6 **
E	38	27	33	35	36	48	5 **
Panama:							
A	65	40	54	64	73	74	11 **
B	65	38	52	63	74	76	13 **
C	65	42	56	64	72	73	10 **
D	65	51	60	65	69	68	6 *
E	65	55	63	66	68	65	3
Peru:							
A	41	15	21	44	53	66	18 **
B	41	13	19	44	55	68	19 **
C	41	23	26	43	49	60	12 **
D	41	34	33	44	44	48	6 **
E	41	36	35	44	42	46	4 **

(Sources and footnotes on following page)

Sources:

Tabulated from World Fertility Survey standard recode data tapes.

Notes:

* P < .05

** P < .01

a/ The level of contraceptive use shown here may differ from that shown in other tables because cases with "not stated" responses were omitted from the multivariate analysis.

b/ Absolute average deviation of the within-category rates from the (unweighted) mean of the category rates.

c/ Base population excludes women who were practising post-partum or terminal abstinence.

d/ Husband's occupation not available at present.

e/ Base population excludes women who were practising post-partum abstinence.

f/ Women whose husbands attended primary school but for whom the number of years completed was not stated are included in the "1 to 3 years" category.

g/ Education categories are: none, less than primary, primary graduate, some secondary, secondary graduate and above.

h/ Women whose husbands attended secondary school or higher but for whom the number of years completed was not stated are included in the "7 to 9" years category.

Table 19. Among women with three children, education differences in percentage of those currently married who desired no more children and in percentage of exposed who were currently using contraception, Colombia and Sri Lanka

Country and wife's education	Percentage of currently married fecund women with three children who wanted no more		Percentage of exposed women with three children currently using contraception	
	Percentage	Ratio to total percentage	Percentage	Ratio to total percentage
<u>Colombia</u>				
No education	53	82	27	47
Primary	68	105	54	95
More than primary	63	97	84	147
Total	65	100	57	100
<u>Sri Lanka</u>				
No education	66	90	26	54
Primary (1-5 years)	73	100	43	90
More than primary	75	103	60	125
Total	73	100	48	100

Table 20. Percentage of exposed women currently using contraception, by respondent's education and whether the respondent wanted more children, selected WFS countries

Country	Total	Years of education completed				
		0	1-3	4-6	7-9	10+
<u>Africa</u>						
Kenya:						
M: Wanted more children ^{a/}	7	4	5	9	12	19
NM: Wanted no more children	21	15	18	25	38	(48)
<u>Asia and Oceania</u>						
Bangladesh:						
M	3	2	3	4	9	
NM	14	10	18	21	44	
Fiji:						
M	35	27	31	33	35	40
NM	69	70	74	69	64	77
Indonesia:						
M	26	21	29	29	35	46
NM	53	48	55	62	75	89
Jordan:						
M	22	8	15	25	33	61
NM	59	41	69	73	78	84
Malaysia:						
M	34	17	29	39	44	55
NM	52	41	54	58	73	82
Nepal:						
M	--	--	4		13	
NM	8	8	(24)		(30)	
Pakistan:						
M	1	1	(--)	5	(12)	(15)
NM	15	13	(29)	26	(38)	(61)
Republic of Korea: ^{b/}						
M	17	10	11	13	19	28
NM	56	49	51	54	61	69
Sri Lanka:						
M	13	5	11	20	27	35
NM	54	38	47	55	64	73

(Table continued on following page)

Table 20. (continued)

Country	Total	Years of education completed				
		0	1-3	4-6	7-9	10+
Thailand:						
M	29	22	(18)	29	(27)	49
NM	56	46	55	57	(73)	(82)
<u>Latin America</u>						
Colombia:						
M	45	18	30	52	71	73
NM	56	33	49	67	79	86
Costa Rica:						
M	71	(44)	61	73	76	76
NM	84	71	80	88	89	94
Dominican Republic:						
M	25	8	13	27	46	59
NM	57	36	52	63	77	(85)
Guyana: ^{c/}						
M	29	(19)	18	23	27	63
NM	45	40	46	46	44	(67)
Panama:						
M	50	(24)	29	47	64	61
NM	74	51	59	75	84	85
Peru:						
M	33	7	20	41	58	63
NM	46	21	38	62	72	82

Sources:

Tabulated from World Fertility Survey standard recode tapes.

Notes:

Figures in parentheses indicate based on 20-49 cases.

a/ Including those who were undecided.

b/ Education categories are: none, less than primary, primary graduate, secondary graduate and above.

c/ Women who attended secondary school or higher but for whom the number of years completed was not stated are included in the "7 to 9 years" category.

Table 21. Percentage of exposed women currently using contraception, by urban/rural residence, with controls for demographic and socio-economic variables, selected WFS countries

Country and control variables	Total ^{a/}	Residence		Average Difference ^{b/}
		Urban	Rural	
<u>Africa</u>				
Kenya: ^{c/}				
A. Without control variables	10	18	9	4 **
B. Age, number of children	10	19	9	5 **
C. (B) + respondent's and husband's education	10	16	9	3 **
D. (C) + respondent's and husband's occupations	10	15	10	2 **
<u>Asia and Oceania</u>				
Bangladesh:				
A	10	23	9	7 **
B	10	21	9	6 **
C	10	18	9	5 **
D (C) + respondent's occupation ^{d/}	10	19	9	5 **
Fiji:				
A	56	61	52	4 **
B	56	64	51	6 **
C	56	62	52	5 **
D	56	61	52	4 **
Indonesia:				
A	37	40	36	2 *
B	37	38	36	1
C	37	30	38	4 **
D	37	34	37	2
Jordan:				
A	37	47	12	18 **
B	37	47	14	16 **
C	37	42	26	8 **
D	37	42	26	8 **
Malaysia:				
A	42	57	36	11 **
B	42	57	35	11 **
C	42	53	38	8 **
D	42	50	39	6 **

(Table continued on following page)

Table 21. (continued)

Country and control variables	Total ^{a/}	Residence		Average Difference ^{b/}
		Urban	Rural	
Nepal:				
A	3	20	3	9 **
B	3	19	3	8 **
C	3	15	3	6 **
D	3	15	3	6 **
Pakistan:				
A	7	18	4	7 **
B	7	17	4	7 **
C	7	14	5	5 **
D (C) + Respondent's occupation ^{d/,e/}	7	14	5	5 **
Republic of Korea:				
A	46	48	42	3 **
B	46	49	41	4 **
C	46	47	44	2
D	46	46	45	--
Sri Lanka:				
A	42	49	40	5 **
B	42	49	40	5 **
C	42	44	41	2 *
D	42	42	41	--
Thailand:				
A	45	59	43	8 **
B	45	60	43	8 **
C	45	54	44	5 **
D	45	47	45	1
Latin America				
Colombia:^{e/}				
A	54	64	35	14 **
B	54	64	35	15 **
C	54	60	43	8 **
D	54	57	49	4 **
Costa Rica:^{e/}				
A	79	82	76	3 **
B	79	84	74	5 **
C	79	81	77	2
D	79	80	78	1

(Table continued on following page)

Table 21. (continued)

Country and control variables	Total ^{a/}	Residence		Average Difference ^{b/}
		Urban	Rural	
Dominican Republic:				
A	42	53	32	10 **
B	42	53	32	11 **
C	42	47	37	5 **
D	42	44	39	2
Guyana:				
A	38	41	36	2 **
B	38	44	34	5 **
C	38	41	36	3 *
D	38	41	36	2 *
Panama:				
A	65	72	56	8 **
B	65	73	55	9 **
C	65	68	61	4 **
D	65	67	63	2
Peru:				
A	41	55	15	20 **
B	41	55	16	19 **
C	41	48	28	10 **
D	41	46	33	7

Sources:

Tabulated from World Fertility Survey standard recode tapes.

Notes:

* P < .05

** P < .01

a/ The level of contraceptive use shown here may differ from that shown in other tables because cases with "not stated" responses were omitted from the multivariate analysis.

b/ Average absolute deviation of the within-category rates from the (unweighted) mean of the category rates.

c/ Base population excludes women who were practising post-partum and terminal abstinence.

d/ Husband's occupation not available at present.

e/ Base population excludes women who were practising post-partum abstinence.

Table 22. Percentage of exposed women currently using contraception, by respondent's current occupation, with control for demographic and socio-economic variables, selected WFS countries

Country and control variable	Total ^{a/}	Respondent's occupation					Average difference ^{b/}
		Own housework only	Professional, clerical, managerial	Service	Sales, Labour	Farm	
<u>Africa</u>							
Kenya: ^{c/}							
A. Without control variables	10	9	42		11		14 **
B. Age, number of children	10	9	42		12		14 **
C. (B) + urban/rural residence	10	9	40		11		13 **
D. (C) + respondent's education	10	9	32		11		10 **
E. (D) + husband's education	10	10	31		10		10 **
F. (E) + husband's occupation	10	10	31		10		9 **
<u>Asia and Oceania</u>							
Bangladesh:							
A	10	10	11		9	5	2
B	10	10	10		8	5	2
C	10	10	10		8	6	1
D	10	9	10		10	7	1
E	10	10	10		10	7	1
F ^{d/}	...	...	...		...	...	...
Fiji: ^{e/}							
A	56	58	51	37	42	42	7 **
B	56	55	74	53	52	42	8 **
C	56	55	71	53	50	45	7 **
D	56	56	63	54	50	46	5 *
E	56	56	62	54	50	46	4
F	56	56	61	55	51	46	4

(Table continued on following page)

Table 22. (continued)

Country and control variables	Total ^{a/}	Respondent's occupation					Average difference ^{b/}
		Own housework only	Professional, clerical, managerial	Service	Sales, Labour	Farm	
Indonesia:							
A	37	33	62	41	36	37	8 **
B	37	33	61	41	37	38	8 **
C	37	32	60	40	37	38	7 **
D	37	32	43	41	37	40	3 **
E	37	31	41	41	37	40	3 **
F	37	32	40	42	39	39	3 **
Jordan:							
A	37	34		72		53	13 **
B	37	37		54		12	15 **
C	37	37		48		32	6 **
D	37	38		35		36	1
E	37	38		34		38	2
F	37	37		33		40	2
Malaysia:							
A	42	44	64	67	50	30	11 **
B	42	45	70	66	50	29	13 **
C	42	43	66	62	49	33	11 **
D	42	43	49	63	50	36	7 **
E	42	42	47	63	50	37	7 **
F	42	42	46	62	49	39	6 **
Nepal:							
A	3	5		3		2	1 **
B	3	5		3		2	1 **
C	3	4		2		2	1 **
D	3	4		2		2	1 **
E	3	4		2		3	1
F	3	4		3		3	1

(Table continued on following page)

Table 22. (continued)

Country and control variable	Total ^{a/}	Respondent's occupation					Average difference ^{b/}
		Own housework only	Professional, clerical, managerial	Service	Sales, Labour	Farm	
Pakistan:							
A	7	8	21	7	--	6 **	
B	7	8	19	6	--	5 **	
C	7	8	16	5	3	5 **	
D	7	8	13	6	4	3	
E	7	8	13	6	4	3	
F d/	...	...	...	...	...	...
Republic of Korea:							
A	46	45	64	51	52	43	6 **
B	46	48	71	46	49	39	8 **
C	46	47	69	45	47	42	8 **
D	46	46	61	45	49	43	5
E	46	45	60	45	49	44	5
F	46	45	59	44	49	46	4
Sri Lanka:							
A	42	43	55	45	34	6 **	
B	42	44	60	43	32	8 **	
C	42	43	59	43	33	7 **	
D	42	42	44	43	39	1	
E	42	42	43	44	40	1	
F	42	41	42	42	42	--	
Thailand:							
A	45	50	65	58	39	8 **	
B	45	51	69	58	39	9 **	
C	45	50	66	57	39	8 **	
D	45	50	63	57	39	8 **	
E	45	48	59	56	41	6 **	
F	45	45	59	51	43	5	

(Table continued on following page)

Table 22. (continued)

Country and control variable	Total ^{a/}	Respondent's occupation					Average difference ^{b/}
		Own housework only	Professional, clerical, managerial	Service	Sales, Labour	Farm	
<u>Latin America</u>							
Colombia: ^{e/}							
A	54	52	78	62	60	25	13 **
B	54	52	79	61	58	26	13 **
C	54	53	74	55	54	41	7 **
D	54	53	58	60	54	44	4
E	54	53	57	60	55	44	4
F	54	54	57	60	53	46	4
Costa Rica: ^{e/}							
A	79	78	84	81	87	(70)	5 *
B	79	78	86	80	88	(69)	6 **
C	79	78	84	74	87	(71)	5 *
D	79	78	79	81	87	(73)	3
E	79	78	79	81	87	(74)	3
F	79	78	79	81	87	(74)	3
Dominican Republic:							
A	42	40	72	50	47	(14)	14 **
B	42	40	68	49	47	(15)	13 **
C	42	41	63	43	43	(22)	9 **
D	42	42	43	43	42	(26)	5
E	42	42	42	43	42	(28)	5
F	42	42	42	42	42	(30)	4
Guyana:							
A	38	36	55	33	42	35	7 **
B	38	36	63	34	41	28	9 **
C	38	36	61	32	41	29	9 **
D	38	37	49	33	42	31	6 **
E	38	37	47	33	42	32	5 *
F	38	37	47	33	42	32	5

(Table continued on following page)

Table 22. (continued)

Country and control variable	Total ^{a/}	Respondent's occupation					Average difference ^{b/}
		Own housework only	Professional, clerical, managerial	Service	Sales, Labour	Farm	
Panama:							
A	65	62	77	67	71	(50)	7 **
B	65	62	79	68	71	(49)	8 **
C	65	63	75	66	70	(56)	5 **
D	65	63	71	66	68	(62)	3
E	65	63	71	66	68	(63)	3
F	65	64	70	66	68	(66)	2
Peru:							
A	41	45	70	48	51	14	13 **
B	41	45	68	47	52	14	12 **
C	41	43	59	43	43	29	6 **
D	41	42	42	45	49	34	4 **
E	41	42	41	45	48	34	3 **
F	41	42	41	44	47	35	3 **

Sources:

Tabulated from World Fertility Survey standard recode tapes.

Notes:

* P < .05

** P < .01

Figures in parentheses indicate based on 20-49 cases.

^{a/} The level of contraceptive use shown here may differ from that shown in other tables because cases with "not stated" responses were omitted from the multivariate analysis.

(Foot-notes continued on following page)

(Foot-notes to table 22. (continued))

- b/ Average absolute deviation of the within-category rates from the (unweighted) mean of the category rates.
- c/ Base population excludes women who were practising post-partum and terminal abstinence.
- d/ Husband's occupation not available at present.
- e/ Base population excludes women who were practising post-partum abstinence.

Table 23. Percentage of exposed women currently using contraception, by husband's current occupation, with control for demographic and socio-economic variables, selected WFS countries

Country and control variable ^{a/}	Total	Occupation of husband				Average Difference ^{b/}
		Professional, Sales, clerical, managerial	Service	Labour	Farm	
<u>Africa</u>						
Kenya: ^{c/}						
A. Without control variables	10	20	11	9	7	4 **
B. Age, number of children	10	20	11	9	7	4 **
C. (B) + urban/rural residence	10	20	11	9	8	4 **
D. (C) + husband's education	10	16	11	9	9	3 **
E. (D) + wife's education	10	14	11	9	9	2 *
F. (E) + wife's occupation	10	13	11	9	10	1
<u>Asia and Oceania</u>						
Fiji: ^{c/}						
A	56	63	55	56	53	3 **
B	56	68	58	55	50	5 **
C	56	66	55	55	53	4 **
D	56	61	55	56	54	3
E	56	60	54	56	54	2
F	56	59	54	56	54	2
Indonesia:						
A	37	57	31	32	37	9 **
B	37	54	31	32	37	8 **
C	37	54	31	32	37	8 **
D	37	45	31	32	39	5 **
E	37	44	31	32	39	5 **
F	37	45	31	33	38	5 **
Jordan:						
A	37	60	32	36	11	13 **
B	37	60	33	36	8	14 **
C	37	56	35	33	22	10 **
D	37	46	35	36	28	5 **
E	37	43	37	36	30	4 **
F	37	43	37	36	30	4 **

(Table continued on following page)

Table 23. (continued)

Country and control variable ^{a/}	Total	Occupation of husband			Average Difference ^{b/}	
		Professional, clerical, management	Sales, Service	Labour Farm		
Malaysia:						
A	42	60	53	45	30	9 **
B	42	62	53	44	30	10 **
C	42	58	51	43	34	8 **
D	42	49	49	44	36	4 **
E	42	47	48	44	37	3 **
F	42	46	47	43	38	3 **
Nepal:						
A	3	7	8	2	2	3 **
B	3	8	8	2	2	3 **
C	3	7	7	2	2	2 **
D	3	5	5	2	3	1
E	3	5	5	2	3	1
F	3	5	5	2	3	1
Republic of Korea:						
A	46	57	51	43	40	6 **
B	46	58	51	44	39	6 **
C	46	57	50	43	40	6 **
D	46	53	49	44	41	4 **
E	46	52	49	45	42	4 **
F	46	52	49	45	42	4 **
Sri Lanka:						
A	42	53	49	45	33	6 **
B	42	56	48	45	32	7 **
C	42	55	48	45	33	7 **
D	42	48	47	45	35	5 **
E	42	45	45	45	37	3 **
F	42	45	45	45	36	3 **
Thailand:						
A	45	59	58	55	38	7 **
B	45	61	59	55	38	8 **
C	45	60	58	54	38	7 **
D	45	42	57	55	41	7 **
E	45	50	56	55	40	5 **
F	45	49	54	53	41	4 **

(Table continued on following page)

Table 23. (continued)

Country and control variable ^{a/}	Total	Occupation of husband				Average Difference ^{b/}
		Professional, clerical, management	Sales, Service	Labour	Farm	
<u>Latin America</u>						
Colombia: ^{c/}						
A	54	78	63	62	35	12 **
B	54	78	63	61	35	12 **
C	54	74	59	58	42	8 **
D	54	62	58	58	45	5 **
E	54	59	58	58	46	5 **
F	54	59	58	58	46	4 **
Costa Rica: ^{c/}						
A	79	84	82	80	74	3 **
B	79	86	83	79	73	4 **
C	79	85	82	79	75	3 **
D	79	81	81	79	77	2
E	79	81	81	79	77	1
F	79	81	81	79	77	1
Dominican Republic:						
A	42	66	55	46	28	12 **
B	42	68	55	47	27	12 **
C	42	64	53	45	31	11 **
D	42	53	51	44	35	6 **
E	42	50	51	43	35	5 **
F	42	49	51	43	36	5 **
Guyana:						
A	38	45	39	35	35	3 **
B	38	49	41	37	31	6 **
C	38	47	40	36	33	5 **
D	38	41	39	38	35	2
E	38	39	40	38	36	1
F	38	39	40	38	36	1
Panama:						
A	65	78	69	69	49	9 **
B	65	80	69	69	48	9 **
C	65	78	68	68	52	7 **
D	65	76	67	67	55	6 **
E	65	75	67	66	56	5 **
F	65	75	67	66	56	5 **
Peru:						
A	41	66	56	49	19	14 **
B	41	66	56	49	19	14 **
C	41	59	50	43	29	9 **
D	41	49	47	44	34	5 **
E	41	45	47	44	35	4 **
F	41	45	46	44	36	3 **

(Sources and foot-notes on following page)

(Sources and foot-notes to table 23)

Sources:

Tabulated from World Fertility Survey standard recode tapes.

Note:

* P < .05 ** P < .01

a/ Data not currently available for Bangladesh and Pakistan.

b/ Average absolute deviation of the within-category rates from the (unweighted) mean of the category rates.

c/ Base population excludes women who were practising post-partum abstinence.

Table 24. Percentage of variance in current contraceptive use among exposed women explained by selected sets of variables, selected WFS countries

Variable	Kenya ^{a/}	Bangla- desh	Fiji ^{b/}	Indo- nesia	Jordan	Malay- sia	Nepal	Pak- istan	Republic of Korea	Sri Lanka	Thai- land	Colom- bia <u>b/</u>	Costa Rica <u>b/</u>	Dominican Republic	Guy- ana	Pan- ama	Peru
<u>Demographic variables</u>																	
1. Age and number of living child- ren together	2.4	2.4	16.0	9.7	6.5	3.7	3.1	4.3	9.7	8.8	5.6	6.4	7.1	6.9	5.2	4.2	3.6
<u>Socio-economic variables, after control for demographic variables</u>																	
2. Rural/urban residence	1.2	1.6	1.4	--	9.3	4.2	2.2	4.8	0.5	0.5	1.5	7.5	1.1	4.4	0.8	3.3	13.5
3. Wife's education	4.2	3.7	1.4	1.9	16.3	5.2	1.9	4.0	1.8	5.2	1.3	10.2	2.4	7.5	3.3	5.9	17.1
4. Husband's education	2.9	2.4	1.3	2.1	10.2	5.1	3.0	3.4	1.7	3.0	3.1	8.3	2.1	7.4	2.8	4.5	14.3
5. Wife's current occupation	3.8	--	1.0	0.9	1.7	4.2	0.6	1.2	0.8	1.5	3.3	2.1	0.7	1.8	2.3	1.7	7.7
6. Husband's occupation	2.3	...	1.2	1.6	7.5	5.1	1.2	...	1.7	2.9	3.8	8.9	1.4	9.7	1.4	5.2	1.3
7. All socio-economic variables, after control for demo- graphic vari- ables	6.8	4.7	3.0	4.1	20.5	9.9	4.6	7.3	2.7	6.2	5.4	14.4	3.6	12.0	5.1	7.8	22.0
8. All socio-economic variables, after control for demo- graphic vari- ables and desire for more children	6.1	4.2	2.6	4.0	14.7	8.2	3.8	6.4	2.1	6.3	5.3	14.0	3.4	10.8	5.5	6.8	21.3

(Table continued on following page)

Table 24. (continued)

Variable	Kenya ^{a/}	Bangla- desh	Fiji ^{b/}	Indo- nesia	Jordan	Malay- sia	Nepal	Pak- istan	Republic of Korea	Sri Lanka	Thai- land	Colom- bia ^{b/}	Costa Rica ^{b/}	Dominican Republic	Guy- ana	Pan- ama	Peru
<u>Desire for more children</u>																	
9. After control for demographic and socio-economic variables	1.8	1.2	3.6	3.1	5.3	1.7	1.7	1.9	3.8	3.4	4.2	0.9	2.5	6.5	1.2	4.1	1.1
<u>Total amount of variance explained</u>																	
10. Demographic and socio-economic variables	9.2	7.1	19.0	14.9	27.0	13.6	7.5	11.6	12.4	15.0	11.0	20.8	10.7	18.9	10.3	12.0	25.6
11. Demographic and socio-economic variables plus desire for more children	10.9	8.3	22.6	16.9	32.3	15.2	9.1	13.5	16.2	18.4	15.2	21.7	13.3	25.4	11.5	16.1	26.7
<u>Total number of cases in the analysis</u>	3 578	4 478	3 214	5 607	2 338	4 465	4 198	4 697	3 851	4 697	2 502	2 206	2 178	1 310	2 543	2 257	3 824

Sources:

Tabulated from World Fertility Survey magnetic tapes.

a/ Excluding women who were practising post-partum or terminal abstinence.

b/ Excluding women who were practising post-partum abstinence.

Figure VI

Percentage of exposed women that were using any method of contraception and the percentage that were using a modern method, by respondent's education, controlling for age and number of living children, 17 WFS countries

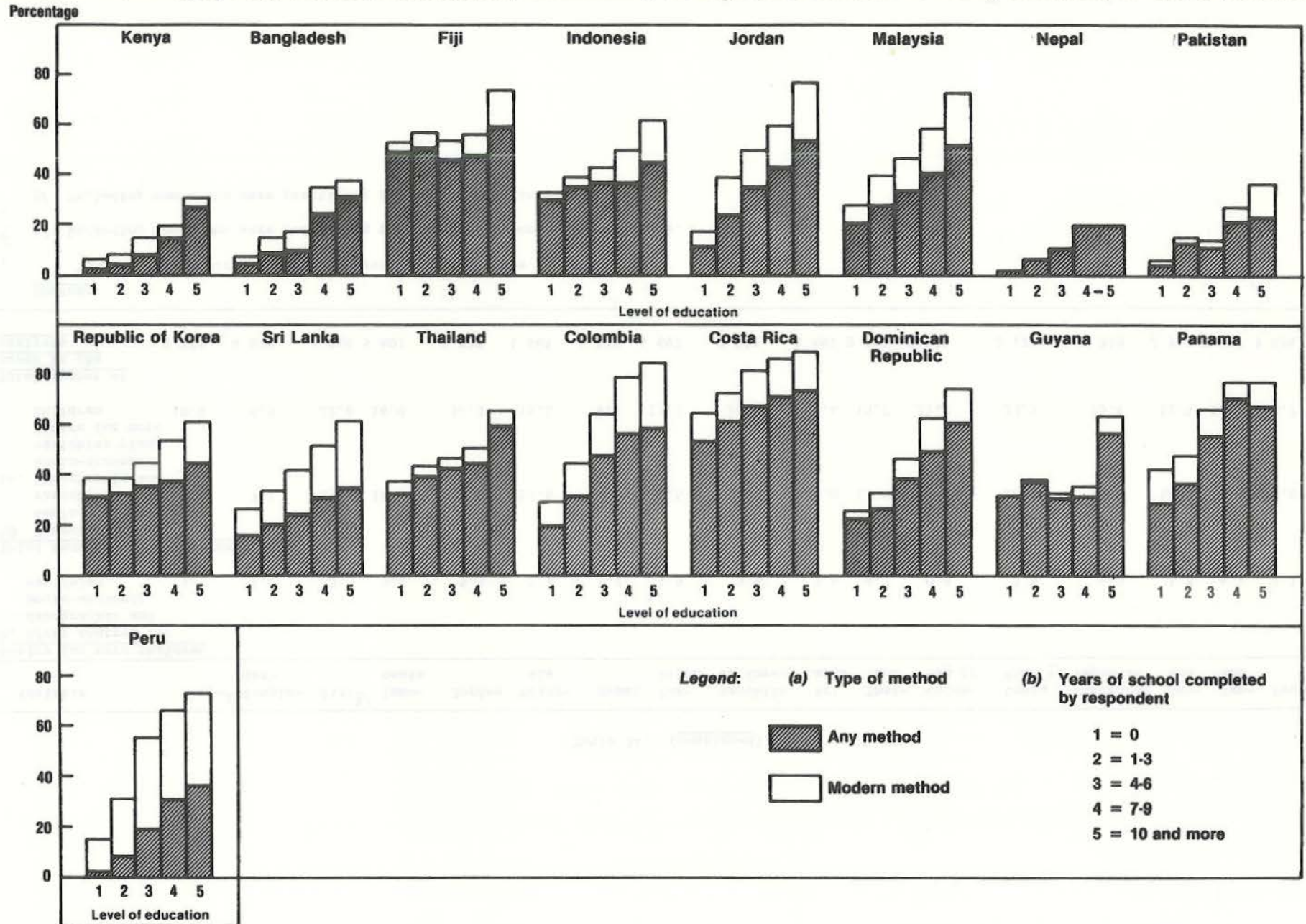


Figure VII
Percentage of exposed women who were currently using contraception,
by husband's and wife's education, 13 WFS countries

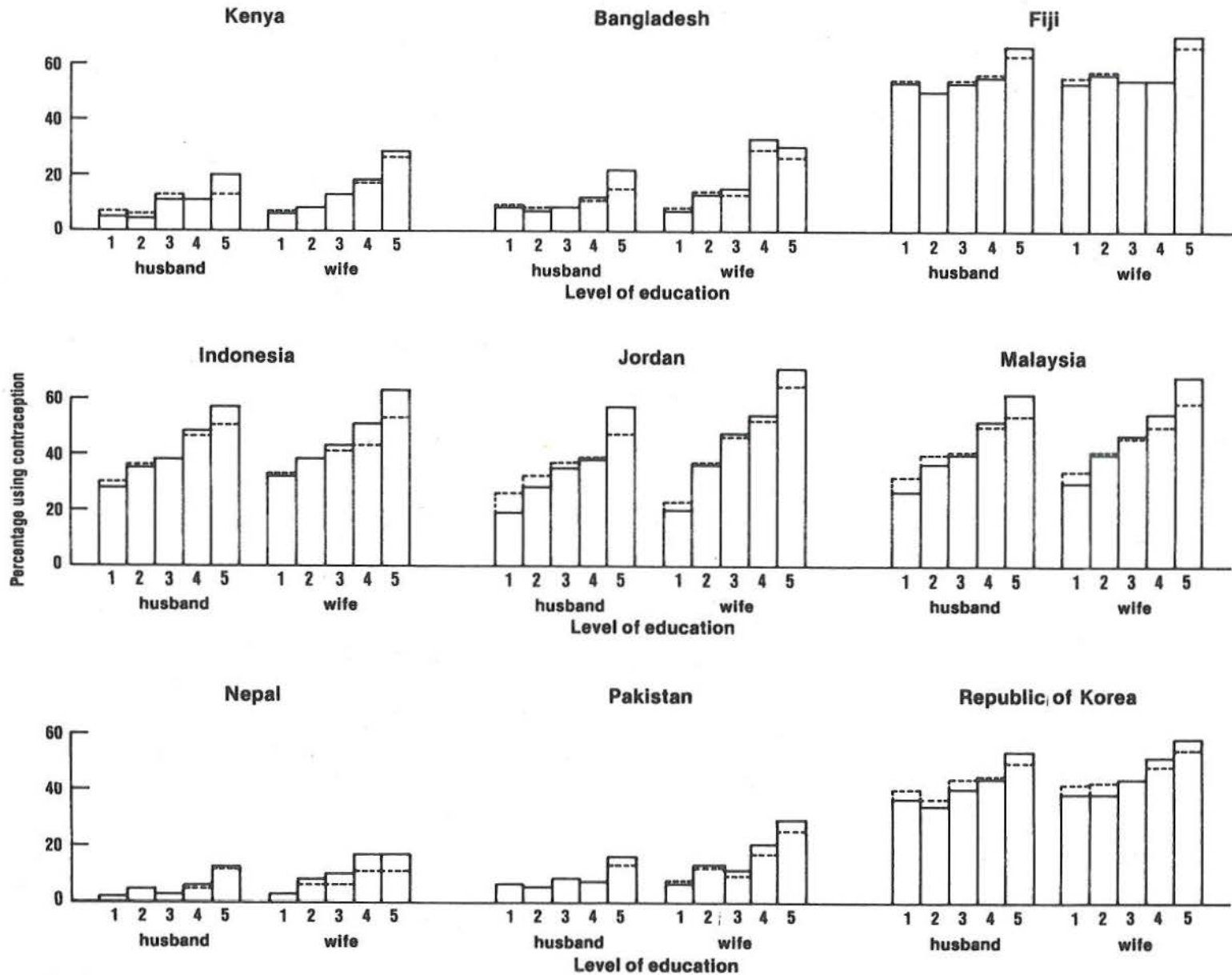


Figure VII (continued)

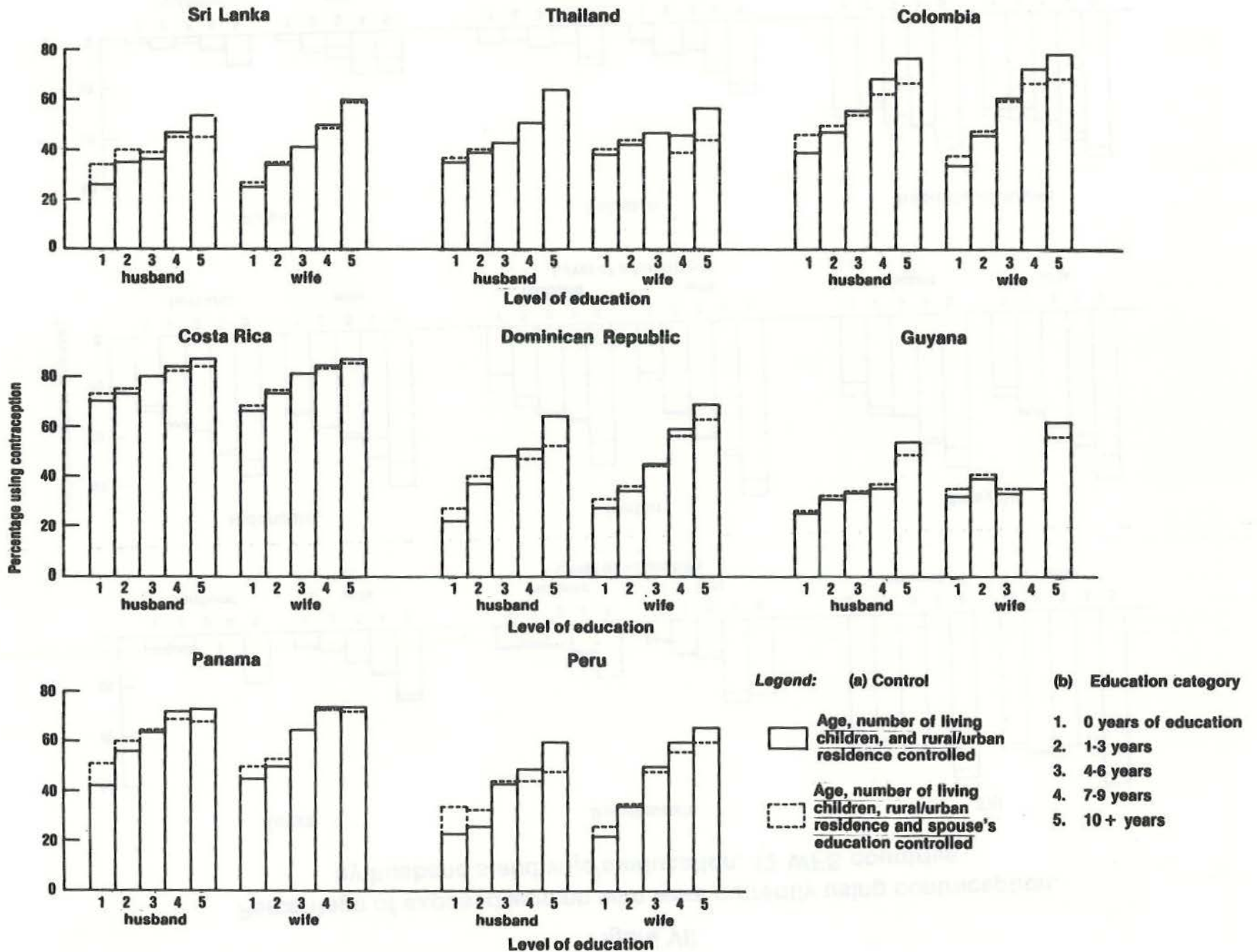
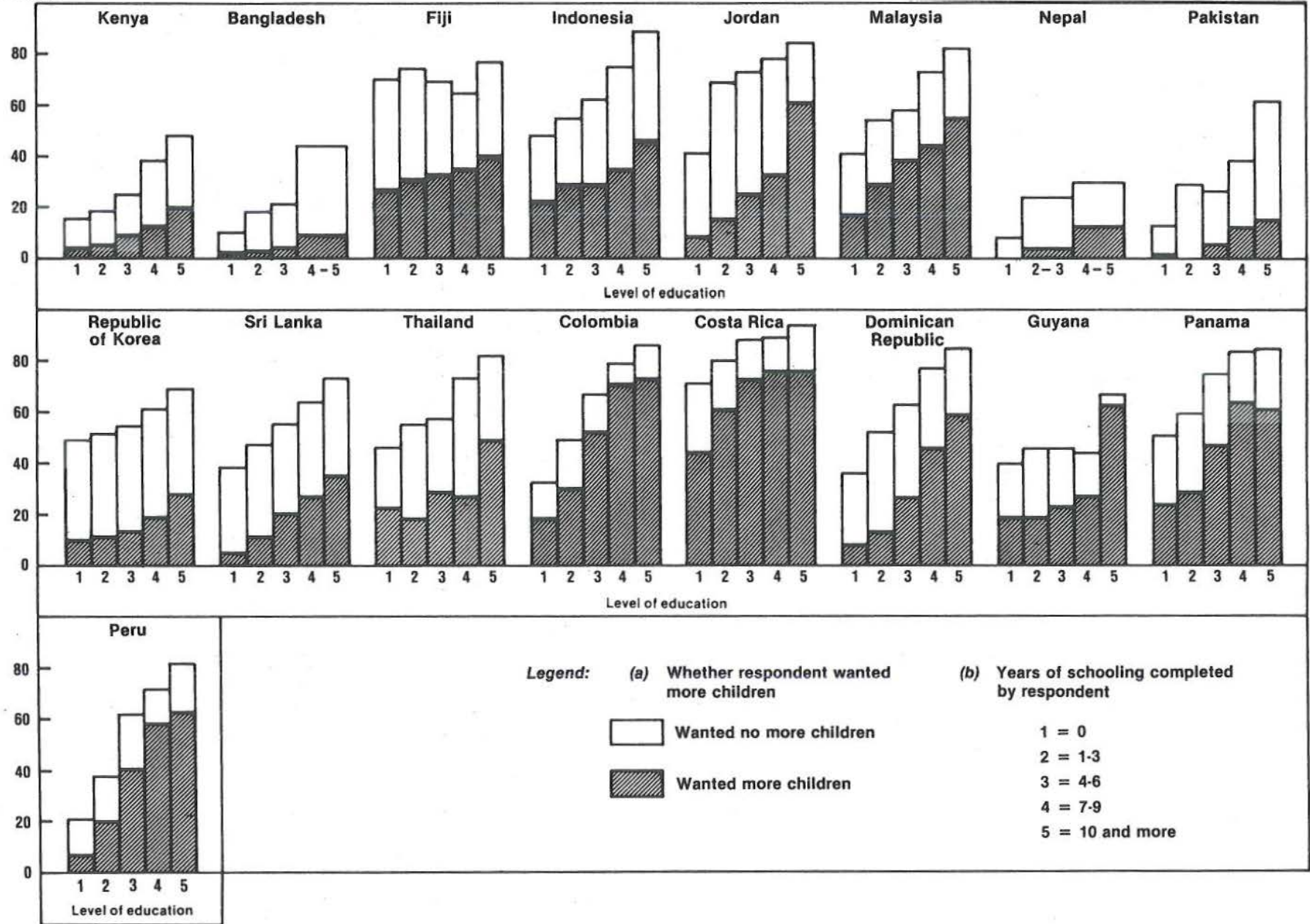


Figure VIII

Percentage of exposed women who were currently using contraception, by respondent's education and whether respondent wanted more children, 17 WFS countries

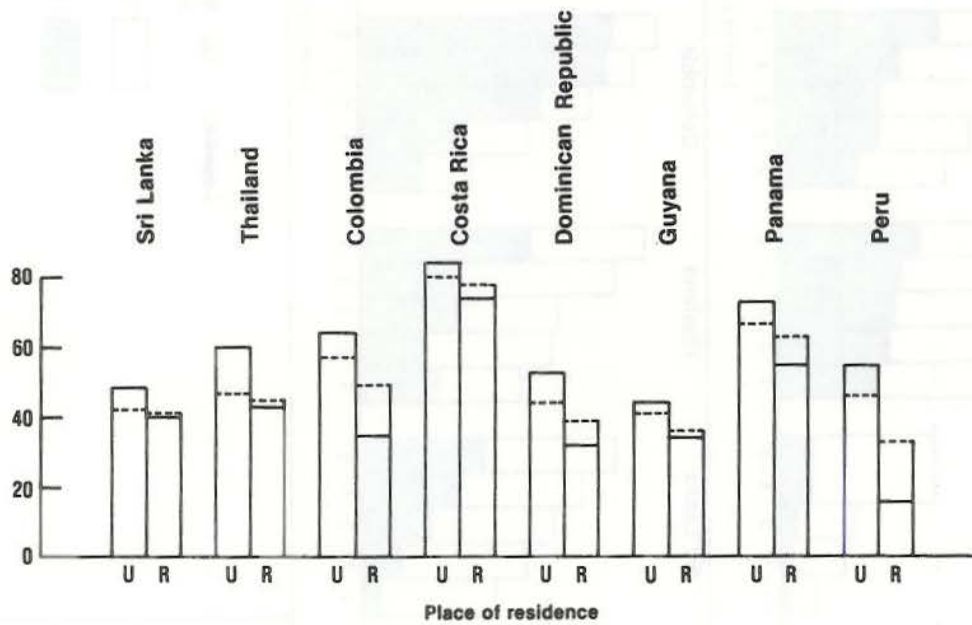
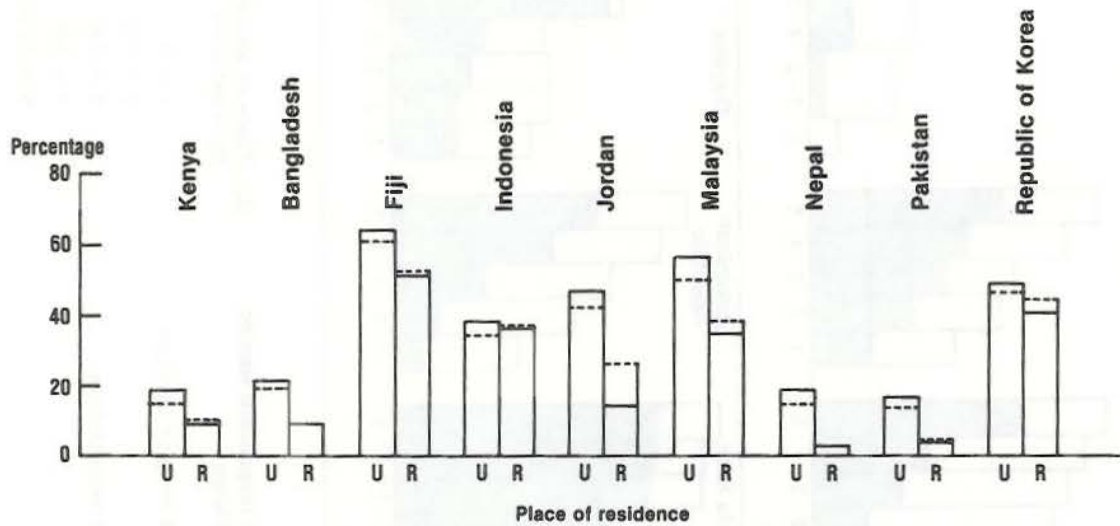
Percentage



- 145 -

Figure IX

Percentage of exposed women currently using contraception, by rural/urban residence, 17 WFS countries



Legend:

(a) Residence
 U - Urban area
 R - Rural area

(b) Control variables
 [Solid Line] Age and number of living children controlled
 [Dashed Line] Age, number of living children, and husband's and wife's education and occupations controlled

Figure X. Seventeen WFS countries classified according to the relative size of rural/urban and wife's education differentials in contraceptive use

		Education Differential		
		Small	Medium	Large
Rural/urban differential/	Small	Kenya Republic of Korea Costa Rica	Indonesia Sri Lanka Guyana	
	Medium	Fiji Nepal Pakistan Thailand	Bangladesh Panama	
	Large		Malaysia	Jordan Colombia Dominican Republic Peru

Source: Table 16, line C, and table 21, line B.

Note:

Education differentials:

- Small = Average difference ≤ 7
- Medium = Average difference 8 to 11
- Large = Average difference ≥ 12

Rural/urban differential:

- Small = Average difference ≤ 5
- Medium = Average difference 6 to 9
- Large = Average difference ≥ 10

Chapter IV

TRENDS IN CONTRACEPTIVE USE BY NUMBER OF LIVING CHILDREN, RURAL/URBAN RESIDENCE AND EDUCATION

The available data do not, for the most part, permit an examination of the evolution of differentials in contraceptive practice dating from a time of stable, high-fertility conditions. Many of the populations for which trend data are shown in tables 25-27 had already begun the movement to lower fertility by the date of the first available survey, although the earlier surveys do generally predate any extensive activity by official family planning programmes. Only in Malaysia and in rural Mexico, Peru and Thailand was the level of contraceptive use 10 per cent or less at the earliest survey.

None the less, it is valuable to examine trends in differentials in contraceptive use to the extent that data permit. As discussed earlier in this report, theories of the demographic transition predict certain changes in the pattern of contraceptive use in the transition process. The WFS surveys, for many countries with previous KAP-type surveys, provide an additional data point which, in many cases, makes comparisons possible for the first time. To maximize comparability with previous surveys, special tabulations of the WFS data were made for most of the countries presented. 1/

By the time of the last survey shown, the rate of current contraceptive practice among married women was at least 60 per cent 2/ in rural and urban Costa Rica, in Bogota and in Panama City, rates which are within the range

1/ A number of the earlier surveys covered only rural or only urban areas, and it was not always feasible to reproduce with WFS data exactly the same geographical divisions used earlier. The Latin American metropolitan surveys conducted in 1963/64 are compared either with the same metropolitan area or with all metropolitan areas as recorded in the WFS. The Latin American rural surveys conducted in 1969/70 are compared with rural areas as coded in the WFS, for Colombia, Costa Rica and Peru. However, the sampling universe for the 1969/70 surveys included places up to 20,000 in size and contains some places counted as urban in the WFS surveys. Those surveys generally employed the administrative definition of "urban" used for the census of each country:

Colombia - population living in nuclei of 1,500 or more inhabitants;

Costa Rica - administrative centres of cantons, with the exception of five specified cantons;

Peru - populated centres of 100 or more dwellings.

(See Demographic Yearbook, 1977 (United Nations publication, Sales No. E/F.78.XIII.1), p. 183, table 6.) The effect of these differences in definition is probably to understate slightly the amount of increase in contraceptive use that has occurred within rural and urban areas between the earlier surveys and the WFS.

2/ Based on the age-groups shown in table 25.

observed in developed countries. As discussed earlier in this report, most of the countries for which trend data were available showed rapid increases, in the over-all prevalence of contraceptive use. Only Jordan and rural Peru, among the countries shown in table 25, did not experience rapid over-all growth in contraceptive prevalence. ^{3/} Jordan registered small increases, apparently confined to women with small families, occurring between 1972 and 1976; in rural Peru, use among currently married women aged 20-39 increased from 7 per cent to 13 per cent over a period of eight years.

The main conclusion that can be drawn from examining changes within subgroups from tables 25-27 is that, as contraceptive practice spreads, all education groups, both rural and urban women, and women with small as well as with large families typically show substantial increases in the level of use. (In the Philippines and in rural Peru, however, women with no education showed little increase over time.) Although rapid urbanization is taking place in many of these countries and although the average level of education is increasing markedly, very little of the over-all increase in contraceptive use in these countries can be attributed to the fact that highly educated and urban couples are increasing their share of the population. This can be seen by comparing the amount of increase in use for the population as a whole with the amount of increase within education categories and within rural and urban areas (tables 25 and 27).

Examples of increasing, as well as of decreasing, differentials according to family size can be found in table 25. Contraceptive use increased little among women with no children in both the Philippines and the Republic of Korea, so that the difference between women with zero or 0-1 children and others widened; the differential also increased in Malaysia. However, the change in metropolitan Colombia and Costa Rica was such that the differential decreased as contraceptive use spread even more widely among women with 0-1 children than among others. Increase in use was somewhat more pronounced in rural Colombia and Costa Rica among women with large families (four or more children) than among others. It is noteworthy that apparent anomalies in an earlier survey are sometimes reproduced in a later one; Costa Rican and Colombian rural women with two children were slightly more likely to be using contraception than were women with three children in 1969 and 1976.

The data in table 26 add some limited support to the idea that socio-economic differences in contraceptive practice can be expected to widen in the early phases of the demographic transition and narrow in the later stages.

^{3/} These are the only countries among those shown in table 25 which did not have an official family planning programme during this period.

Among the countries categorized in table 1 (see Introduction) as having relatively high fertility (i.e., a total fertility rate exceeding 6), data are only available for rural Peru in table 26 which shows a dramatic widening of the education differential between 1969 and 1977. Among the countries ranked in the middle group, trend data are available for Colombia, Malaysia, Panama, the Philippines and Thailand. There was an increase in the size of the education differential in the Philippines. In rural and urban Thailand and in metropolitan Panama, the education differential was fairly small at both the earlier and later surveys and use increased over time within each education group. In Malaysia, the differential in use according to wife's education was maintained over time as use increased substantially within each education class. On the other hand, the education differential in contraceptive use narrowed in metropolitan Colombia (where fertility is undoubtedly lower than national levels) while education differentials remained quite pronounced in rural areas where contraceptive use was less widespread, though use increased in all education classes. In both Costa Rica and the Republic of Korea (classed as relatively low-fertility countries in table 1 with total fertility rates less than 4), differences in contraceptive use by education narrowed sharply and most dramatically in rural Costa Rica with education differentials essentially disappearing by the early 1970s. ^{4/} Both of these countries are noted for their strong family planning programmes.

The behaviour of differentials by type of place of residence is more difficult to judge, because many of the rural and urban surveys were conducted not as elements of a national survey but at different times (see table 27). In the Republic of Korea, the rural/urban difference in the level of use was small in both 1965 and 1974. In Malaysia and Thailand a larger difference in the late 1960s contracted over time, and in the Philippines an initially small difference widened considerably between 1968 and 1978.

The magnitude of socio-economic differences in contraceptive use at a particular time does not provide a reliable basis for predicting the amount of change in contraceptive prevalence that will occur in the near future or has occurred in the recent past. For example, although the education differential in the Republic of Korea was very small by 1974, the level of use continued to increase rapidly between 1974 and 1978 (see table 5). It

^{4/} Results presented earlier, in chapter III, show that when the 1974 figures for the Republic of Korea are adjusted for the family size and age composition of each education group, there is a small positive relationship between education and contraceptive use.

may be the case that very large socio-economic differentials in use are found primarily in societies in the midst of rapid demographic change. Additional data would be required to establish this conclusively, but it is also evidently the case that large differentials do not necessarily accompany rapid change, a finding that can be explained, at least partially, by the presence of strong family planning programmes.

Table 25. Trends in the percentage of women who, when interviewed, were married and using contraception, including sterilization, by number of living children, selected WFS countries

Country and area	Survey year	Age of women	Total	Number of children living					
				0	1	2	3	4	5+
<u>Colombia</u>									
Bogota	1963/64 <u>a/</u>	20-39	32	15	33	40	37	31	
	1976 <u>b/</u> , <u>c/</u>	20-39	60	51	63	68	61	54	
Rural	1969 <u>a/</u> , <u>d/</u>	20-39	14	8	19	16	16	14	
	1976 <u>b/</u>	20-39	31	17	31	26	36	39	
Whole country	1976 <u>b/</u>	15-49	42	13	45	50	42		
	1978 <u>e/</u>	15-49	46	11	50	55	45		
<u>Costa Rica</u>									
Metropolitan	1963/64 <u>a/</u> , <u>f/</u>	20-39	55	25	62	66	65	56	
	1976 <u>b/</u>	20-39	72	58	77	79	84	77	
Rural	1969 <u>a/</u>	20-39	26	11	34	28	25	28	
	1976 <u>b/</u>	20-39	66	50	72	66	66	73	
Whole country <u>g/</u>	1976 <u>b/</u>	20-49	78	39	75	82	83	80	78
	1978 <u>h/</u>	15-49	76	39	73	80	83	85	75
<u>Jordan <u>i/</u></u>									
East Bank	1972 <u>j/</u>	< 50	21	1	9	17	25	23	27
	1976 <u>b/</u>	< 50	24	4	16	25	25	24	29
<u>Malaysia (Peninsular)</u>									
	1966/67 <u>k/</u>	15-44	9	4			8 <u>l/</u>	11 <u>m/</u>	
	1974 <u>b/</u>	15-44	35	27			41 <u>l/</u>	40 <u>m/</u>	
<u>Panama</u>									
Metropolitan	1963/64 <u>a/</u> , <u>n/</u>	20-39	47	27	41	53	57	52	
	1976 <u>b/</u> , <u>o/</u>	20-39	61	41	66	67	72	73	
<u>Peru</u>									
Rural	1969 <u>a/</u> , <u>d/</u>	20-39	7	5	7	8	6	9	
	1977 <u>b/</u>	20-39	13	8	11	20	15	12	
<u>Philippines</u>									
	1968 <u>p/</u>	15-44	15	1	13	15	20	18	16
	1973 <u>p/</u>	15-44	18	2	15	19	22	21	19
	1978 <u>b/</u>	15-44	48	5	36	50	55	55	51
<u>Republic of Korea</u>									
	1965 <u>a/</u>	20-39	18	4	13	16	25	31	
	1971 <u>a/</u>	20-39	22	7	23	29	29	26	
	1974 <u>b/</u>	20-39	38	11	40	50	52	47	

(Foot-notes on following page)

(Footnotes to table 25)

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- a/ Factors Affecting the Use and Non-use of Contraception: Findings from a Comparative Analysis of Selected KAP Surveys (United Nations publication, Sales No. E.79.XIII.6) pp. 56-57, table 9.
- b/ Data are from a survey taken as a part of the World Fertility Survey tabulated from the standard recode data tapes supplied by the WFS.
- c/ Bogotá region.
- d/ Rural areas and towns of under 20,000 inhabitants.
- e/ Encuesta Nacional de Prevalencia del Uso de Anticoncepción, Colombia, 1978 (Bogotá, Corporación Centro Regional de Población, 1979), p. 60, table 6.6.
- f/ San José only.
- g/ Data relate to women described as being exposed to the risk of pregnancy: currently married non-pregnant women, excluding those who believe themselves infecund for reasons other than contraceptive sterilization.
- h/ Informe de la Encuesta Nacional de Uso de Anticonceptivos, Costa Rica, 1978 (San José, Dirección General de Estadística y Censos, 1978), p. 52, table 7.4.
- i/ Data relate to ever-married women.
- j/ Jordan, Department of Statistics, National Fertility Survey in Jordan 1972 (Amman, 1976), p. 128, table 5.8.
- k/ Malaysia, National Family Planning Board, Report on the West Malaysian Family Survey 1966-1967 (Kuala Lumpur, n.d.), p. 289, table E22.
- l/ Three to five children.
- m/ Six or more children.
- n/ Panama City.
- o/ Urban part of metropolitan areas.
- p/ Tabulated from data tapes supplied by the Government of the Philippines.

Table 26. Trends in the percentage of women who, when interviewed, were married and using contraception, including sterilization, by wife's level of education, selected WFS countries

Country and area	Survey year	Age of women	Total	Level of education				
				Number of years completed	Primary incomplete	Primary complete	Lower secondary	Upper secondary and higher
<u>Colombia</u>								
Bogota	1963/64 <u>a/</u>	20-39	32	20		35	46	54
	1976 <u>b/</u> , <u>c/</u>	20-39	60	58		51	63	(71)
Rural	1969 <u>a/</u> , <u>d/</u>	20-39	14	4	13	28	44	
	1976 <u>b/</u>	20-39	31	19	31	52	(64)	
Whole country	1976 <u>b/</u>	15-49	42	21 <u>e/</u>	39 <u>f/</u>	53	62	
	1978 <u>g/</u>	15-49	46	26 <u>e/</u>	45 <u>f/</u>	54	57	
<u>Costa Rica</u>								
Metropolitan	1963/64 <u>a/</u> , <u>h/</u>	20-39	55	44		60	67	
	1976 <u>b/</u>	20-39	72	68		75	72	
Rural	1969 <u>a/</u> , <u>d/</u>	20-39	26	12	25	38	49	
	1976 <u>b/</u>	20-39	66	60	65	67	71	
Whole country <u>i/</u> , <u>j/</u>	1976 <u>b/</u>	20-49	78	69	77	82		82
	1978 <u>k/</u>	15-49	76	69	74	76		86
<u>Malaysia (Peninsular) <u>l/</u></u>								
	1966/67 <u>m/</u>	15-44	9	4	10	23		
	1974 <u>b/</u>	15-44	35	26	35	43		
<u>Panama</u>								
Metropolitan	1963/64 <u>a/</u> , <u>n/</u>	20-39	47	42		47	44	53
	1976 <u>b/</u> , <u>o/</u>	20-39	61	54		61	61	62

(Table continued on following page)

Table 26. (continued)

Country and area	Survey year	Age of women	Total	Level of education				
				Number of years completed	Primary incomplete	Primary complete	Lower secondary	Upper secondary and higher
<u>Peru</u>								
Rural	1969 <u>a/</u> , <u>d/</u>	20-39	7	1	6	19	24	
	1977 <u>b/</u>	20-39	13	6	17	32	(45)	
<u>Philippines p/</u>								
	1968 <u>q/</u>	15-44	15	10	12	15	19	32
	1973 <u>q/</u>	15-44	18	4	10	16	25	36
	1978 <u>b/</u>	15-44	39	11	27	38	48	56
<u>Republic of Korea</u>								
Urban	1965 <u>a/</u>	20-39	22	7	19		35	
	1971 <u>a/</u>	20-39	27	22	27		28	
	1974 <u>b/</u>	20-39	40	43	38		41	
Rural	1965 <u>a/</u>	20-39	16	11	17		26	
	1971 <u>a/</u>	20-39	22	20	22		24	
	1974 <u>b/</u>	20-39	34	37	34		31	
<u>Thailand r/,s/</u>								
Urban	1970	15-44	31	28		31		36
	1975 <u>b/</u>	15-44	49	44		50		53
	1979	15-44	54	42		50		64
Rural	1969	15-44	10	7		13		17
	1975 <u>b/</u>	15-44	37	33		36		45
	1979	15-44	48	48		48		57

(Foot-notes on following page)

(Foot-notes to table 26)

Note:

Figures in parentheses indicate fewer than 50 cases.

a/ Factors Affecting the Use and Non-use of Contraception: Findings from a Comparative Analysis of Selected KAP Surveys (United Nations publication, Sales No. E.79.XIII.6), pp. 61-62, table 12.

b/ Data are from a survey taken as a part of the World Fertility Survey tabulated from the standard recode data tapes supplied by the World Fertility Survey.

c/ Bogotá region.

d/ Rural areas and towns of under 20,000 inhabitants.

e/ No years of school completed and/or illiterate.

f/ Literate, less than primary completed.

g/ Encuesta Nacional de Prevalencia del Uso de Anticoncepción, Colombia, 1978 (Bogotá, Corporación Centro Regional de Población, 1979), p. 60, table 6.6.

h/ San José only.

i/ Data relate to women described as being exposed to the risk of pregnancy: currently married non-pregnant women, excluding those who believed themselves infecund for reasons other than contraceptive sterilization.

j/ Education categories are: less than three years; 3-5 years, 6-10 years, 11 or more years.

k/ Informe de la Encuesta Nacional de Uso de Anticonceptivos, Costa Rica, 1978 (San José, Dirección General de Estadística y Censos, 1978), p. 54, table 7.5.

l/ Education categories are: zero years completed; 1-5 years, 6 or more years.

m/ Malaysia, National Family Planning Board, Report on the West Malaysian Family Survey 1966-1967 (Kuala Lumpur, n.d.), p. 290, table E23.

n/ Panama City.

o/ Urban part of metropolitan areas.

(Foot-notes continued on following page)

(Foot-notes to table 26 (continued))

p/ Education categories are: zero years completed; primary (1-4 years); intermediate (5-7 years); 1-4 years of secondary education; post-secondary.

q/ Tabulated from data tapes supplied by the Government of the Philippines.

r/ J. Knodel and others, "Thailand's continuing reproductive revolution", International Family Planning Perspectives, vol. 6, No. 3 (September 1980), p. 91, table 8. All figures are standardized in the 1970 age distribution of currently married women for the entire Kingdom.

s/ Education categories are: 0-3 years; 4 years; 5 or more years.

Table 27. Trends in the percentage of women who, when interviewed, were married and using contraception, including sterilization, by type of place of residence, selected WFS countries

Country	Survey year	Age of women	Total country	Type of place of residence		
				Metropolitan	Total	Rural
<u>Colombia</u>	1963/64 <u>a/</u>	20-39	...	32 <u>b/</u>	...	...
	1969 <u>a/</u>	20-39	...	...	...	14 <u>c/</u>
	1976 <u>d/</u>	20-39	47	60 <u>e/</u>	56	31
	1976 <u>d/</u>	15-49	42	58 <u>e/</u>	52	27
	1978 <u>f/</u>	15-59	46	62 <u>e/</u>	55	30
<u>Costa Rica</u>	1963/64 <u>a/</u>	20-39	...	55 <u>g/</u>	...	...
	1969 <u>a/</u>	20-39	...	...	...	26
	1976 <u>d/</u>	20-39	68	72	70	66
	1976 <u>d/</u> , <u>h/</u>	20-49	78	83	81	74
	1978 <u>h/</u> , <u>i/</u>	15-49	76	78	...	74
<u>Malaysia (Peninsular)</u>	1966/67 <u>j/</u>	15-44	9	31	21 <u>k/</u>	3
	1974 <u>d/</u>	15-44	35	50	44 <u>k/</u>	30
<u>Mexico</u>	1963/64 <u>a/</u>	25-34	...	32 <u>l/</u>	...	...
	1970 <u>a/</u>	25-34	...	...	...	7 <u>c/</u>
	1976/77 <u>d/</u>	25-34	38	...	55 <u>m/</u>	21 <u>c/</u>
<u>Panama</u>	1963/64 <u>a/</u>	20-39	...	47 <u>n/</u>	...	...
	1976 <u>d/</u>	20-39	54	61 <u>o/</u>	61	46
<u>Peru</u>	1969 <u>a/</u>	20-39	...	...	...	7 <u>c/</u>
	1977 <u>d/</u>	20-39	36	...	47	13
<u>Philippines</u>	1968 <u>p/</u>	15-44	15	...	18	14
	1973 <u>p/</u>	15-44	18	...	29	13
	1978 <u>d/</u>	15-44	39	53 <u>q/</u>	50	33
<u>Thailand <u>r/</u></u>	1969/70	15-44	14	...	31	10
	1972/73	15-44	26	...	43	23
	1975	15-44	37	...	49	35
	1979	15-44	48	...	54	47
<u>Republic of Korea</u>	1965 <u>a/</u>	20-39	18	...	22	16
	1971 <u>a/</u>	20-39	24	...	27	19
	1974 <u>d/</u>	20-39	38	...	40	34

(Foot-notes on following page)

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- a/ Factors Affecting the Use and Non-use of Contraception: Findings from a Comparative Analysis of Selected KAP Surveys (United Nations publication, Sales No. E.79.XIII.6), pp. 56-57, table 9.
- b/ Bogotá metropolitan area.
- c/ Rural areas and towns of under 20,000 inhabitants.
- d/ Data are from a survey taken as a part of the World Fertility Survey, tabulated from the standard recode data tapes supplied by the WFS.
- e/ Bogotá region.
- f/ Encuesta Nacional de Prevalencia del Uso de Anticoncepción, Colombia, 1978 (Bogotá, Corporación Centro Regional de Población, 1979), p. 62, table 6.7.
- g/ San José only.
- h/ Data relate to women described as being exposed to the risk of pregnancy: currently married non-pregnant women, excluding those who believed themselves infecund for reasons other than contraceptive sterilization.
- i/ Informe de la Encuesta Nacional de Uso de Anticonceptivos, Costa Rica, 1978 (San José, Dirección General de Estadística y Censos, 1978), p. 54, table 7.5.
- j/ Malaysia, National Family Planning Board, Report on the West Malaysian Family Survey 1966-1967 (Kuala Lumpur, n.d.), p. 84, table A21.
- k/ Urban, excluding metropolitan areas.
- l/ Mexico City.
- m/ Localities of 20,000 or more inhabitants.
- n/ Panama City.
- o/ Urban part of metropolitan areas.
- p/ Tabulated from data tapes supplied by the Government of the Philippines.
- q/ Metropolitan Manila.
- r/ J. Knodel and others, "Thailand's continuing reproductive revolution", International Family Planning Perspectives, vol. 6, No. 3 (September 1980), p. 89, table 6. All figures are standardized in the 1970 age distribution of currently married women for the entire Kingdom.

Chapter V

CONCLUSION

Although the 20 countries included in this study cannot be considered fully representative of the developing world (particularly given the absence of African countries other than Kenya), a wide range of contraceptive use patterns have been observed. Not only is there a wide range, among the countries studied, in over-all levels of current use (from 2 per cent of ever-married women in Nepal to 64 per cent in Costa Rica) and in the share of modern methods in over-all use (from 36 per cent in Peru to 94 per cent in Jamaica and 98 per cent in Nepal), but the size of differentials and their trends have varied significantly as well. Socio-economic conditions and cultural factors as well as the availability of family planning information and supplies are all factors influencing the over-all level of use within each country. Within the context of each country individual circumstances affecting exposure status as well as individual preferences and life cycle phases contribute to an explanation of individual differences in contraceptive use.

The over-all levels of contraceptive use in each country appear to be roughly related to the level of socio-economic development and the phase of the demographic transition, whereas recent trends can in most cases be linked to the presence of strong or rapidly growing family planning programmes (one exception to this is Costa Rica where levels of use appear to have stabilized at a high level). In some countries with strong programmes, differentials in use have also been observed to narrow. Thus, these findings seem to support general views already held in the field and discussed in section C of the Introduction; this is that the co-existence of development and family planning programmes provide a more favourable climate for the adoption of contraceptive use and fertility decline than either one does separately.

One particularly important finding emerging from the present study is that countries with high levels of current contraceptive use among women who want no more children also have high levels of use among women who want more children. The same is true in reverse so that the factors affecting the motivation to delay and space births seem to be related to the factors affecting the motivation for birth limitation. Thus, the concept of "unmet need" for family planning services becomes a difficult one given the effect of development process itself on the strength and patterns of individual motivation. Some women who are non-users and say they want no more children may not in fact be in need because they lack the motivation to use contraception (for cultural or religious reasons), whereas some others

who are not users and want more children may be in need because of a strong desire to delay or space births. Among still other non-users who want no more children, the need may be attributable to the social requirement that they sublimate their wishes in order to accommodate the wishes of others.

Although education has been seen to be the most important factor in explaining within-country differences in contraceptive use, in general countries where rapid increases in contraceptive use have taken place show increases in use within all education groups, thus indicating that rising levels of education can only be part of an explanation of rising levels of use. Education, urbanization, rising opportunities for women's work outside the home, are all factors conducive to increases in the level of contraceptive use, but these factors are only part of the story underlying the spread of contraception in selected developing countries. In these countries, the institutional setting, in particular the strength of the national family planning programme, has been an important factor as well.

When data from all 42 countries conducting WFS surveys become available for analysis, these conclusions will be re-evaluated. In addition, some of the information from the questionnaire modules will be analysed to get a more in-depth view of some of the factors underlying present patterns, including abortion and prolonged breast-feeding, which may be viewed in some settings as alternatives to contraception for birth spacing and/or limitation purposes. Multilevel analysis will also be useful in order to examine regional and community-level characteristics that may explain variations within countries in contraceptive use and may identify target populations.