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The Availability of Contraceptive Services

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1 Introduction

The relationship between the availability of contraception and fertility control is of central concern to policy makers and administrators responsible for population and health programmes. The main issue is understanding and evaluation of the ways in which the provision of family planning services in itself influences behaviour. Family planning programme records have produced a large amount of relevant information, but it is necessarily confined to service clientele and thus presents only one part of the picture. The sales records of pharmaceutical suppliers and commercial distributors have also contributed useful data on certain questions. Recently, large-scale surveys such as the World Fertility Survey and the Contraceptive Prevalence Surveys have begun to provide more insight into the impact of availability among married couples at large, the extent of awareness of services as opposed to their use, and how different aspects of the topic are related to one another.

The major parts of the World Fertility Survey data on contraceptive availability are brought together in this study. The WFS offered the possibility of collecting information on many facets of availability for national samples of women of childbearing age. Although the subject was not covered in the original core questionnaire, it was a principal focus of the family planning module, which was offered for optional adoption by individual countries WFS 1975a; WFS 1975b; WFS 1977a). One subset of questions was ultimately designated as a supplement to the individual core questionnaire (WFS 1977b). It was also suggested that family planning facilities be covered, where appropriate, in the community-level surveys which were undertaken in many countries as a part of the WFS (Freedman 1974). A considerable number of countries availed themselves, to a greater or lesser extent, of these opportunities, and in some country questionnaires further questions were added exploring specific areas of interest.

The material on availability falls under several headings which can be visualized as a series of steps leading toward actual use of contraception by the individual; the present report is structured to follow this sequence. Simple knowledge of a source of advice and supplies is the initial step. Then comes consideration of the accessibility of the sources which are known. In previous studies of availability, knowledge of a source and accessibility have frequently been merged under the label 'perceived availability' (see, for example, Chidambaram and Mastropoalo 1982; Pebley and Brackett 1982; Rodríguez 1978; Tsui, Hogan, Welti-Chanes and Teachman 1981), but they are treated here as separate topics in recognition of the fact that the relationship between the two items of information is essentially indeterminate. The next step is use of the services, including visits to a source, acquisition of supplies and, possibly, visits by a family planning worker. Ultimately, for certain methods, availability becomes a question of having supplies in the house when they are needed.

Knowledge of a source and accessibility could be approached on either a general or a method-specific basis. The preliminary version of the family planning module called for a general question on whether the respondent knew any source of family planning advice or supplies, to be followed by several questions on the accessibility of the nearest source known. In the final version of the family planning module, the question on knowledge of a source was asked separately for specific contraceptive methods of those women who had heard of the method, and there was a follow-up question, to be asked of all women who had not heard of any of these methods, regarding knowledge of a general family planning source; accessibility was ascertained with reference to the sources of individual methods. The supplement to the individual core questionnaire contains only the method-specific questions on sources and accessibility. Many countries used the general approach, but several of the more recent surveys have yielded method-specific information or a combination of the two. Because of the volume and complexity of the method-specific data, two sections of the report are devoted to knowledge of contraceptive sources, the first covering the information on general sources and the second that on sources for individual methods. The data on accessibility, however, are combined in section 4.

A detailed description of the data on each topic is given at the beginning of the respective section of the report. In addition to the questions in the WFS recommendations, the descriptions cover any relevant items added in the national questionnaires, and whenever there is comparable information from at least two surveys, these are also included in the discussion of the results. Table 1 presents an outline of the principal items of information by country and by topic.

Certain kinds of data have been omitted. Reasons for not using contraception, stopping use, or changing methods are not covered. The last two of these three items appeared as open-ended questions in the family planning module, and although the responses to all three might shed some light on service accessibility and supply problems, they are at best peripheral to such issues and are difficult to evaluate across countries. A few countries inquired rather extensively concerning the persons or media sources through which respondents had learned about family planning services, but this material was judged beyond the scope of the present study. Finally, the community-level information on availability and accessibility of family planning services is not considered. These data are important, but they were collected by relatively few countries, there was often little or no

Table 1 Principal items of individual-level information concerning contraceptive availability: WFS surveys for which

	Knowledge of a source			Accessibility of source[a]					Visits to a source		
	Knowledge	Types known	Type would use	Travel time	Distance	Means of transport	Cost of transport	Cost of service	Visit ever	Visit in previous year	Types visited in previous year
Colombia	X	X		X	X				X	X	X
Costa Rica	X	X		X	X				X	X	X
Dominican Rep.											
Fiji											
Ghana	XM	M	M	M		M		M	X	X	
Haiti											
Indonesia	X	X		(X)	(X)	(X)	(X)	(X)	X	X	X
Jordan											
Kenya	X	X		X		X			X	X	
Korea	X			X		X			X	X	
Lesotho	X	X		(X)		(X)			X		
Malaysia	X	X		(X)		(X)	(X)		X	X	X
Mexico	X	X		X					X	X	X
Nepal	X	X		X	X				X	X	X
Pakistan	(X)	(X)									
Panama	X								X		
Paraguay	XM		M	M		M		M	X	X	
Peru											
Philippines	XM	X	M	M				M			
Sri Lanka											
Sudan	M		M	M				M			
Trinidad and Tobago	X	X							X	X	X
Venezuela	XM	X	(M)	XM	X	M		M	X	X	X

[a]For the method-specific information, reference was to the source the respondent would use, except in Venezuela; otherwise, reference was to the nearest source.
NOTE: X = data were collected without reference to specific methods; M = method-specific data were collected; ( ) = the data collected are not comparable to those of other countries in one or more significant respects, see text for details.

information on availability at the individual level for these countries, and in most cases the community-level data had not yet been linked with the WFS standard recode files at the time when this study was undertaken.[1]

Twenty-three of the 31 WFS surveys for which the standard recode files were completed by May 1982 contained at least one relevant question, and results are presented from all but two of these (Colombia, Costa Rica, Dominican Republic, Fiji, Ghana, Haiti, Indonesia, Kenya, Republic of Korea, Lesotho, Malaysia, Mexico, Nepal, Panama, Pakistan, Paraguay, Peru, Philippines, Sudan, Trinidad and Tobago, Venezuela). Jordan and Sri Lanka collected only one piece of relevant information each, and the data had not been transferred to the standard recode files, so these countries were dropped.

A few basic statistics for the 21 surveys covered in the study are shown in table 2. Most of the tabulations are confined to currently married women below age 45. The marital status and age restrictions serve on the one hand to maximize comparability across the various surveys and on the other to focus attention on the group where the potential need for family planning services is greatest. Marital status is discussed briefly, however, in connection with knowledge of sources of contraceptive assistance. The currently married category is defined to include all women living with a partner, regardless of civil status. Women under age 20 were not sampled in Costa Rica or Panama, but the resulting bias in the overall married population is likely to be minimal. In Mexico teenagers were interviewed only if they had had a live birth or had been in a union. The numbers of currently married women below age 45 vary considerably, from 1647 in the Dominican Republic to 7768 in the Philippines, with associated implications for the relative stability of the statistics for different countries.

Within the currently married population of reproductive age there is further variation in the degree of exposure to the risk of childbearing and thus in the immediate relevance of family planning services. Respondents who thought that they or their husbands were physically incapable of having a child were identified as infecund (unless one partner or the other had had a contraceptive sterilization operation, in which case they were treated as contraceptive users). Since such subjective tests for in-

[1]For an example of a study using the WFS community-level data on contraceptive availability see Tsui, Hogan, Welti-Chanes and Teachman 1981.

standard recode files were completed by May 1982

							Acquisition of supplies			
Last type visited	Waiting time last visit	Satisfaction with service	Intention to revisit source	Reasons for not revisiting	Thought of visiting	Reasons for not visiting	Type of source	Supply problems	Visits by a family planning worker	Household availability of supplies
X		(X)	X	X	X	X				M
X		(X)	X	X	X	X	M	M		M
							M	M		
							M			
X	X	X	X	X						
							M			
X	X		X	X	X	X				M
										M
X	X	X	X	X	X	X				
							M	M	X	
X	X									
							M	M		
X		(X)	X	X	X	X				
X		(X)	X	X	(X)	(X)	M	M		M
							M	M	X	
							M			
X		(X)	X	X	X	X	M	M		M
							M	M		
					(X)	(X)				M
								M		
X			X	X	X	X				
X		X	X	X	X	X	M	M		M

fecundity are known to be unreliable, it was decided to retain women designated as infecund in the overall population base. They were excluded, however, from the tabulations on the use of family planning services and household possession of supplies. The tables on current method use are further restricted to respondents who could be considered as exposed to the risk of pregnancy at the time of interview, that is those who were neither infecund nor currently pregnant.

Because of possible differences between urban and rural areas in the significance of availability as an issue, the results in this report are routinely tabulated by type of residence. The sample distributions shown in table 2 indicate considerable contrast among the countries in the extent of urbanization, but because there is no uniform criterion for urban residence, the figures may be misleading. For instance, in Venezuela all places with a population over 2500 were designated as urban, whereas in Paraguay the urban sector consists specifically of department capitals and the national capital. Due to the lack of a common basis for comparison, more attention is given in the discussion to the direction of the relationships observed than to quantitative evaluation of the differences. In several countries there are a few women for whom type of residence is not known, but only in Nepal is the volume of missing data on this variable noteworthy (three per cent of the Nepalese sample, unweighted).

The primary objectives of this report are to describe the phenomena related to each step of availability and in so doing to evaluate the consistency and quality of the data that have been collected. Analysis is thus a secondary consideration, but certain topics have nevertheless been singled out for examination in greater depth. Where the effects of availability are discussed in terms of contraceptive use, a general distinction has been made between efficient and inefficient methods. The methods designated as efficient are the pill, injection, IUD, other female scientific methods (diaphragm, jelly, foam, etc) and both male and female sterilization. Inefficient methods consist principally of douche, rhythm, withdrawal and traditional methods. This division essentially corresponds to that between methods which require some form of contact with the family planning service system and those which do not, although any given programme may have included instruction in one or more of the less efficient methods as well.

Two pervasive problems which arise in any discussion of the WFS data on the availability of contraceptive services should be borne in mind. First, the service situation in individual countries varies widely not only

Table 2 Per cent distribution by type of residence: currently married women below age 45; number of respondents: currently married women below age 45 and all women below age 45[a]

	Currently married women				All women
	Urban	Rural	Total	Number of respondents	Number of respondents
Colombia	63	37	100	2552	4970
Costa Rica	50	50	100	2377	3509
Dominican Rep.	48	52	100	1647	2882
Fiji	35	65	100	4253	4488
Ghana	67	33	100	4574	5686
Haiti	30	70	100	1688	3086
Indonesia	84	16	100	7257	8207
Kenya	88	12	100	5121	7428
Korea	61	39	100	4532	4755
Lesotho	93	7	100	2946	3310
Malaysia	31	69	100	5098	5424
Mexico	43	57	100	5113	6628
Nepal	98	2	100	5118	5424
Pakistan	27	73	100	4234	4448
Panama	56	44	100	2450	3337
Paraguay	57	43	100	2309	4240
Peru	65	35	100	4492	4952
Philippines	68	32	100	7768	8077
Sudan (North)	27	73	100	2629	3115
Trinidad and Tobago	40	60	100	2802	4613
Venezuela	18	82	100	2280	4361

[a]Sample weights were used for all statistics computed for Indonesia, Kenya, Lesotho, Nepal, Pakistan, Peru, Philippines, Sudan (North), and Trinidad and Tobago in this and subsequent tables; numbers of respondents are unweighted.

with respect to the methods offered and the types of sources where they may be acquired but also with respect to characteristics such as the relative importance of government, private and commercial activities and the development of the system over time. The second problem is the heterogeneity of the material. One of the outstanding contributions of the WFS has been the provision of data on a whole range of fertility-related topics that are comparable across countries, but this is probably less true of the availability of contraception than of any other topic.

2 Knowledge of a Source of Advice or Supplies

2.1 THE DATA

Information on whether the respondent knew where she could go for family planning assistance in general was obtained by 15 countries (Colombia, Costa Rica, Ghana, Indonesia, Kenya, Korea, Lesotho, Malaysia, Mexico, Nepal, Panama, Paraguay, Philippines, Trinidad and Tobago, Venezuela). Paraguay used the format recommended in the final version of the family planning module: following the questions on knowledge and ever-use of individual methods, there was a separate series in which women who had ever heard of each of the principal service methods were asked where the method might be obtained, and then finally all other women were asked a general question on whether they knew of a source of advice or supplies. The Ghanaian questionnaire was similar, but after the questions on sources of supplies for specific methods it simply provided for a summary check by the interviewer as to whether any such places had been reported, and there was no follow-up question for women who did not know any method; thus it resembles most closely the format of the supplement to the individual core questionnaire. Elsewhere, there was only a question on knowledge of sources of advice or supplies for any or all methods combined, as in the early version of the family planning module. This general question varied in its placement in the questionnaire, in the base population to which it applied, and in its wording. The responses were accepted at face value, and no effort was made to verify the knowledge claimed.

The general question followed the series on knowledge and ever-use of individual methods in Indonesia, Kenya, Korea, Lesotho, Malaysia, Nepal, and the Philippines (as well as Ghana and Paraguay). However, in Kenya and Nepal it was restricted to women who reported having heard of at least one method of family planning, and in Lesotho women who had themselves been sterilized or whose husbands had been sterilized, as well as those who did not know any method, were excluded. Several of the Latin American countries placed the question at the beginning of the section on knowledge and ever-use of contraception, preceded only by a screening question as to whether the respondent had ever heard of family planning or ways to avoid pregnancy; the latter was actually the first mention of contraception in the entire questionnaire (Colombia, Costa Rica, Mexico, Panama, Trinidad and Tobago, Venezuela). This was the format recommended in the original version of the family planning module (WFS 1975b). In Mexico and Panama the screening question referred specifically to ways or methods of family planning rather than to the general concept of family planning. Women who replied negatively to the screening question were not then asked if they knew where they could go for assistance, although all respondents were subsequently queried about their knowledge and ever-use of individual methods.

Most of the questions on knowledge of contraceptive sources in general mentioned both advice and supplies, and some also specified information. In Kenya the questionnaire referred to supplies only, and as noted above, this was also the case for Ghana. The Philippines included separate questions for advice and supplies but the tabulations presented in this report are those for the question on supplies. Panama differs from the other countries in that its general question was limited to information and advice and did not include supplies.

Of the 15 countries that inquired about knowledge of a source, 11 added a question on the types of source known (Colombia, Costa Rica, Indonesia, Kenya, Lesotho, Malaysia, Mexico, Nepal, Philippines, Trinidad and Tobago, Venezuela). Ghana asked for this information, but on a method-specific basis only. In the Philippines there was a further question concerning which of the known types of source was nearest to the respondent's home.

Haiti and Pakistan also asked questions related to knowledge of a source of contraceptive assistance but in a form that is not comparable to other countries. In the Haitian survey women who had ever heard of the pill, IUD, or other female scientific methods were asked whether they would like to use that method if they could find it. In Pakistan, questions as to whether a source was known and, if so, the types of source were asked only of women who had never used contraception.

2.2 LEVELS OF KNOWLEDGE OF A SOURCE

The results shown in table 3 provide an opportunity for preliminary evaluation of the information on knowledge of a source of family planning assistance as well as an overview of the levels observed. In these tabulations women who gave no answer to the question are included in the base along with those who said they did not know a source. Among currently married women the proportion reporting knowledge of a source varies from 6 per cent in Nepal to 94 per cent in Trinidad and Tobago.

These proportions are probably understated in countries where the question was placed at the beginning of the section on knowledge and ever-use, before the series of questions on knowledge of individual methods (Colombia, Costa Rica, Mexico, Panama, Trinidad and Tobago, Venezuela). Direct evidence of substantial bias of this sort is available in the case of Venezuela, where additional questions on knowledge of sources for specific

Table 3 Per cent knowing a source of contraceptive advice or supplies by marital status, exposure status and current use of contraception: women below age 45

	Ever married															Never married
	Currently married													Post married	Total	
	Exposed										Pregnant	Infecund	Total			
	Pill	Injection	IUD	Other fem. sci.	Condom	Fem. ster.	Male ster.	Other methods	Not using	Total						
Colombia	86	**	97	89	81	90	**	76	49	69	60	66	67	60	66	44
Costa Rica	96	90	96	95	96	83	91	93	82	91	92	75	90	85	90	–[a]
Ghana	98	**	**	96	79	**	–	50	40	44	46	43	44	51	45	39
Indonesia	94	100	100	**	93	75	**	74	40	59	47	33	55	–[b]	–	–
Kenya	98	100	100	**	**	86	**	64	39	43	46	35	43	38	43	–[a]
Korea	100	**	98	**	100	87	87	94	83	89	84	76	88	69	87	–
Lesotho	96	**	**	**	**	–	–	64	26	28	33	15	28	28	28	–
Malaysia	99	**	98	**	90	84	**	85	73	82	82	59	81	58	79	–
Mexico	86	89	95	92	85	77	**	66	33	54	44	37	51	40	50	41
Nepal	80	–	**	–	**	**	34	**	4	6	6	12	6	2	6	–
Panama	91	94	97	89	91	76	**	69	60	75	76	75	75	69	74	–[a]
Paraguay	100	100	100	100	100	100	**	97	87	93	89	88	92	87	91	74
Philippines	99	**	100	**	98	97	94	90	68	80	77	57	79	68	78	–
Trinidad and Tobago	100	100	100	100	100	92	**	92	87	94	93	85	94	83	93	–[a]
Venezuela	82	**	94	92	70	75	**	69	56	70	64	53	68	58	67	42

[a]The sample included women of all marital statuses but the questions on knowledge of source were asked only of ever-married women.
[b]The sample included all ever-married women but the questions on knowledge of source were asked only of currently married women living with their husbands.
NOTE: **indicates less than 20 cases in the base; – indicates information not available.

methods were incorporated into the subsequent inquiry on knowledge and ever-use of each method. Only 68 per cent of currently married women responded affirmatively to the initial general question, as indicated in table 3, but as many as 89 per cent later said that they did know where to get the pill, and the lowest proportion reporting knowledge of a place to get one of the specific methods was 70 per cent for the condom (see table 9). In addition, Rodríguez notes that all of the small group of Costa Rican women who said initially that they knew no outlet but subsequently reported that they were taking the pill were then able to name the place where they had obtained it (Rodríquez 1978: 109). It is quite plausible that some respondents did not fully understand what was meant by such terms as 'family planning' or even 'methods of preventing pregnancy' (both were used in the general Venezuelan question) until specific methods were brought up. The strength of this effect is likely to vary among the countries in which this approach was used; it must in any case have been much less in Costa Rica and Trinidad and Tobago than in Venezuela, since over 90 per cent of currently married women in these two countries responded affirmatively to the general question.

The indicated overall level of awareness could also differ in places where the question referred specifically to supplies (Ghana, Kenya, Philippines), compared to those where only advice or information were mentioned (Panama). The restricted wording of the screening question in Mexico and Nepal might likewise have had some bearing on the results. This would depend on the service situation in each country and the extent to which advice or information was distinguishable from supplies themselves in the public perception. Verbal communication concerning family planning may often be received informally from friends or family, although such sources are probably unlikely to be reported. In the Philippines, where both questions were asked, 77 per cent of currently married women said they knew where they could go for advice compared to the 79 per cent shown in table 3 for supplies, a marginal difference.

Within the currently married population, awareness of family planning sources can be expected to vary systematically by status of exposure to the risk of pregnancy, and among contraceptive users there should be differences in knowledge of sources by the method used. In particular, use of a method which requires contact with the service system would seem usually to imply awareness of where such methods were available. This group of methods includes all the more efficient methods of conception control. While the proportions shown in table 3 do tend to be very high for most of these methods, the correspondence is far from perfect.

The proportion knowing a source is less than 95 per cent in at least one country for women who reported that they were using each such method and, for those whose husbands had been sterilized, in all four of the cases where more than 20 couples were using that method. In actuality, the relevance of a woman's awareness of a place of supply at one particular point in time varies from method to method, both because the implied frequency of contact with a source differs and because it may or may not be necessary for the woman to have made this contact herself. There is no special reason why a woman should have known where her husband obtained a vasectomy. Similarly, if it was the husband who purchased condoms, as must often have been the case, the wife might have been genuinely unaware of the source. Female sterilization requires only one visit by the woman to a place where the operation can be performed. For many sterilized repondents this would have been some time in the past, and the facilities could have changed, or the woman might have moved to a different community in the interim. Nevertheless, one suspects that the low proportions often shown for female sterilization are due in part to its not always being associated immediately with a query on family planning advice and supplies.[2] Both the IUD and injections do require revisits by the respondent herself to the supply point, although infrequently in the case of the IUD; the reported levels of awareness of a source are in fact quite high for users of these two methods. Women taking the pill or using other female scientific methods also need to renew their supplies periodically. This would not always have had to be done by the client in person, but it hardly seems plausible that she would not usually have known where they came from. Where low proportions are shown for the pill this is a matter of special concern because the pill was almost invariably the most commonly used method, and the numbers of women involved are thus apt to be substantial.

It may be that even when the general question on knowledge of a source of advice or supplies was placed appropriately, following the query on knowledge and ever-use of specific methods, so that there could be little room for misunderstanding of what was meant by family planning, it was sometimes interpreted narrowly to mean a family planning centre or clinic, thus perhaps excluding such places as pharmacies, neighbourhood shops and even private doctors. This would probably affect condoms more than other methods and thus would help to explain the frequent failure to report knowledge of a source among condom users, but where the pill was available on a non-prescription basis, it too could be disproportionately involved. Moreover, where house-to-house distribution schemes have been developed, it seems possible that this type of source would not have been viewed as a proper answer to a question on places to which a woman 'could go' for family planning assistance. Despite the shortcomings of the information on knowledge of sources, there is also the possibility of exaggeration in the reporting of methods currently used, but the fact that very few women who said they were using the pill or the IUD reported that they did not know a source when this question was asked on a method-specific basis suggests that this must play at most a minor role (see section 3.2).

Looking at these same data from a country perspective, it is apparent that the proportions knowing a source tend to be relatively low for most of or all these methods in such countries as Colombia, Mexico and Venezuela.

[2]This is consistent with Vaessen's finding that women often do not spontaneously report knowledge of female sterilization as a method even though it generally is widely known (1980: 13).

Table 4 Per cent knowing a source of contraceptive advice or supplies by age, marriage duration, number of living

	Age						Marriage duration					
	15–19	20–24	25–29	30–34	35–39	40–44	<5	5–9	10–14	15–19	20–24	25+
Colombia	50	66	69	74	69	64	64	68	72	70	64	57
Costa Rica	–	93	92	91	87	86	93	92	90	88	87	79
Ghana	37	49	50	42	40	41	48	48	43	41	39	37
Indonesia	40	56	63	59	55	48	45	63	63	61	50	45
Kenya	29	44	49	48	40	38	42	46	48	41	40	32
Korea	64	78	89	92	91	83	81	92	93	91	86	79
Lesotho	16	27	36	31	32	20	24	34	31	31	25	22
Malaysia	73	84	87	83	80	67	81	87	85	79	75	64
Mexico	26	52	58	58	52	43	50	56	56	51	46	32
Nepal	5	5	6	7	9	7	5	4	7	6	9	9
Panama	–	75	82	75	72	65	78	81	78	71	67	52
Paraguay	87	92	93	94	91	91	91	94	94	90	93	84
Philippines	63	78	82	82	79	74	78	81	84	77	73	67
Trinidad and Tobago	87	93	97	97	93	88	90	97	97	96	90	86
Venezuela	54	73	75	74	64	53	64	77	71	64	63	58

[a]Includes urban, location unstated.
NOTE: – indicates information not available.

This supports the notion of misunderstanding of the general question on knowledge of source due to its placement in the questionnaire. Since sterilized women were not asked about knowledge of source in Lesotho, these respondents have been eliminated in table 3. Only 21 cases of female sterilization (and no male sterilization) were reported in that country, but the evidence for other countries does confirm that these women would have been very likely to say that they knew a source, so again the level shown is probably slightly low in comparison to the other surveys.

Conforming to expectation, knowledge of a source of family planning assistance is apt to be far lower among women who were using less efficient methods of contraception, which would not necessarily have brought them into contact with the family planning service system. Nevertheless, in most countries the vast majority of currently married women using these methods did say that they knew where they could go for advice and supplies.

Non-use of any method of contraception among married women exposed to the risk of pregnancy is clearly associated with lack of knowledge of a source. Pregnant women report levels of knowledge of a source that are approximately the same as those for all currently married women; on the one hand they are relatively young and presumably susceptible to innovative ideas, but on the other they may not yet see any need to avoid pregnancy, or they may be pregnant precisely because of failure, at one step or another, of their efforts to prevent it. Even if infecund women are likely to be older and to have had opportunity to learn about family planning, they are often more traditional in outlook and may in addition have had little reason to be concerned about excess fertility, so they might be expected to be less aware of sources of family planning assistance than currently married women as a whole. This is the situation except in Colombia, Ghana, and Panama, where the proportions are the same, and in Nepal, where infecund women oddly appear to be more likely to know a source than currently married women in general.

While the currently married population presumably constitutes the principal target for family planning programmes, other women are sexually active to varying degrees in different cultures, and it is worthwhile looking briefly at the consistency of the data for women of other marital statuses. For this reason all women below age 45 for whom the information was collected are included in table 3. Those who had not yet married were covered in five countries. As would be anticipated, in the case of women who were generally very young and highly unlikely to have had all the children they would want, their awareness of family planning sources is uniformly below that of currently married women.[3] The differences are substantial except in Ghana. Even so, in Paraguay three-quarters of the single women knew where contraceptive assistance could be obtained.

Widowed, divorced and separated women were covered in all countries except Indonesia. These women are of course concentrated in the upper part of the age range and may have had considerable fertility experience. The results appropriately show that they are somewhat less apt to know a source than currently married women, but more so than single women. Ghana

[3]The figure for Mexico would probably be slightly higher had unmarried women with no births been included in the sample.

children, type of residence and education: currently married women below age 45

	Number of living children						Type of residence			Education			
	0	1	2	3	4	5+	Urban		Rural	None	1–3 yrs	4–6 yrs	7+ yrs
							Large	Other					
Colombia	54	67	73	70	70	62	——— 80 ———		45	36	58	80	91
Costa Rica	80	94	93	93	91	86	——— 93 ———		87	75	86	92	94
Ghana	43	46	43	46	42	46	58	55	39	28	50	55	73
Indonesia	33	50	59	65	58	61	——— 59 ———		54	48	55	65	86
Kenya	24	38	43	45	49	47	51	52	42	29	49	49	72
Korea	72	82	89	93	92	88	89	84	87	82	87	87	91
Lesotho	14	26	32	31	33	35	39	35[a]	27	15	18	26	40
Malaysia	62	84	86	80	80	82	83	85	79	68	81	87	90
Mexico	35	50	59	57	54	49	72	66	27	25	42	59	87
Nepal	3	5	6	7	8	12	51	36	5	5	22	40	46
Panama	70	80	78	78	77	68	——— 83 ———		64	35	52	74	89
Paraguay	90	93	92	95	93	90	98	95	88	72	88	93	99
Philippines	66	78	79	88	82	77	——— 91 ———		73	31	59	77	93
Trinidad and Tobago	88	94	97	97	96	93	——— 95 ———		91	79	88	90	94
Venezuela	56	63	73	76	73	66	——— 72 ———		52	44	62	72	78

is again the one clearly divergent case, but with more post-married than currently married women reporting knowledge of a source, and the contrast is also minimal in both the other African countries represented.

2.3 DEMOGRAPHIC AND SOCIO-ECONOMIC DIFFERENTIALS

Among currently married women knowledge of a source of family planning assistance tends to follow an inverted U-shaped pattern by age, duration of marriage and number of living children (table 4). Fewer women at the earliest and at the latest stages of the reproductive life cycle knew where to go for contraceptive advice and supplies than at the intermediate stages.[4] This conforms to what has been observed in other studies for variables related to the knowledge and use of contraceptive methods in developed as well as developing countries (Carrasco 1981; United Nations 1976; Vaessen 1980). It probably results from a mixture of cohort and period effects which prevails very generally. The relevance of fertility control normally increases with duration of exposure to the risk of pregnancy, but at the same time younger women are likely to be better educated and more attuned to new ideas. In the developing countries particularly, service design can also have some bearing since target groups may be identified in terms of age or family size. The absence of women under age 20 in the Costa Rican and Panamanian samples means that the proportions at the lowest marriage durations and with the fewest children are somewhat overestimated relative to other countries; this would be reflected also in marginal overstatement of knowledge of a source for the samples as a whole.

The curves are in most cases rather shallow so that the overall level of knowledge of source in any country dominates change across the life cycle. A relatively high degree of awareness in the early stages is indicative of considerable use of contraception for child-spacing purposes (Paraguay, Trinidad and Tobago, as well as Costa Rica). In some countries the curve peaks rather early (Malaysia, Venezuela) while it occurs later in others (Korea, Nepal); in fact, the proportions increase continuously with marriage duration and number of children in Nepal. The pattern is also less clear-cut by number of living children than by age or marriage duration. In Ghana the number of children has no systematic effect, while in the other African countries the proportions do not decline for women with the largest families.

In comparison with the demographic variables, the differentials by education and type of residence are quite pronounced. It is important to keep in mind that the distribution of the samples by education as well as that by type of residence varies very widely from country to country. Women living in areas designated as urban were more likely than those in rural areas to know a source of family planning assistance in all countries except Korea. The residence differential appears particularly striking in Colombia, Mexico and Nepal and relatively unimportant in Costa Rica, Indonesia, Malaysia and Trinidad and

[4] In a sample of currently married women under age 45, not only those who are less than 20 years old but also those married more than 25 years must have married before age 20. If the overall average age at marriage is relatively high, as has been true in Colombia, Philippines and recently in Korea, women marrying early may be a group that is selected for high fertility and probably also low knowledge of sources of family planning assistance.

Tobago. Service design may again play a role in countries such as Indonesia, Korea and the Philippines, where considerable emphasis has been placed on outreach into rural areas.

Number of years of education is positively associated with knowledge of a source of family planning assistance, and this characteristic distinguishes repondents more consistently than any other. In most countries women who had at least seven years of schooling were more than twice as likely as those with no education to know where they could go for family planning advice or supplies. Even in Nepal, where the overall level of awareness is extremely low, nearly one half of the women with four or more years of education knew a source. The differential is inevitably smaller in such places as Costa Rica, Korea and Trinidad and Tobago, where almost everyone did know a source.

Substantial variations in knowledge of a source of family planning assistance are also often to be found by such characteristics as region of residence, religion and ethnic group, although these data do not readily lend themselves to inter-country comparisons. In Mexico, for instance, the proportion reporting that they knew a source is more than twice as high (75 per cent) in the south-east region than in the Gulf region (34 per cent). The contrast between religious groups is particularly pronounced in Ghana where the level is 14 per cent for followers of traditional religions, 28 per cent for Moslems, 55 per cent for Catholics, and 61 per cent for non-Catholic Christians. Such differences may reflect variations in socio-economic status or in group values concerning family and fertility. On the other hand, they may again represent direct or indirect effects of programme design.

The demographic and socio-economic differences depicted here are very much in line with Rodríguez's observations based on five of these countries (1978). As he further pointed out, such characteristics are themselves almost certain to be interrelated. Using analysis of covariance techniques he demonstrated that type of residence has a substantial effect on knowledge of an outlet independent of duration of marriage and number of living children, and that the effect of education is only moderately diminished when controls for marriage duration and type of residence are introduced. He attributed this reduction to the association between education and type of residence.

2.4 TYPES OF SOURCE KNOWN

One dimension of the variation among countries with respect to their overall service situation is the type of facility from which a couple might obtain family planning advice and supplies. Table 5 shows the per cent of women knowing various types of outlet among those who were aware of any source. In all the surveys multiple responses were permitted, and the totals therefore sum to more than 100.

The data on type of source, including those on sources visited and those where contraceptive supplies were obtained, which are presented in later tables, as well as those on sources known, are of limited value for purposes of inter-country comparison. The preselected categories in which the responses were recorded have no common denominator, and each country thus requires its own set of headings. This signals immediately the extent of the differences in the national contraceptive distribution networks, but it also reflects in part the varying concerns of those responsible for carrying out the survey. Individual countries frequently singled out types of source that were more or less unique to their circumstances, such as 'village headman' in Indonesia, 'barangay supply point' in the Philippines, and 'welfare facility' (*beneficia*) in Venezuela. In some cases the classification scheme focused mainly on the physical nature of the facility (eg Kenya, Lesotho), while in others (eg Malaysia) it was based mainly on sponsorship ie government, family planning association, commercial, independent.

Although often of particular interest, it should be recognized that sponsorship may not be a characteristic of the source that is obvious to the client, especially in relation to places that she has merely heard about but never visited. In addition, the sponsorship of certain types of source is sometimes mixed, usually with the government sharing responsibility with other kinds of organization. Even where an equivalent heading is used by more than one country, the services implied may be quite different in each; field workers, for example, only offer advice in some countries but provide actual services in others, and similarly, sterilization may be available through clinics and health centres or restricted entirely to hospitals.

Despite the lack of comparability, a few worthwhile generalizations emerge from table 5. Major medical institutions such as hospitals are recognized as one of the principal sources of family planning assistance everywhere except in the Asian countries represented (Indonesia, Malaysia, Philippines). In most countries private doctors also figure significantly among the sources known. Commercial sources, including mainly pharmacies, are important only in Trinidad and Tobago, or at least women elsewhere did not often think of mentioning that type of place. Where a high proportion of responses falls into the residual 'other' category, as in Indonesia and to a lesser extent Malaysia, the usefulenss of the data is inevitably reduced. In a number of countries rural women appear to depend more than urban women on the public health care system for contraceptive services (Colombia, Costa Rica, Malaysia, Mexico), while in others special facilities have been developed for the benefit of rural residents (village headmen in Indonesia; barangay supply points and field workers in the Philippines). As a whole, differences by type of residence are clear-cut but highly country-specific.

The average number of different types of place mentioned by each respondent ranges from 1.2 in Nepal to just under 2 in Mexico and Trinidad and Tobago. This figure is influenced by the number of categories shown and the way they were composed; it is also based on the assumption that where there is an 'other' category, any given respondent appears in it no more than once. However, the average is consistently lower in rural than in urban areas, suggesting that the perceived range of choice is narrower for rural residents.

Table 5 Types of source known (per cent): currently married women below age 45 who knew a source

Colombia	Hospital	Health centre	FP Assoc. clinic	FP field worker	Pharmacy	Private doctor	Other
All women	40	39	64	2	2	14	1
Urban	35	38	74	2	2	15	1
Rural	54	41	34	5	2	13	2

Costa Rica	Health Min. facility	Social security facility	Private clinic	Pharmacy	Private doctor	Other
All women	80	63	7	1	10	3
Urban	73	76	11	2	17	5
Rural	87	49	2	1	3	1

Indonesia	Hospital	PPKB	Village headman	FP clinic	FP field worker	Pharmacy	Family doctor	Other
All women	15	2	27	38	6	1	7	35
Urban	37	1	7	46	6	5	27	23
Rural	10	2	31	36	6	0	3	37

Kenya	Hospital dispensary	Mobile FP clinic	FP field worker	Pharmacy, shop	Private doctor
All women	92	34	16	10	18
Urban	93	18	16	19	39
Rural	92	37	16	9	15

Lesotho	Hospital	FP clinic (building)	Mobile FP clinic	FP field worker	Pharmacy	Doctor	Other
All women	35	55	13	1	2	32	2
Urban	32	65	16	0	1	29	0
Rural	35	54	12	1	2	32	0

Malaysia	General hospital	Government clinic	Nat. FP Board clinic	FP Assoc. clinic	Private clinic	Doctor	Other	Missing data
All women	21	54	43	2	30	2	13[a]	0
Urban	12	26	45	31	50	3	16[b]	0
Rural	19	68	41	17	20	2	12[c]	0

[*Table continues*]

Table 5 (*cont*)

Mexico	Health Min. hosp. clinic	Social security clinic	Other govt. facility	FP Assoc. clinic	Pharmacy	Private doctor, clinic, hosp.	Missing data
All women	54	58	23	13	8	39	0
Urban	51	66	25	16	8	39	0
Rural	63	33	16	2	6	41	0

Nepal	Hospital	FP clinic	FP field worker	Pharmacy	Other	Missing data
All women	55	52	10	4	2	0
Urban	58	75	8	2	0	0
Rural	56	48	11	5	3	0

Philippines	Hospital (no clinic)	Barangay supply point	FP clinic	FP field worker	Commercial source	Private doctor	Other
All women	17	7	94	8	14	23	3
Urban	17	3	95	5	24	28	3
Rural	16	10	94	10	9	20	4

Trinidad and Tobago	Government facility	FP Assoc. clinic	FP field worker	Pharmacy	Private doctor	Other
All women	72	46	2	39	34	2
Urban	65	56	2	40	36	2
Rural	83	30	1	36	30	2

Venezuela	Hospital	Health centre	Social security facility	Private clinic	Welfare facility	Pharmacy	Private doctor	Missing data
All women	60	55	10	19	17	1	9	0
Urban	58	56	11	20	19	1	10	0
Rural	71	45	4	11	7	0	1	0

[a]Includes 11% unidentified categories.
[b]Includes 14% unidentified categories.
[c]Includes 10% unidentified categories.

2.5 KNOWLEDGE OF ANY METHOD AND KNOWLEDGE OF A SOURCE

A question which comes readily to mind is the extent to which women who had heard of at least one method of family planning knew where they could go for advice and supplies. If many women knew of methods but not of sources, there could have been a programme bottleneck at the supply stage. At the same time, one would expect it to be relatively uncommon for a woman who said that she was not familiar with any method *per se* to report that she did know where she would be able to go for advice or supplies. The proportions knowing a source are presented separately for women who had and those who had not heard of at least one method of family planning by type of residence in table 6.

These results indicate that between 5 and 57 per cent of women who knew a method did not know where they

Table 6 Per cent knowing a source of contraceptive advice or supplies by knowledge of any contraceptive method and by type of residence: currently married women below age 45

	Knew some method			Knew no method		
	All women	Urban	Rural	All women	Urban	Rural
Colombia	70	81	48	7	10	6
Costa Rica	90	93	87	**	**	**
Ghana	64	70	60	–	–	–
Indonesia	67	66	68	4	2	4
Kenya	47	55	46	–	–	–
Korea	89	89	88	33	38	30
Lesotho	43	50	42	–	–	–
Malaysia	85	86	84	20	15	21
Mexico	57	71	34	1	4	0
Nepal	26	55	24	–	–	–
Panama	76	84	65	0	0	0
Paraguay	95	98	93	8	13	7
Philippines	83	92	78	3	4	3
Trinidad and Tobago	94	96	92	28	**	**
Venezuela	69	72	55	6	7	4

NOTE: ** indicates less than 20 cases in the base; – indicates information not available.

could go for assistance. Nepal is an outlier at 74 per cent. Knowledge of a source appears to approach knowledge of at least one method only when both are nearly universal. Of course the method(s) reported here as known are not limited to service methods, but previous analysis has shown that in most countries the vast majority of women who know any method know at least one efficient method (Vaessen 1980). The proportion of women knowing of a method who also knew of a source is generally higher in urban than in rural areas.

As anticipated, the proportions of women who did not know of any specific method but said they knew where they could go for family planning assistance are comparatively small, but they are not entirely inconsequential. They tend to be somewhat higher in towns and cities than in the countryside. As mentioned above, in Ghana, Kenya, Lesotho and Nepal women who had not heard of at least one method of family planning were not asked about sources, and the situation is similar for Mexico and Panama, where the screening question determining whether or not a respondent would be asked about sources referred specifically to awareness of methods of family planning.[5] The implication is that in these six countries the overall level of knowledge of a source of family planning assistance is somewhat underestimated. Certainly in Paraguay, the only country where the question was asked of women who did not know any specific method separately from those who did know one or more methods, an appreciable number of the former said that they did know where they could go. The high level of knowledge of source indicated for women who knew of no specific method in Korea and Trinidad and Tobago can probably be accounted for by the fact that almost all women were aware of family planning in these two countries, and even among the few who knew no method as such, knowledge of where to find out was widespread.

2.6 KNOWLEDGE OF A SOURCE AND FERTILITY PREFERENCE

The proportion of women who know where to go for family planning assistance is sometimes taken as a measure of the supply of contraceptive services. Similarly, the proportion who want no more children has been considered as a way of evaluating the demand for such services. Neither indicator is ideal: women may know of the existence of a source but still view it, for example, as inaccessible and, on the other hand, there is likely to be at least some demand for contraception for birth spacing as well as for family limitation.

Most commonly fertility preference (desire to terminate childbearing) is introduced as a control in an attempt to isolate as clearly as possible the effect of supply on contraceptive use or other fertility-related behaviour (Chidambaram and Mastropoalo 1982; Pebley and Brackett 1982). However, the supply of and demand for contraceptive services are interconnected

[5]Nevertheless a few Kenyan and Mexican women who were coded as knowing no method were also coded as knowing a source, due presumably to errors in the data collection or processing, although for Mexico inconsistent responses regarding knowledge of methods is also a possible explanation.

through a dynamic process which does not lend itself to analysis with cross-sectional survey data. Indeed, it is difficult to imagine how availability could have an impact on contraceptive practice, and ultimately fertility, beyond permitting the satisfaction of already existing demand, except via the path of stimulating further demand. Although demand can clearly exist independently of supply, this is difficult, if not impossible, to measure. Hence controls for demand are probably more likely to eliminate a large part of the effect of supply than to isolate it.

Because of the interest in the issue of supply and demand, it may nevertheless be useful to examine the overall relationship between the two variables. The data in table 7 are restricted to fecund women, for whom there was presumably some possibility of choice as to whether or not to have more children. The fecund group is defined to include those who had had contraceptive sterilization operations, who are assumed to have wanted no more children. Women who didn't know or were undecided about whether they wanted more children have been combined with those who wanted more. The proportions shown are extracted from simple cross-tabulations of the two dichotomous variables; the statistic ϕ, which represents χ^2 adjusted for sample size and takes values between 0 (no association) and 1 (perfect association), is presented as a guide to the strength of the relationship.

Supply and demand do appear to have some connection in most of these countries. Knowledge of a source of contraceptive advice or supplies is usually higher among women who wanted no more children than among those who did not yet consider their families complete, and at the same time, more women who knew a source than women who did not know one were apt to have had all the children they desired. The relationship is at best a weak one, however. It emerges most clearly in Indonesia, Kenya, Korea and Lesotho and is often a little stronger in rural than in urban areas. Puzzlingly, in Costa Rica the association is negative rather than positive, while in four other Latin-American countries there appears to be no connection at all; these are all places where knowledge of a source is high, and there is probably considerable demand for contraception for spacing purposes. In sum, service supply, as gauged by awareness of family planning services, may be loosely associated with the demand for services which is reflected in the proportions wanting no more children. Differences both among countries and by residence suggest that this may be more likely to be the case at the earlier than at the later stages of adoption of fertility control practices.

2.7 KNOWLEDGE OF A SOURCE AND USE OF CONTRACEPTION

The ultimate importance of whether or not a woman knows where she can get family planning advice and supplies lies in its potential impact on her use of contraception. Analytical studies of this relationship have invariably demonstrated a substantial positive association (Chidambaram and Mastropoalo 1982; Pebley and Brackett 1982; Rodríguez 1978; Tsui, Hogan, Welti-Chanes and Teachman 1981). In particular, women who know a source have access to efficient methods of birth control, which others presumably do not. However, the limitations of the data on knowledge of source complicate interpretation of results such as the distributions by category of current method use shown in table 8. Only women currently exposed to the risk of pregnancy are included in these comparisons.

Use of efficient methods was indeed reported by a much higher proportion of women who knew a source than those who did not in all countries. More than half of all women who knew a source fall into this category in seven cases, although the fraction remains very low in the African countries represented. The high proportions reporting use of efficient methods among women who did not know a source in Costa Rica, Panama and Venezuela can be accounted for to some extent by sterilized women but includes a good many women using such methods as the pill as well (see section 2.2). Only in six countries does this paradoxical group represent 2 per cent or less of all women who reported that they knew no source.

For women who knew a source, the proportion using inefficient methods is considerably lower than that using efficient methods in every country except Lesotho and the Philippines; it nevertheless tends to be above the proportion using inefficient methods among women who did not know a source. Thus knowledge of a source of family planning assistance is usually associated with use of contraception in general and not only with the employment of modern methods. Chidambaram and Mastropoalo have further shown that this relationship persists when controls for number of living children and educational attainment are introduced (1982: 297).

At any given time, there are inevitably some women who are not using any method, possibly because they want to become pregnant or because they have just given birth. However, the proportion of women who were not using contraception among those who did know a source appears typically to be well above that to be expected on this basis. Non-users represented over one-third of this group in all but six countries, and as much as three-quarters in four countries. At the same time, at least three-quarters of the women who did not know where to go reported that they were not using any method in all but three countries. As observed above in section 2.2, lack of knowledge of a source is clearly linked with non-use of contraception; but it is impossible to say whether women did not use any method because they did not know where to go for assistance, or whether they had not found out where to go because they had no interest in family planning.

These same patterns emerge by and large in both urban and rural areas. Nevertheless in almost all countries, if rural women knew a source, they were less likely than comparable urban women to be using an efficient method. The principal exceptions are Indonesia and Trinidad and Tobago, where use of efficient methods appears to be somewhat higher among women who knew a source in the countryside than in towns and cities, and there is very little contrast in Korea, Lesotho and Nepal. The reporting of use of efficient methods among women who did not know a source is likewise more an urban

Table 7 Per cent wanting no more children by knowledge of source of contraceptive advice or supplies and per cent knowing a source of contraceptive advice or supplies by preference for more children, by type of residence: currently married, fecund women below age 45

	All women					Urban					Rural				
	% Knowing source		% Wanting no more			% Knowing source		% Wanting no more			% Knowing source		% Wanting no more		
	Want more	Want no more	Know source	Know no source	ϕ^a	Want more	Want no more	Know source	Know no source	ϕ^a	Want more	Want no more	Know source	Know no source	ϕ^a
Colombia	64	70	62	56	0.06	80	81	54	56	0.02	35	51	71	56	0.12
Costa Rica	94	88	48	64	0.09	95	92	46	58	0.06	92	85	51	68	0.11
Ghana	43	62	14	7	0.12	54	66	16	10	0.08	37	59	14	6	0.13
Indonesia	51	68	44	28	0.17	53	74	50	29	0.21	51	67	43	27	0.16
Kenya	41	62	21	10	0.15	47	74	23	8	0.20	40	60	21	10	0.14
Korea	80	92	74	48	0.18	81	92	73	49	0.16	78	92	75	47	0.20
Lesotho	26	48	22	10	0.16	35	60	26	11	0.20	26	46	22	10	0.16
Malaysia	80	85	44	36	0.06	85	86	50	48	0.01	78	84	42	32	0.08
Mexico	48	56	60	51	0.08	66	73	59	52	0.07	24	31	60	51	0.08
Nepal	4	10	52	28	0.12	28	51	70	46	0.23	4	8	49	28	0.10
Panama	75	74	61	62	0.01	84	84	57	58	0.00	62	64	66	64	0.01
Paraguay	92	92	29	30	0.00	97	98	26	20	0.02	88	89	32	31	0.00
Philippines	75	84	56	41	0.12	89	93	58	45	0.07	68	79	54	41	0.12
Trinidad and Tobago	94	95	44	38	0.03	96	96	39	38	0.00	90	93	50	38	0.07
Venezuela	67	70	56	53	0.03	71	74	55	51	0.03	50	54	62	57	0.05

[a] $\phi = \left(\frac{\chi^2}{N}\right)^{\frac{1}{2}}$

Table 8 Per cent distribution by category of current method use and knowledge of a source and by type of residence: currently married, exposed women below age 45

	Knew source				Did not know source			
	Efficient	Inefficient	None	Total	Efficient	Inefficient	None	Total
A All women								
Colombia	51	16	33	100	13	11	76	100
Costa Rica	68	13	19	100	50	10	40	100
Ghana	16	6	78	100	1	5	95	100
Indonesia	51	6	43	100	4	3	93	100
Kenya	13	5	83	100	0	2	97	100
Korea	38	1	51	100	9	6	85	100
Lesotho	8	8	84	100	0	2	98	100
Malaysia	37	12	51	100	7	10	84	100
Mexico	52	12	36	100	9	7	84	100
Nepal	26	0	74	100	1	0	98	100
Panama	63	9	28	100	33	12	55	100
Paraguay	35	17	48	100	0	8	92	100
Philippines	27	30	44	100	2	13	35	100
Trinidad and Tobago	59	7	34	100	7	9	33	100
Venezuela	54	14	32	100	28	15	58	100
B Urban								
Colombia	54	16	30	100	22	13	64	100
Costa Rica	70	14	16	100	56	8	36	100
Ghana	21	5	73	100	2	5	94	100
Indonesia	45	14	40	100	3	5	91	100
Kenya	24	3	72	100	1	2	98	100
Korea	40	12	48	100	11	8	81	100
Lesotho	9	7	85	100	0	1	99	100
Malaysia	46	15	38	100	17	15	68	100
Mexico	57	12	31	100	16	11	72	100
Nepal	31	0	69	100	15	0	86	100
Panama	67	8	24	100	47	10	43	100
Paraguay	45	20	35	100	0	14	26	100
Philippines	35	29	36	100	4	13	83	100
Trinidad and Tobago	58	7	35	100	8	14	77	100
Venezuela	56	14	30	100	35	17	48	100
C Rural								
Colombia	40	17	43	100	7	10	83	100
Costa Rica	65	13	21	100	47	11	42	100
Ghana	12	6	82	100	0	5	95	100
Indonesia	53	4	43	100	3	4	94	100
Kenya	11	5	85	100	1	2	97	100
Korea	36	9	55	100	7	3	90	100
Lesotho	8	8	84	100	0	2	98	100
Malaysia	32	10	57	100	4	8	88	100
Mexico	36	11	54	100	4	5	91	100
Nepal	26	1	74	100	1	0	99	100
Panama	56	10	34	100	25	13	62	100
Paraguay	26	15	59	100	0	6	94	100
Philippines	21	30	48	100	2	13	85	100
Trinidad and Tobago	61	6	33	100	6	5	88	100
Venezuela	40	13	49	100	8	8	84	100

phenomenon. Inefficient methods were used to about the same extent in rural as in urban areas, both among women who knew a source and among those who did not. Thus in balance, non-use by women who knew a source tends to be more prevalent in rural areas, whereas non-use by women who did not know a source often shows little residence differential.

2.8 SUMMARY

There is evidence of several kinds of downward bias in the reported levels of knowledge of a source. First and most importantly, placement of a general question on knowledge of sources before the detailed series of questions on knowledge and ever-use of individual methods can lead to serious underestimation of the proportions knowing any source. Secondly, limiting the question to women who report that they are familiar with at least one method of family planning appears to exclude some women who do know a source. Thirdly, it seems possible that even under the best of circumstances, a single general question on sources of family planning advice and supplies may be interpreted in a restricted fashion; sources for condoms and female sterilization may be especially likely to be overlooked even when they are the only ones known. Failure to identify all the respondents who knew a source is important because this distinction determined who was asked many of the further questions on accessibility and availability. Complementary upward bias in the reporting of knowledge of a source, due for instance to induced response, cannot be ruled out, although there is no direct evidence of such effects.

The first two reasons for underestimation came to light because of differences between countries in the ordering of the questions. Lack of uniformity in wording with respect to advice or information versus actual supplies could also have led to further non-comparability in the results, although this is probably not a major consideration.

The proportion of women who knew of a source of family planning assistance appears to vary widely among countries. Differences by marital status and exposure status follow fairly regular patterns. The level of awareness varies moderately but consistently through the reproductive lifespan, rising in the early stages and declining later on. Differentials by residence are marked in most countries, with urban women exhibiting higher levels of knowledge of a source than rural women. Number of years of education is strongly positively associated everywhere with knowledge of a source. The information on types of source known is highly country-specific but potentially valuable.

Examination of the association between awareness of a source of contraceptive advice and supplies and other variables concerned with family planning practice offers some insight into the role of knowledge of a source in the process of adoption of family planning. By no means all women who knew at least one method knew where to go for assistance, unless it was the case that almost everyone knew a source, but at the same time, where the questionnaire allowed for this possibility, more than a few women who were not familiar with any specific method did say that they were aware of a source. Although the two variables are generally positively related, the proportion of women knowing a source does not appear either to be strongly influenced by or to have an important bearing on the demand for family planning services as shown by the proportion of fecund women desiring not to have more children; this link may be more important, however, where the practice of family planning is less widespread. The observation that knowledge of a source of family planning assistance is closely associated with contraceptive use is almost tautological. Employment of modern methods is inevitably highly concentrated among women who know a source, although more of these women were using less efficient methods also. Nevertheless, especially in countries where the level of method use was low, substantial proportions of women who were exposed to the risk of pregnancy and knew where to go for assistance were not using any method.

The persistence of urban/rural differentials in many of these comparisons suggests that knowledge of a source is one step in a succession of ways in which rural women were at a disadvantage with regard to family planning. They were less likely to know a source than urban residents, even when they had heard of a method, and once they knew a source, they were less prone to use contraception. Although the differing definitions of urban residence affect comparisons between countries, these data suggest that the contrast by type of residence is particularly marked in certain countries such as Mexico, while it is insignificant in Trinidad and Tobago; in Indonesia and Korea rural residents may actually have fared better than women living in population centres.

3 Knowledge of Sources for Individual Methods

3.1 THE DATA

Five of the more recent WFS surveys have yielded data on knowledge of sources for specific contraceptive methods, either in addition to that on knowledge of general sources of assistance (Ghana, Paraguay, Philippines, Venezuela) or instead of the latter (Sudan). In contrast to the information on general sources, the method-specific information is quite similar from country to country in form and content.

Both the final version of the family planning module and the supplement to the individual core questionnaire provide for a separate table containing method-specific questions on knowledge of sources and their accessibility, to be added immediately after the inquiry on knowledge and ever-use of methods of contraception (WFS 1977a; WFS 1977b). On the basis of the preceding answers the interviewer is required to mark which of the methods indicated in the table are known to the respondent and then to question her about each in turn. All the countries used this format except Venezuela, where the questions were inserted directly into the inquiry on knowledge and ever-use, thus avoiding the need for the interviewer to refer back to that information. In the other countries the check-back does not appear to have caused any discernible problems, however. In the Philippine questionnaire the table was not placed directly following the series of questions on knowledge and ever-use of contraceptive methods; among the intervening items was a general question on whether the respondent knew where she could go to get family planning supplies, and women who replied negatively were not then asked about sources for specific methods. Sudanese women who had been sterilized for contraceptive reasons or whose husbands had been sterilized were likewise excluded, presumably because they had no further need for contraceptive services, but comparability with other countries is compromised very little in this instance because there were only eight such cases in the study population.[6]

The methods designated in the model questionnaires are the pill, IUD, condom and female sterilization; others are to be included as appropriate. In addition to these four methods which were covered in all the surveys, Ghana asked about injection and other female scientific methods (diaphragm, jelly, foam, etc), and Sudan asked about injection.

According to the WFS models, the source mentioned by the respondent as the one to which she would go to get the method is to be recorded by name and location. The Ghanaian questionnaire actually asked first for the types of outlet where the methods known to the respondent could be obtained and then which place she would use. In Venezuela the outlet specified was the nearest one rather than the one the respondent would use, and it is not certain how or to what extent this difference affects the response. For purposes of this report knowledge of a source for each method is defined as the provision of any definite reply to these questions (ie an answer other than 'don't know'). The data on types of source were derived from the details of the responses.

3.2 LEVELS OF KNOWLEDGE OF METHOD SOURCES

The proportions of currently married respondents reporting that they knew sources for individual methods are given by exposure status and current use of contraception in table 9. Women who were using the method in question at the time of interview are shown in each case as a separate category. Failure to answer the question on knowledge of source for any method, which appears to have been uniformly quite rare, has again been treated as a negative response. Among the five countries, Sudan and Venezuela represent opposite extremes. Sources for all the methods considered were known by a great majority of currently married women in Venezuela, while in Sudan well under ten per cent knew where to get any method except the pill. The situation in Paraguay and the Philippines approaches that in Venezuela, whereas Ghana is more similar to Sudan.

Sources for the pill are consistently better known than sources for the other methods. The IUD comes next in Ghana and Paraguay and is close to this elsewhere. Although in Paraguay and the Philippines fewest women knew where female sterilization was available, sources for the condom were the least widely known in Sudan and Venezuela. The level of knowledge of sources for both injection and other female scientific methods is relatively low in Ghana, but in Sudan sources for injection were at least as well known as any method other than the pill. Needless to say, the extent of knowledge of sources for different methods is largely a function of the existing service emphasis in any given country.

Women who were exposed to the risk of pregnancy were generally more likely to know a source for each method than those who were not exposed, but the differences are not large. The contrast is somewhat greater in the Philippines and less in Ghana than in other countries; there does not appear to be any consistent variation by method. As noted in section 2.2, the non-

[6] As elsewhere, Sudanese respondents who reported that they were infecund (including those sterilized for non-contraceptive reasons) were asked about method sources.

Table 9 Per cent knowing a source for pill, injection, IUD, other female scientific methods, condom and female sterilization by exposure status and current use of contraception: currently married women below age 45

	Ghana	Paraguay	Philippines	Sudan (N)	Venezuela
Pill					
All women	36	87	77	22	89
Exposed	36	88	79	23	89
Using pill	97	100	99	96	100
Using other efficient methods	74	96	97	**	95
Using inefficient methods	36	91	88	73	94
Not using	32	81	65	18	78
Not exposed	37	81	70	20	87
Injection					
All women	14	–	–	7	–
Exposed	15	–	–	8	–
Using injection	**	–	–	**	–
Using other efficient methods	34	–	–	37	–
Using inefficient methods	15	–	–	50	–
Not using	13	–	–	6	–
Not exposed	12	–	–	5	–
IUD					
All women	24	71	71	4	83
Exposed	24	73	73	5	84
Using IUD	**	100	100	**	98
Using other efficient methods	59	85	91	28	89
Using inefficient methods	25	83	84	27	88
Not using	21	59	60	3	74
Not exposed	24	67	64	3	78
Other female scientific methods					
All women	19	—	–	–	–
Exposed	19				
Using other female scientific methods	96	–	–	–	–
Using other efficient methods	47	–	–	–	–
Using inefficient methods	23	–	–	–	–
Not using	15	–	–	–	–
Not exposed	18	–	–	–	–
Condom					
All women	19	53	75	2	70
Exposed	20	54	77	3	70
Using condom	64	97	98	**	99
Using other efficient methods	56	71	94	18	78
Using inefficient methods	22	68	88	13	76
Not using	16	38	63	2	56
Not exposed	17	49	68	2	70

[*Table continues*]

Table 9 (*cont*)

	Ghana	Paraguay	Philippines	Sudan (N)	Venezuela
Female sterilization					
All women	18	42	61	7	83
Exposed	18	43	62	7	84
Sterilized	**	100	95	–	99
Using other efficient methods	36	53	82	30	87
Using inefficient methods	32	57	73	50	88
Not using	16	29	47	6	76
Not exposed	15	42	54	5	81

NOTE: ** indicates less than 20 cases in the base; – indicates information not available.

exposed category is composed of two quite different elements: currently pregnant women, who have recently been and presumably will soon again be very much at risk of pregnancy, and infecund women, who may not have been exposed for some time, if they ever were.

Within the exposed category the level of awareness exhibits very much the patterns expected. In particular, a high proportion of the women who reported that they were using one of these methods at the time of the survey said that they knew where the method could be found. The one real exception is for the condom in Ghana, where only two-thirds of current users could name a source. But since condoms can often be acquired from outlets other than those where female methods are available, and since the principal responsibility for obtaining them may rest with the husband, this result is not necessarily contradictory. Two per cent of sterilized women in the Philippines also said they did not know a place where female sterilization was offered, but again this could be explained by the possibility of a substantial lapse of time since their own operation and the absence of need for further contact in the interim. On the whole the degree of consistency between information on knowledge of method sources and that on method use, which was obtained through an entirely separate series of questions, is quite satisfactory; the method-specific questions are here a clear improvement on an overall question on knowledge of sources of contraceptive assistance.

Users of efficient methods other than the method in question were somewhat less likely than users of the method itself to know sources for that method. Nevertheless, the proportions of women using other efficient methods who knew where to obtain the pill remain very high. Fewer still of the women who were using inefficient methods knew sources for any of the four designated methods except female sterilization, for which the level of awareness of sources is about the same among users of other efficient methods and users of inefficient methods. Given the low overall level of knowledge of method sources in Sudan, the proportions of respondents using inefficient methods who knew where to find each of the efficient methods considered appear high. Among exposed women, those who were not using any form of contraception were uniformly least likely to know a source for each of the methods. The contrast between users of inefficient methods and non-contraceptors is minimal in Ghana and especially sharp in Sudan.

3.3 TYPES OF SOURCE THE RESPONDENT WOULD USE

During the processing stage the data on names and locations of the sources the respondent would use to obtain each method were classified by type of place. The countries designated different categories reflecting their individual service systems and their particular interests. The results nevertheless show regular variations from method to method, and certain inter-country comparisons can be made (table 10). Missing data, that is non-response to the question on the type of place, are not shown in the table because the sequence leading up to this item was not the same from country to country, and it was not possible to construct a base that was both appropriate and comparable.

The sources reported as places to which the respondents would go to get the pill tended to be quite varied. The IUD could evidently be obtained at several types of outlet also, although hospitals were usually mentioned more often than for the pill and pharmacies do not figure to any extent except in Sudan. In Paraguay, Sudan and Venezuela the great majority of respondents who knew of the condom said they would get it from a pharmacy, while in Ghana and the Philippines, sources of the condom were as varied as the pill. Female sterilization was thought to be most readily obtainable in hospitals, but private doctors were also seen as an important source. In Ghana the distribution of places where women would go to get injection is very similar to that for the IUD, and the pattern for other female scientific methods is like that for condoms. Sudanese women cited pharmacies as a source for injections much more often and hospitals, family planning clinics and private doctors less often than for the IUD. All of these observations make sense in terms of the levels of knowledge of the different methods and the way in which each can be dispensed.

Table 10 Per cent distribution by type of source to which the respondent would go for the pill, injection, IUD, other female scientific methods, condom and female sterilization and by type of residence: currently married women below age 45 who knew a source for the method[a]

Ghana	Govt. hosp., clinic	FP Assoc., Christ. Cncl. clinic	Mobile FP clinic	FP field worker	Pharmacy, shop	Private doctor	Total
Pill							
All women	49	11	11	14	6	8	100
Urban	53	14	10	10	8	6	100
Rural	46	8	12	17	6	10	100
Injection							
All women	62	11	12	3	1	10	100
Urban	65	14	9	2	2	9	100
Rural	60	8	15	4	1	12	100
IUD							
All women	65	12	8	5	1	8	100
Urban	70	14	7	4	1	5	100
Rural	61	11	10	5	1	11	100
Other fem. sci. methods							
All women	33	11	10	23	16	6	100
Urban	40	15	10	17	16	4	100
Rural	27	8	11	29	16	9	100
Condom							
All women	34	7	12	27	16	5	100
Urban	39	9	11	19	18	5	100
Rural	28	5	13	35	14	5	100
Female sterilization							
All women	87	4	0	1	0	8	100
Urban	87	4	0	0	1	8	100
Rural	87	3	0	1	0	8	100

Paraguay	Hospital	Govt. FP clinic	FP Assoc. clinic	Pharmacy	Private doctor	Other	Total
Pill							
All women	18	23	2	54	3	1	100
Urban	13	20	2	62	2	0	100
Rural	22	26	1	46	4	1	100
IUD							
All women	47	30	2	1	20	1	100
Urban	43	27	3	0	26	0	100
Rural	50	33	2	1	13	1	100
Condom							
All women	10	13	1	74	1	0	100
Urban	5	12	1	82	0	0	100
Rural	17	16	1	64	1	1	100

[*Table continues*]

Table 10 (*cont*)

Paraguay (*cont*)	Hospital	Govt. FP clinic	FP Assoc. clinic	Pharmacy	Private doctor	Other	Total
Female sterilization							
All women	59	9	0	0	31	0	100
Urban	49	10	0	0	41	0	100
Rural	70	9	0	1	20	0	100

Philippines	Hospital (no clinic)	Barangay supply point	FP clinic	FP field worker	Commercial source	Private doctor	Other	Total
Pill								
All women	1	4	85	1	4	4	1	100
Urban	1	1	84	0	7	6	1	100
Rural	1	5	86	2	2	3	1	100
IUD								
All women	3	1	86	1	0	8	1	100
Urban	3	0	87	0		10	1	100
Rural	4	1	86	1	0	7	1	100
Condom								
All women	1	4	82	2	8	3	1	100
Urban	0	1	79	1	14	4	1	100
Rural	1	6	83	2	3	2	1	100
Female sterilization								
All women	19	0	72	0	0	9	0	100
Urban	16	0	74	0	0	10	0	100
Rural	21	0	70	0	0	8	0	100

Sudan (N)	Hospital	Health centre	Small clinic, 1st aid station	FP clinic	Pharmacy	Private doctor	Total
Pill							
All women	10	6	0	2	78	4	100
Urban	8	10	0	1	78	2	100
Rural	14	0	0	2	79	5	100
Injection							
All women	25	6	0	2	40	26	100
Urban	20	8	0	2	44	25	100
Rural	39	0	0	3	29	29	100
IUD							
All women	44	3	1	6	6	40	100
Urban	30	4	2	8	8	48	
Rural	75	0	0	0	4	21	100

[*Table continues*]

Table 10 (*cont*)

Sudan (N) (*cont*)	Hospital	Health centre	Small clinic, 1st aid station	FP clinic	Pharmacy	Private doctor	Total
Condom							
All women	1	0	0	1	96	2	100
Urban	1	0	0	1	94	3	100
Rural	**	**	**	**	**	**	**
Female sterilization							
All women	85	0	0	4	0	11	100
Urban	82	0	0	6	0	13	100
Rural	90	0	0	2	0	8	100

Venezuela[b]	Hospital	Health centre	Social security facility	Private clinic	Welfare facility	Pharmacy	Other	Total
Pill								
All women	15	18	1	1	1	63	0	100
Urban	14	18	1	1	2	64	0	100
Rural	20	20	0	2	1	55	2	100
IUD								
All women	49	28	2	10	8	0	2	100
Urban	45	30	3	11	9	0	2	100
Rural	69	19	1	4	4	0	2	100
Condom								
All women	1	2	0	0	0	95	2	100
Urban	1	2	0	0	0	96	1	100
Rural	3	2	0	0	0	90	6	100
Female sterilization								
All women	63	3	3	15	16	0	1	100
Urban	60	3	3	16	17	1	0	100
Rural	81	3	1	6	7	0	2	100

[a]Missing data are excluded because the question was asked of differing subsets of women in the different countries.
[b]Data refer to the nearest source for each method.
NOTE: ** indicates less than 20 in the base.

These results show the Ghanaian distribution system to be a combination of public, private and commercial outlets, with the government playing the major role; family planning field workers and mobile clinics, which reduce accessibility problems to a minimum by bringing the service to the client, are important sources for all methods except female sterilization, and especially so in the countryside. For methods other than the IUD and female sterilization, pharmacies are very heavily relied upon in Paraguay, Sudan and Venezuela. Of all the five countries, the Philippine system seems to be the most concentrated on one type of source, a network of family planning clinics offering a selection of methods, which is the principal choice of both urban and rural respondents. Elsewhere there is apt to be considerable contrast by type of residence in the frequency with which a given type of source was mentioned.

3.4 KNOWLEDGE OF METHODS AND KNOWLEDGE OF METHOD SOURCES

Further insight into both the quality of these data and their substantive implications can be gained by examin-

ing knowledge of a method source in relation to knowledge of the method itself. For each method table 11 indicates the proportion of women who had heard of the method and the proportion among those who knew a place where it could be obtained. As in the case of knowledge of method source, women who gave indeterminate answers or no answer on knowledge of method were considered not to know the method.

The first observation to be made is that, whenever knowledge of a method was high, at least four-fifths of the women who knew the method also knew where it could be obtained. However, in the Philippines, where knowledge of each method except female sterilization is at least as widespread as in Paraguay or Venezuela, the proportions shown as knowing sources for each method are quite consistently lower. Although this could be a genuine phenomenon, it raises a question as to whether awareness of method sources in the Philippines was not underreported due to the restriction of eligibility for these questions to women who had said that they knew not only the method in question but also a source of family planning supplies in general. Examination of the response to questions on general sources revealed that knowledge of a source is very often understated in that context (section 2). In the Philippines only 79 per cent of currently married women below age 45 were recorded as knowing a source of supplies in general; of the several reasons for downward bias that could be identified, it seems possible that narrow interpretation of the overall question to mean a family planning centre *per se* could have been a factor. Differential omission of certain types of source, such as family planning workers or pharmacies, could be expected to affect some of the individual methods considered here more than others.

It is also clear that the low overall levels of awareness of method sources in Ghana and Sudan (table 8) are partly due to the relatively small fraction of women who had ever heard of each method. However, the gap between knowledge of the method and knowledge of a source is consistently much greater in Sudan than in Ghana, even for the pill and female sterilization where the level of knowledge of the method is actually very similar.

Rural women were less likely than urban women to know where they could obtain each method, even when attention is confined to those who had heard of the method, but this is much less true in Ghana than in the other four countries. The urban/rural differential is substantial for the pill only in Sudan, while in Venezuela it is relatively unimportant for the IUD and female

Table 11 Per cent knowing pill, injection, IUD, other female scientific methods, condom and female sterilization and per cent of those who knew each method knowing a source for that method by type of residence: currently married women below age 45

	Ghana	Paraguay	Philippines	Sudan (N)	Venezuela
Pill					
All women					
Knew method	49	91	91	48	94
Knew source	74	95	84	96	94
Urban					
Knew method	64	95	97	74	96
Knew source	75	98	93	61	96
Rural					
Knew method	41	88	89	39	85
Knew source	74	93	80	35	87
Injection					
All women					
Knew method	23	–	–	25	–
Knew source	62	–	–	29	–
Urban					
Knew method	32	–	–	48	–
Knew source	65	–	–	34	–
Rural					
Knew method	19	–	–	17	–
Knew source	60	–	–	24	–

[*Table continues*]

Table 11 (*cont*)

	Ghana	Paraguay	Philippines	Sudan (N)	Venezuela
IUD					
All women					
Knew method	36	79	87	14	88
Knew source	68	90	82	30	94
Urban					
Knew method	51	91	94	32	91
Knew source	69	95	91	33	94
Rural					
Knew method	28	70	84	7	76
Knew source	67	86	77	25	91
Other fem. sci. methods					
All women					
Knew method	26	–	–	–	–
Knew source	73	–	–	–	–
Urban					
Knew method	38	–	–	–	–
Knew source	74	–	–	–	–
Rural					
Knew method	19	–	–	–	–
Knew source	72	–	–	–	–
Condom					
All women					
Knew method	30	60	89	6	78
Knew source	63	89	84	40	90
Urban					
Knew method	47	74	94	15	83
Knew source	64	96	92	43	92
Rural					
Knew method	22	48	87	3	59
Knew source	61	82	80	33	78
Female sterilization					
All women					
Knew method	31	47	76	23	87
Knew source	58	89	80	29	95
Urban					
Knew method	41	58	88	43	89
Knew source	55	92	90	33	96
Rural					
Knew method	26	39	71	16	79
Knew source	60	86	74	25	94

NOTE: – indicates information not available.

sterilization as well as the pill. Female methods in general, and the pill in particular, may be stressed in the effort to bring family planning to rural women while the condom remains available principally in population centres.

3.5 KNOWLEDGE OF SOURCES FOR MULTIPLE METHODS

The availability and accessibility of one method is often linked with that of other methods, and trade-off among methods has considerable potential bearing on contraceptive use. Both the nature of the source and the nature of the method are relevant. Many sources actually provide a selection of methods, but a woman who knows such a source may not be aware of more than one method offered. Condoms can appropriately be distributed through non-medical outlets where most female methods would not be available, while female sterilization usually requires a specialized facility. If a woman knows a source for one method only, her choices, as far as efficient contraception is concerned, are limited to use or non-use of that method. When the same place is recognized as a source of multiple methods, many aspects of accessibility figure differently in the choice among those methods as compared to the situation where the sources are not the same; travel time and cost of transportation would then be identical per visit to the source although the number of visits and their frequency could still vary. Once again the conditions prevailing in any given instance are largely a function of the existing contraceptive service system.

This complex set of factors is not easily incorporated into an analytical framework. However, some indication of the extent of the problem and its possible variation from country to country can be gained from studying the distributions of respondents by the number of methods for which a source is known (table 12). In order to establish a common base for inter-country comparisons, attention is confined to the four methods on which data were collected in all five surveys. The proportion of women who did not know a source for any of the four methods varies among countries exactly as would be expected from the patterns for individual methods and is consistently lower in urban than in rural areas. In all the countries, but especially the Philippines and Sudan, the proportion of women knowing a source for any method is not much larger than that knowing a source for the pill (table 8), so choices for those who know sources for more than one method almost always include the pill. The small minority of Sudanese women knowing any source who knew sources for more than one method suggests moreover that most outlets there effectively offer the pill only. In Ghana and Paraguay women knowing a source for any method are widely distributed as to the number of methods for which they know a source. Knowledge of any method source is highest in Venezuela, and efficient contraception is in this sense available there to most women. Nevertheless, the proportion of women knowing any source who knew sources for all four methods is

Table 12 Per cent distribution by number of methods for which a source was known and by type of residence: currently married women below age 45

	Ghana	Paraguay	Philippines	Sudan (N)	Venezuela
All women					
No method	57	9	22	77	5
1 method	13	13	2	15	6
2 methods	13	23	4	4	10
3 methods	11	24	16	2	18
4 methods	6	30	56	1	61
Total	100	100	100	100	100
Urban					
No method	45	4	9	54	3
1 method	13	8	1	29	5
2 methods	16	16	3	9	9
3 methods	15	26	12	6	18
4 methods	12	46	74	3	66
Total	100	100	100	100	100
Rural					
No method	63	13	27	86	12
1 method	13	18	2	10	11
2 methods	12	28	5	2	17
3 methods	9	23	18	1	22
4 methods	4	18	48	0	39
Total	100	100	100	100	100

considerably larger in the Philippines, where the choice among methods thus appears broadest.

3.6 SUMMARY

The quality of the information on knowledge of sources for specific methods appears high, especially in comparison with the results on general sources presented in the previous section. The proportions knowing where each method could be obtained vary by exposure status and current use of contraception in the manner that would be expected, and in particular, the reporting of knowledge of sources for each method is essentially consistent with that of use of the method. The five countries for which method-specific information is available exhibit a broad range of levels of awareness of method sources, and although the dominant source of variation appears on the whole to be that among countries, regular patterns by method can also be discerned. Among the four methods covered in all five countries, sources for the pill are most widely known, followed usually by the IUD, and sources for either condom or female sterilization were known to the fewest women.

The information on types of place to which women reported they would go in order to obtain the various methods also exhibits differences from method to method of an appropriate nature. While obviously less suited to inter-country comparisons than those on most other topics, these data should be of considerable use to national programme planners and administrators.

Where the level of knowledge of a given method was high, the likelihood that a woman who knew the method would also have known of a source was likewise high, but where knowledge of the method was limited, relatively few of the women who knew the method also knew where to obtain it. Thus awareness of sources appears to spread in such a way as to catch up gradually with awareness of the methods. There is no obvious variation among methods in this respect. The fact that fewer women knew of sources in the Philippines than in Paraguay and Venezuela, where the levels of knowledge of methods are comparable, suggests that the limitation of the inquiry into knowledge of sources for individual methods to women who answered affirmatively to a general question on whether they knew a place to get family planning supplies may have led to underestimation of the proportions knowing sources for specific methods in the Philippines.

It is not realistic to consider knowledge of sources for the different methods entirely independently of one another. Wide variation in the distributions by the number of methods for which sources were known for the four methods on which data are available from all five countries offers a preliminary indication that there are large differences between countries in the degree to which this complicates the availability picture. A feature they have in common is that, where a source is known for more than one method, the pill is very apt to be one of those methods.

4 Accessibility of Services

4.1 THE DATA

In order to make use of a service of any kind an individual must not only know where this service can be found but must also perceive it to be accessible.[7] Many aspects of the accessibility of contraceptive services might be taken into account, ranging from objective factors, such as the distance to a source, to highly subjective matters, such as the psychological cost of being seen to enter a family planning clinic. Financial cost, consisting mainly of the expense of transportation and fees for the service itself, and cost in terms of time diverted from other activities are inevitably important considerations. Even with respect to the more objective characteristics of the service, however, data obtained through interviews can only represent the respondent's personal interpretation of the situation. Misconceptions are thus inextricably mixed with true variation in individual circumstances. Measures of perceived accessibility can perhaps be viewed most profitably as intermediate between the external realities of service accessibility in the community and individual contraceptive decisions, although in the absence of community-level information they have been ascribed the function of measuring the former as well.[8]

The original version of the family planning module, in which questions on accessibility were posed in terms of a source of advice or supplies in general, included questions on actual distance and travel time to the closest such source. Field tests conducted by WFS in 1976 revealed that the response to a direct question on distance were of little value because a large majority of women were unable to reply at all, and the estimates that were given were characterized by systematic bias and large variance (Rodríguez 1977: 16). It was found, however, that travel time together with means of transportation provided an acceptable proxy for actual distance. The final version of the family planning module contains questions on travel time and means of transportation with regard to the sources the respondent would use to obtain specific contraceptive methods. In addition, she is asked how much she thinks each method would cost there (per cycle for the pill, per insertion for the IUD, per unit stated for condoms, for the operation in the case of female sterilization). The supplement to the core questionnaire inquires likewise about travel time and cost for individual methods, but means of transportation is omitted.

Eight of the surveys asking about knowledge of a general source of contraceptive assistance followed up with questions on travel time (Colombia, Costa Rica, Kenya, Korea, Malaysia, Mexico, Nepal, Venezuela). Four of them also provide data on distance (Colombia, Costa Rica, Nepal, Venezuela), three on the means of transportation the respondent would use (Kenya, Korea, Malaysia), and one on the cost of one-way transportation for those indicating that they would use a mechanized means of transportation (Malaysia). All accessibility questions were necessarily limited to women who said that they knew a source of family planning assistance, and the data are subject to bias due to underreporting of knowledge of a source.

This material relates almost entirely to the source the respondent considered to be nearest to her home. Malaysia asked first for the source the respondent would prefer to use, and only those women who failed to identify a preferred source were asked for the closest source. However, the notion of nearest source known is not entirely straightforward. On the one hand, Rodríguez found that the source reported as closest was often not the closest one in fact (1977: 14). On the other hand, the nearest source is not necessarily the one the respondent would use, for other reasons of convenience or because of method preference. Condoms, for instance, can often be purchased at neighborhood shops but may not be a method the respondent would consider. In balance, it seems possible that women frequently respond to a general question concerning the source that is closest in terms of the outlet they are using, or a particular family planning centre of which they have heard, rather than the place that is nearest in any literal sense. If so, it could be in this sense that contraceptive use is most likely to bias the data on accessibility.

A variety of other questions related to the accessibility of sources of contraceptive assistance in general was asked in certain surveys. Indonesia and Lesotho included several of the standard items but with reference to the

[7] A valuable discussion of the major conceptual and measurement issues related to contraceptive accessibility is to be found in Lewis and Novak 1982.

[8] Exploratory work carried out at WFS by John Casterline has yielded empirical evidence on two counts relevant to the measurement of accessibility. First, he found no discernible difference in perceived travel time to the nearest source between Colombian women who were using contraception and those who were not using contraception at the time of the survey (personal communication). The comparison was based on women living in the same primary sampling unit, which in Colombia represented a small enough geographical area to give reasonable assurance that the objective circumstances of all respondents living within a given unit were the same. If verifiable at a general level, this would remove one of the most serious potential draw-backs of perceived accessibility as a measure for employment in the analysis of contraceptive use, namely that it could be biased with respect to the dependent variable. Secondly, comparisons of the individual-level data with the community-level data for the Philippines showed very large discrepancies as to both the types of service available and their accessibility (personal communication). The pattern of these discrepancies, a striking feature of which is the failure of individual respondents to mention family planning field workers in communities where this service was reported to exist, suggests that, while each of the two data sets is clearly subject to misreporting in various ways and degrees, they probably reflect realities that genuinely differ.

source most recently visited, thus limiting the denominator to women who had actually been to a source (in Indonesia, within the last year). Regarding the nearest source known, Malaysia inquired about special arrangements that might have to be made to get there and how much this would cost, and the Philippines asked whether this place was within the hamlet or within the municipality. Current users of the pill and condom were also asked in Malaysia whether their usual source of supply was in their own locality and how much the service cost.

Among the five countries which collected method-specific information on contraceptive availability, Ghana, Paraguay and Venezuela covered travel time, means of transportation and cost, while in the Philippines and Sudan, the inquiry was limited to travel time and cost. As previously mentioned, the reference in these data was to the source the respondent would use to obtain the method, except in Venezuela, where it was to the nearest source. In Ghana, if the source named was a family planning field worker or a mobile family planning clinic, the respondent was not asked the questions on travel time and means of transportation but only those on cost of the methods. The implication is that travel time would in these cases have been minimal and mechanized transportation would not have been required; the data are treated accordingly in this report.

4.2 TRAVEL TIME TO A SOURCE OF ADVICE OR SUPPLIES

Travel time is the facet of accessibility on which information exists for the most countries, and it has been a principal focus of interest in the literature on availability. The present section is concerned with travel time in relation to sources for any or all contraceptive methods, and the following one takes up travel time on a method-specific basis.

The distributions of respondents who knew a source of family planning advice and supplies by travel time to the nearest such source, including women for whom no answer was recorded, are shown in table 13 for the eight countries where the general approach was used. There is evident variation from country to country in the time required to reach the closest source known. Well over half the women questioned in Colombia, Costa Rica, Malaysia, Mexico and Venezuela said the trip would take less than half an hour, and accessibility would seem on this basis to have been a minimal problem in these countries. The proportion is barely one half in Korea, and a substantial number of Korean women also reported travel times of half an hour to an hour. In Kenya, however, a large majority of women required between half an hour and two hours to reach a source, and in Nepal travel time was usually several hours or may even have been measured in days. Although the barrier imposed by a given amount of travel time must vary in different cultural and geographic settings, it appears that women in Kenya and Nepal were at a considerable disadvantage.

As would be expected, sharp differences emerge by type of residence. Travel time is consistently longer for women living in rural than in urban areas. Nevertheless, in many rapidly growing cities in the developing world, residential patterns are poorly planned, and transportation facilities have often been unable to keep up with urban expansion. Thus at least a quarter of women living in towns and cities reported travel times of over half an hour in all countries except Colombia and Costa Rica. In the countryside this proportion is typically around two-thirds.

The level of non-response is reasonably low in all cases except Nepal, where about a quarter of the women who knew of a source could not say how long it would take to get there; the fraction is only marginally higher in rural than in urban areas. This supports the finding that travel time is a point on which women in most settings can and will easily express themselves (Rodríguez 1977: 16).

In order to examine patterns of contraceptive use by travel time to the nearest source the latter was collapsed into three broad categories (table 14). The results are generally in line with those of other studies, which have suggested that the impact of accessibility on use is rather small once a source is known (Chidambaram and Mastropoalo 1982; Pebley and Brackett 1982; Rodríguez 1978; Tsui, Hogan, Welti-Chanes and Teachman 1981). Use of efficient methods declines as the time required to reach a source lengthens in all of the eight countries excpet Costa Rica, but, on the whole, the differences are not large. The same is apt to be true of inefficient methods, but this category increases, if anything, with travel time in Kenya and does not change at all in Colombia, Mexico or Nepal. Non-use of contraception thus rises moderately but consistently with travel time in each country.

When the results are broken down by type of residence, a somewhat different picture emerges. In urban areas there is a negative association between use of efficient methods and time required to reach a source only in Kenya and Malaysia. In rural areas use of efficient methods does tend to decline as travel time increases, but less so than was observed for the total samples. The greater the travel time, the larger the proportion of women actually using efficient methods in both residence categories in Costa Rica. Thus the overall negative relationship appears to be partly attributable to the combination of greater use of efficient methods with shorter average travel times in towns and cities. The association of inefficient method use with travel time varies from country to country in rural as well as urban areas. Non-use of contraception rises with the time required to reach a source for rural residents (except in Mexico), but this relationship disappears among urban residents in most cases.

Chidambaram and Mastropoalo pointed out that tabulations such as these, where efficient methods are grouped together, may be affected by differences in motivation (spacing versus limitation) and the frequency of visits associated with individual methods (1982: 299). The effect of travel time on the overall use of efficient methods could thus be obscured by a systematic shift in the underlying mix of methods as travel time lengthens. For instance sterilization, a method that appeals to women who are determined to stop childbearing and usually involves a relatively long trip but does not necessitate repeated revisits to the source, is more widely

Table 13 Per cent distribution by travel time to the nearest source known and by type of residence: currently married women below age 45 who knew a source

	<15 mins	15–29 mins	30–59 mins	1 hr	2–3 hrs	4+ hrs	Missing data	Total
A All women								
Colombia	40	23	17	10	5	2	2	100
Costa Rica	35	27	20		17		1	100
Kenya	9	12	30	29	17	2	0	100
Korea	28	23	29	12	2	0	6	100
Malaysia[a]	31	29	26	11	3[b]	–	0	100
Mexico	29	27	25	12	4	1	2	100
Nepal		25		11	15	22	27	100
Venezuela	18[c]	49[d]	21	8	3		2	100
B Urban								
Colombia	49	26	16	6	0	0	2	100
Costa Rica	53	31	12		3		1	100
Kenya	29	24	31	10	4	2	0	100
Korea	36	26	25	5	1	0	7	100
Malaysia[a]	39	36	18	6	1[b]	–	1	100
Mexico	31	30	26	10	1	0	2	100
Nepal		52		13	2	11	22	100
Venezuela	19[c]	53[d]	20	5	1		2	100
C Rural								
Colombia	13	12	19	24	21	8	2	100
Costa Rica	15	23	29		32		0	100
Kenya	6	10	29	33	20	2	0	100
Korea	16	18	34	24	3	1	3	100
Malaysia[a]	27	25	29	14	3[b]	–	0	100
Mexico	19	18	24	20	13	3	3	100
Nepal		19		11	17	25	29	100
Venezuela	7[c]	26[d]	26	24	14		3	100

[a]Data refer to preferred source and to nearest only for those who failed to name a preferred source.
[b]120–150 min.
[c]< 10 min.
[d]10–29 min.

used in Costa Rica than in the other countries represented in table 13, and this might help to explain the apparent rise there in the use of effective methods as travel time increases. It has been anticipated that, as method-specific data become available, these issues can be clarified, and they are explored in some detail in the ensuing section.

4.3 TRAVEL TIME TO SOURCES FOR INDIVIDUAL METHODS

As previously mentioned, information on travel time to the sources to which women said they would go to obtain particular methods of contraception can be examined for five countries. Table 15 gives the distributions of the results, including missing data. It should be noted to begin with that very substantial numbers of Sudanese women appear to have made no reply to these questions; the proportions are well over one-third for all methods except the pill. There is some indication that the interviewers did not ask the question in all cases where it was appropriate, however, and thus inability or unwillingness to give an estimate was not necessarily the problem. The level of missing data is very low elsewhere.

It is not possible to calculate mean or median travel times with any accuracy because of grouping of the Paraguayan and Venezuelan data in broad categories. Using as a guide the proportion of women who lived within half an hour's travel from a source, differences among methods form a reasonably consistent pattern. This fraction is highest for the condom, except in Sudan, and lowest for female sterilization. It is always lower for

Table 14 Per cent distribution by category of method use and travel time to the nearest source known and by type of residence: currently married, exposed women below age 45 who knew a source

	< 15 minutes				15–59 minutes				1+ hours			
	Efficient	Inefficient	None	Total	Efficient	Inefficient	None	Total	Efficient	Inefficient	None	Total
A All women												
Colombia	53	16	30	100	53	16	31	100	42	16	42	100
Costa Rica	68	15	17	100	67	14	19	100	70	10	20	100
Kenya	19	1	80	100	14	5	81	100	10	5	85	100
Korea	40	13	47	100	38	11	51	100	37	7	56	100
Malaysia[a]	41	14	45	100	36	12	53	100	32	8	60	100
Mexico	56	12	32	100	52	12	36	100	48	12	39	100
Nepal					35[b]	0[b]	66[b]	100	27	1	71	100
Venezuela	55[c]	18[c]	27[c]	100	55[d]	14[d]	32[d]	100	50	10	40	100
B Urban												
Colombia	53	16	30	100	56	16	28	100	61	9	30	100
Costa Rica	69	14	17	100	71	13	16	100	74	19	6	100
Kenya	26	1	71	100	26	3	71	100	16	5	82	100
Korea	41	13	46	100	39	12	48	100	42	5	53	100
Malaysia[a]	48	18	34	100	45	15	40	100	58	15	27	100
Mexico	59	12	28	100	56	11	32	100	58	15	27	100
Nepal					20[b]	0[b]	80[b]	100	**	**		**
Venezuela	55[c]	19[c]	26[c]	100	56[d]	14[d]	30[d]	100	65	8	28	100
C Rural												
Colombia	53	18	59	100	42	15	43	100	35	18	47	100
Costa Rica	62	20	18	100	63	14	22	100	69	9	22	100
Kenya	12	1	87	100	11	5	84	100	10	5	85	100
Korea	37	12	51	100	37	9	54	100	36	7	57	100
Malaysia[a]	36	12	52	100	32	10	59	100	30	8	62	100
Mexico	39	7	53	100	35	12	53	100	35	12	53	100
Nepal					46[b]	0[b]	55[b]	100	26	1	73	100
Venezuela	**	**	**	**	41[d]	15[d]	44[d]	100	36	12	52	100

[a]Data refer to preferred source and to nearest only for those who failed to name a preferred source.
[b]< 60 min.
[c]< 10 min.
[d]10–59 min.
NOTE: ** indicates less than 20 cases in the base.

Table 15 Per cent distribution by travel time to the source to which the respondent would go for the pill, injection, IUD, other female scientific methods, condom and female sterilization and by type of residence: currently married women below age 45 who knew a source for the method

	Ghana	Paraguay	Philippines	Sudan (N)	Venezuela[a]
Pill					
All women					
No travel	25	–	–	–	–
<15 mins	16	28	51	16	57
15–29 mins	19	18	18	27	21
30–59 mins	17	19	17	22	13
1 hour	12	19	9	12	6
2–3 hours	8	15	4	8	2
4+ hours	2		1		
Missing data	1	0	0	16	1
Total	100	100	100	100	100
Urban					
No travel	19	–	–	–	–
<15 mins	29	54	74	26	63
15–29 mins	29	24	17	32	21
30–59 mins	16	13	7	20	11
1 hour	4	6	1	6	3
2–3 hours	2	3	1	1	1
4+ hours	0		0		
Missing data	0	0	0	15	1
Total	100	100	100	100	100
Rural					
No travel	29	–	–	–	–
<15 mins	7	6	37	3	23
15–29 mins	11	13	18	21	20
30–59 mins	18	24	22	24	24
1 hour	18	30	14	20	18
2–3 hours	13	26	7	16	11
4+ hours	3		1		
Missing data	2	0	0	17	4
Total	100	100	100	100	100
Injection					
All women					
No travel	15	–	–	–	–
<15 mins	20	–	–	11	–
15–29 mins	20	–	–	19	–
30–59 mins	18	–	–	20	–
1 hour	14	–	–	6	–
2–3 hours	9	–	–	6	–
4+ hours	3	–	–		–
Missing data	1	–	–	38	–
Total	100	–	–	100	–

[*Table continues*]

Table 15 (*cont*)

	Ghana	Paraguay	Philippines	Sudan (N)	Venezuela[a]
Injection (*continued*)					
Urban					
No travel	10	–	–	–	–
<15 mins	33	–	–	13	–
15–29 mins	28	–	–	26	–
30–59 mins	22	–	–	23	–
1 hour	6	–	–	5	–
2–3 hours	1	–	–	1	–
4+ hours	1	–	–		–
Missing data	0	–	–	32	–
Total	100	–	–	100	–
Rural					
No travel	19	–	–	–	–
<15 mins	8	–	–	8	–
15–29 mins	12	–	–	9	–
30–59 mins	15	–	–	17	–
1 hour	22	–	–	8	–
2–3 hours	17	–	–	14	–
4+ hours	5	–	–		–
Missing data	2	–	–	46	–
Total	100	–	–	100	–
IUD					
All women					
No travel	13	–	–	–	–
<15 mins	19	13	42	11	29
15–29 mins	21	20	19	18	26
30–59 mins	18	26	20	20	25
1 hour	15	22	12	6	14
2–3 hours	11	19	5	5	5
4+ hours	2		1		
Missing data	1	0	0	40	1
Total	100	100	100	100	100
Urban					
No travel	11	–	–	–	–
<15 mins	33	22	62	13	32
15–29 mins	30	30	20	24	28
30–59 mins	17	30	13	19	25
1 hour	5	12	3	3	11
2–3 hours	3	6	1	3	3
4+ hours	0		0		1
Missing data	1	0	0	38	1
Total	100	100	100	100	100

[*Table continues*]

Table 15 (*cont*)

	Ghana	Paraguay	Philippines	Sudan (N)	Venezuela[a]
IUD (*continued*)					
Rural					
No travel	16	–	–	–	–
<15 mins	6	3	30	6	10
15–29 mins	12	10	19	6	16
30–59 mins	18	21	24	22	25
1 hour	24	33	17	12	28
2–3 hours	18	} 33	7	} 9	} 19
4+ hours	4		2		
Missing data	2	0	1	44	1
Total	100	100	100	100	100
Other fem. sci. methods					
All women					
No travel	33	–	–	–	–
<15 mins	18	–	–	–	–
15–29 mins	20	–	–	–	–
30–59 mins	14	–	–	–	–
1 hour	7	–	–	–	–
2–3 hours	5	–	–	–	–
4+ hours	2	–	–	–	–
Missing data	1	–	–	–	–
Total	100	–	–	–	–
Urban					
No travel	26	–	–	–	–
<15 mins	28	–	–	–	–
15–29 mins	25	–	–	–	–
30–59 mins	16	–	–	–	–
1 hour	3	–	–	–	–
2–3 hours	1	–	–	–	–
4+ hours	0	–	–	–	–
Missing data	0	–	–	–	–
Total	100	–	–	–	–
Rural					
No travel	40	–	–	–	–
<15 mins	8	–	–	–	–
15–29 mins	14	–	–	–	–
30–59 mins	13	–	–	–	–
1 hour	11	–	–	–	–
2–3 hours	9	–	–	–	–
4+ hours	4	–	–	–	–
Missing data	2	–	–	–	–
Total	100	–	–	–	–

[*Table continues*]

Table 15 (*cont*)

	Ghana	Paraguay	Philippines	Sudan (N)	Venezuela[a]
Condom					
All women					
No travel	39	–	–	–	–
<15 mins	20	39	52	22	68
15–29 mins	14	17	18	21	19
30–59 mins	13	16	16	8	8
1 hour	7	16	9	6	3
2–3 hours	5	11	4	1	1
4+ hours	1		1		
Missing data	1	0	0	42	1
Total	100	100	100	100	100
Urban					
No travel	29	–	–	–	–
<15 mins	33	61	74	25	73
15–29 mins	20	21	17	21	18
30–59 mins	14	10	7	7	6
1 hour	3	4	1	4	1
2–3 hours	1	2	0	0	0
4+ hours	0		0		
Missing data	1	0	0	42	1
Total	100	100	100	100	100
Rural					
No travel	48	–	–	–	–
<15 mins	8	8	39	**	34
15–29 mins	9	12	18	**	22
30–59 mins	12	25	22	**	21
1 hour	11	31	13	**	12
2–3 hours	9	24	6	**	9
4+ hours	2		1		
Missing data	1	0	0	**	2
Total	100	100	100	**	100
Female sterilization					
All women					
No travel	1	–	–	–	–
<15 mins	14	9	20	5	19
15–29 mins	16	18	17	13	20
30–59 mins	19	25	25	21	27
1 hour	21	20	20	8	22
2–3 hours	19	27	12	12	10
4+ hours	6		4		
Missing data	3	1	2	42	3
Total	100	100	100	100	100

[*Table continues*]

Table 15 (*cont*)

	Ghana	Paraguay	Philippines	Sudan (N)	Venezuela[a]
Female sterilization (*continued*)					
Urban					
No travel	1	–	–	–	–
< 15 mins	26	14	32	8	21
15–29 mins	27	28	22	20	22
30–59 mins	27	35	27	28	28
1 hour	11	11	12	5	20
2–3 hours	5	12	5	1	6
4+ hours	1		1		
Missing data	2	1	1	39	3
Total	100	100	100	100	100
Rural					
No travel	1	–	–	–	–
< 15 mins	5	2	12	2	7
15–29 mins	8	5	13	4	10
30–59 mins	14	14	24	12	17
1 hour	28	31	26	12	33
2–3 hours	29	46	17	25	29
4+ hours	10		6		
Missing data	4	2	2	45	4
Total	100	100	100	100	100

[a]Data refer to the nearest source for each method.
NOTE: – indicates information not available.

the IUD than for the pill. Injection appears by this measure marginally more accessible than the IUD in Ghana and Sudan. In Ghana other female scientific methods are only a little less accessible than the condom. The relatively low proportions of Paraguayan women who could reach a source for any method within half an hour are somewhat surprising and the comparatively high proportions shown for all methods other than female sterilization in Ghana equally so. The latter can be attributed largely to the 'no travel' category which represents essentially those women who mentioned family planning field workers or mobile clinics as the type of source to which they would go and were not asked directly about travel time. Thus the provision of such services appears to have substantially improved the situation in Ghana, at least with regard to this particular dimension of accessibility.

As was true of sources of advice and supplies in general, the travel time distributions differ strikingly by type of residence. It would typically have taken much longer for rural than for urban residents to reach a source for any given method. In Paraguay the proportion of urban women living within half an hour of a source for female sterilization is twice as high as that of rural residents for the condom. Mobile services, which are more prevalent in the rural than in the urban areas of Ghana, nevertheless reduce the disparity markedly for that country.

The number of methods for which sources were known to individual respondents was discussed in section 3.5. A further indicator of the overlapping among methods is the extent to which women who knew where to obtain more than one method perceived the accessibility of these places to be similar. Table 16 shows the proportions who reported the same travel time to all such places. Again, these tabulations are confined to the four methods on which data were collected in each of the five countries. Giving the same estimate of travel time for sources of more than one method could mean that the supply points are in fact the same place, although this is not necessarily the case. The grouping of the underlying data for Paraguay and Venezuela artificially increases the likelihood of obtaining a match to some degree for those countries.

Nearly two-thirds of all women who knew where to find more than one method reported that it would take the same time to get to all these places in Ghana, and just over half gave about the same time in Paraguay. For the other three countries the proportions are around one-third. As would be expected, ths fraction declines as the number of methods for which sources were known increases, but even for four methods, at least a quarter of the respondents gave the same (or similar) times to all sources. In general there seems to be less diversity of source accessibility in rural than in urban areas, and the contrast appears very sharply in Paraguay, though in the Philippines the reverse is true. To obtain a complete

Table 16 Per cent reporting the same travel time to sources for all methods by number of methods for which sources were known and by type of residence: currently married women below age 45 who knew sources for more than one method

	Ghana	Paraguay	Philippines	Sudan (N)	Venezuela
All women					
2 methods	76	74	59	48	59
3 methods	59	57	52	30	36
4 methods	45	37	26	**	24
2–4 methods	64	54	33	41	31
Urban					
2 methods	75	59	82	36	58
3 methods	56	44	61	35	32
4 methods	42	28	31	**	23
2–4 methods	60	39	37	35	29
Rural					
2 methods	76	80	51	64	60
3 methods	61	68	49	**	49
4 methods	50	55	22	**	34
2–4 methods	67	70	31	50	44

NOTE: ** indicates less than 20 cases in the base.

picture of the reporting of the same travel time to sources for multiple methods, it would be necessary to take into account women who knew sources for three or four methods and gave identical travel times to some but not all of them. But even without this detail it is evident that differences in method accessibility as measured in this way can have only a limited impact on the choice among methods, especially in Ghana and rural Paraguay.

The central issue concerning the relationship of travel time to contraceptive use for individual methods is addressed in table 17. Summary distributions of exposed women who knew a source for the method in question by use status are shown for broad categories of travel time. As in table 9, use is classified so that the method in question is distinguished from other efficient methods. In spite of variation by method in the distributions of reported travel times (table 15), the latter have been grouped in the same way for all methods in order to establish a common basis for comparison of the relationships to use. For Ghana the 'no travel' category has been combined with travel times of less than 15 minutes.

It stands to reason that, taken in isolation from one another, use of each method would decline as the accessibility of a source for that method declines. This might be less true of the IUD and especially of sterilization, neither of which involves continual resupply, than of methods like the pill and the condom. However, the results in table 17 do not conform very closely to this pattern.

On the whole the proportions of women using each of the given methods do not change very much as travel time increases from less than 15 minutes to an hour or more. There is reasonably clear evidence of decline only for the pill in Paraguay, Philippines and Sudan; for injection in Sudan, for the IUD in Paraguay, for the condom in the Philippines and for the female sterilization in Venezuela. The proportions using female sterilization rise with travel time in Paraguay. Nevertheless longer travel time does appear to depress use of the pill somewhat more consistently and use of female sterilization perhaps less consistently than the other methods. In the case of the pill the principal drop occurs when it comes to journeys of one hour or more. The expected relationship does not emerge for any method in Ghana.

The use of other efficient methods tends to decline more regularly than use of the method in question as travel time to a source for that method increases in all the countries except Ghana. As would be anticipated the use of inefficient methods typically exhibits no relationship to travel time to a source for a given efficient method, and the residual category, consisting of women who were not using any method at all, almost always rises significantly as accessibility declines, except in Ghana.

Thus the availability of method-specific information does not appear to strengthen appreciably the argument that source accessibility affects contraceptive use once women know where to go for assistance. However, there are at least four reasons why relationships that do exist may not be apparent in superficial comparisons of this sort. The first is that the data collected on travel time may not reflect closely enough the effort required to reach the method source. The second is that other facets of accessibility could override the effect of travel time. The third is that, even in these data, the methods are not observed in isolation from one another. The last is that the expected effects may be compounded with demographic and socio-economic factors. These possibilities are reviewed in turn.

One of the concepts implicit in one-way travel time as a

Table 17 Per cent distribution by current contraceptive use and by travel time to the source to which the respondent would go for the pill, injection, IUD, other female scientific methods, condom and female sterilization: currently married, exposed women below age 45 who knew a source for the method

	Ghana	Paraguay	Philippines	Sudan (N)[a]	Venezuela[b]
Pill					
< 15 minutes					
Using pill	6	20	9	29	21
Using other efficient methods	9	22	22	3	31
Using inefficient methods	6	19	30	2	17
Not using	79	39	39	66	31
Total	100	100	100	100	100
15–59 minutes					
Using pill	13	20	8	22	21
Using other efficient methods	9	20	18	3	28
Using inefficient methods	4	17	30	3	12
Not using	74	44	45	72	38
Total	100	100	100	100	100
1+ hours					
Using pill	7	16	5	15	20
Using other efficient methods	7	10	11	2	24
Using inefficient methods	6	16	29	7	8
Not using	80	57	55	75	48
Total	100	100	100	100	100
Injection					
< 15 minutes					
Using injection	1	–	–	7	–
Using other efficient methods	15	–	–	25	–
Using inefficient methods	8	–	–	7	–
Not using	76	–	–	61	–
Total	100	–	–	100	–
15–59 minutes					
Using injection	0	–	–	2	–
Using other efficient methods	25	–	–	28	–
Using inefficient methods	3	–	–	2	–
Not using	72	–	–	67	–
Total	100	–	–	100	–
1+ hours					
Using injection	2	–	–	**	–
Using other efficient methods	7	–	–	**	–
Using inefficient methods	4	–	–	**	–
Not using	87	–	–	**	–
Total	100	–	–	**	–

[*Table continues*]

Table 17 (*cont*)

	Ghana	Paraguay	Philippines	Sudan (N)[a]	Venezuela[b]
IUD					
< 15 minutes					
Using IUD	1	12	5	**	13
Using other efficient methods	15	31	26	**	45
Using inefficient methods	5	20	32	**	15
Not using	79	37	38	**	27
Total	100	100	100	**	100
15–59 minutes					
Using IUD	3	12	4	3	12
Using other efficient methods	21	32	22	0	37
Using inefficient methods	5	19	30	30	16
Not using	71	37	44	68	35
Total	100	100	100	100	100
1+ hours					
Using IUD	1	7	3	**	12
Using other efficient methods	13	25	18	**	29
Using inefficient methods	6	19	30	**	12
Not using	80	49	49	**	48
Total	100	100	100	**	100
Other fem. sci. methods					
< 15 minutes					
Using other fem. sci. methods	6	–	–	–	–
Using other efficient methods	11	–	–	–	–
Using inefficient methods	7	–	–	–	–
Not using	76	–	–	–	–
Total	100	–	–	–	–
15–59 minutes					
Using other fem. sci. methods	16	–	–	–	–
Using other efficient methods	17	–	–	–	–
Using inefficient methods	6	–	–	–	–
Not using	62	–	–	–	–
Total	100	–	–	–	–
1+ hours					
Using other fem. sci. methods	18	–	–	–	–
Using other efficient methods	10	–	–	–	–
Using inefficient methods	6	–	–	–	–
Not using	66	–	–	–	–
Total	100	–	–	–	–
Condom					
< 15 minutes					
Using condom	3	4	8	**	9
Using other efficient methods	14	43	23	**	47
Using inefficient methods	7	22	30	**	17
Not using	77	31	38	**	27
Total	100	100	100	**	100

[*Table continues*]

Table 17 (*cont*)

	Ghana	Paraguay	Philippines	Sudan (N)[a]	Venezuela[b]
Condom (*continued*)					
15–59 minutes					
Using condom	2	5	5	**	7
Using other efficient methods	30	41	20	**	42
Using inefficient methods	7	20	31	**	12
Not using	61	34	44	**	39
Total	100	100	100	**	100
1+ hours					
Using condom	3	3	4	**	6
Using other efficient methods	19	32	11	**	31
Using inefficient methods	3	21	31	**	8
Not using	76	45	55	**	55
Total	100	100	100	**	100
Female sterilization					
< 15 minutes					
Sterilized	2	2	9	–	16
Using other efficient methods	20	44	24	–	41
Using inefficient methods	8	17	32	–	14
Not using	70	38	35	–	29
Total	100	100	100	–	100
15–59 minutes					
Sterilized	5	5	9	–	11
Using other efficient methods	18	44	21	–	39
Using inefficient methods	10	25	31	–	15
Not using	67	26	38	–	35
Total	100	100	100	–	100
1+ hours					
Sterilized	2	6	10	–	9
Using other efficient methods	8	30	17	–	35
Using inefficient methods	9	21	30	–	14
Not using	82	43	42	–	42
Total	100	100	100	–	100

[a]Sudanese women who had had contraceptive sterilization operations were not asked the questions on knowledge of method sources.
[b]Data refer to the nearest source for each method.
NOTE: ** indicates less than 20 cases in the base; – indicates information not available.

measure of accessibility is that of distance. The extent to which distance *per se* is relevant to the decision-making process of individual women is questionable, however, (see section 4.4 below). Alternatively, this variable can be thought of as measuring the time involved in obtaining contraception. Whether or not it is true that people living in developing societies tend to be less 'time-conscious' than those in industrialized societies, one-way travel time is not likely to be a good indicator of the time expended. On the one hand, the journey may often be one that is made regularly for other purposes, such as going to market, so that virtually no additional time is required to include a call at a contraceptive outlet. On the other hand, unless the service is efficient once the outlet has been reached, travel time may be only a minor part of the total time outlay.

The peculiar distributions for Ghana bring to mind the potential role of considerations beyond the travel time required to reach an outlet. It seemed possible that the very low proportions shown as using most of the methods at travel times of less than 15 minutes might be due to the inclusion in that category of women who gave family planning workers or mobile clinics as the type of source they would use and hence were not asked the question on

travel time. Recalculation of the distributions with this group as a separate category showed that women who would use mobile services were typically the least likely to be using the method in question. This suggests either that the assumption of no travel for these women is unrealistic or that such services were unsatisfactory in other respects. In terms of accessibility, for instance, the frequency and regularity of the mobile service presence would be likely to be critical. Even among women who were asked directly about travel time, however, the proportion using the method in question tended to be lower when the trip involved was less than 15 minutes than when it was 15 to 29 minutes. Again neighbourhood availability may be associated with service characteristics which deter use, such as insufficient opening hours, higher fees or unskilled personnel. Effects of this kind are likely, in fact, to be very widespread.

If all efficient methods are taken together in table 17, a negative impact of increasing travel time on their use is fairly evident except in Ghana. Since many women know sources for more than one method, travel time inevitably influences the choice among methods as well as whether or not a given method is used. Hence trade-off among methods remains a potentially disturbing factor even in these method-specific data. For instance, a rise in the use of a given method as travel time increases could occur, even in the presence of a negative effect of travel time, under the following conditions: most women who know of a nearby place where that method is available can also get another method there and choose to use the latter method; meanwhile, the method in question is the preferred or only choice of women who are confined to sources that are further away. Such could have been the situation for sterilization in Paraguay. This topic is pursued in the multivariate analysis discussed below.

The use of contraception is known to be related to a variety of characteristics of individual women, and there is therefore a real likelihood that the association of use to travel time could be obscured by extraneous factors. In order to explore this possibility, a multivariate analysis of method use was undertaken in which both travel time to a source for the given method and a variable designed to represent the availability of other methods were included. The other factors considered were type of residence, number of years of education, and number of living children. Since each of the alternative use statuses specified in table 17 is relevant in one way or another to the issues at hand, the dependent variable for the analysis took the form of a nominal variable composed of these four categories (use of the method in question, use of another efficient method, use of an inefficient method and non-use). The relationships between one or more explanatory variables and a polytomous dependent variable of this sort can be studied using a multinomial logistic model. An explanation of these procedures, a description of the model used, and the complete results of the analysis are given in appendix A. The discussion here is confined to a summary of the findings regarding the effects of contraceptive availability.

Very little evidence emerged that longer travel time to a source for a given method constituted a deterrent to use of that method. The only clear-cut instance of such an effect was that of the condom in the Philippines: women living 15 to 29 minutes away from a source of the condom were about two-thirds as likely to be using the condom as opposed to either another efficient method, an inefficient method or no method at all than women living less than 15 minutes away, and women living half an hour or more away were only a little more than half as likely as those living nearest by to be using it. Otherwise there is little perceptible relationship of method use to travel time.

The variable representing the availability of other methods took into account whether the respondent knew a source for any efficient method other than the one under consideration, and if so, how much travel time was required to get to the nearest such place relative to a source for the method in question. Lack of availability of alternatives was generally associated with a greater likelihood of using the pill as opposed to another efficient method, and strongly so in the Philippines and Venezuela. In most cases it was conducive not only to use of the pill as opposed to another efficient method but often also to use of the pill as opposed to inefficient methods or no method at all. This pattern was apparent as well for the condom in the Philippines and to some extent in other countries. On the other hand, lack of availability of alternatives was associated with a decreased liklihood of having undergone female sterilization in the Philippines, possibly reflecting the fact that sterilization is an option only for women who want no more children and thus does not compete in the same sense as other methods.

In sum, the results of the multivariate analysis do not support the notion that significant effects of the accessibility of a given method on the use of that method are hidden by socio-economic or demographic factors. There does appear to be reason to believe that the availability of alternative methods affects contraceptive behaviour, especially the use of the pill. The impact of residence and education on use was clearly evident, and the relationships observed were very much in line with the accepted view of their respective roles. The marked tendency for the Philippines results to be more conclusive than those for other countries may be partly a function of large sample size.

4.4 DISTANCE

As was found in the WFS pilot survey, non-response to the direct question on distance to the nearest source of contraceptive assistance was very high in the four cases where this item was included in the national surveys, although respondents who failed to answer the question do not actually outnumber those who did answer in any of the countries as a whole (table 18). The implication is that individual women are not apt to think in terms of physical distance. The results for women who answered the question are nevertheless consistent with those on travel time to the nearest source known (table 13), and they bring out a few further details. Rural residents typically report that they have greater distances to go for contraceptive services than urban residents. Nepalese women were much more apt to give distances over six

Table 18 Per cent distribution by distance to nearest source known and by type of residence: currently married women below age 45 who knew a source

	<1 km	1–3 km	4–6 km	7–9 km	10+ km	Missing data	Total
A All women							
Colombia	41	23	6	3	10	17	100
Costa Rica	23	25	5	5		43	100
Nepal	23		17	3	9	48	100
Venezuela	33[a]		22		5	40	100
B Urban							
Colombia	51	25	5	3	5	11	100
Costa Rica	36	34	4	2		24	100
Nepal	21		2	0	0	77	100
Venezuela	38[a]		23		3	37	100
C Rural							
Colombia	11	14	9	4	27	35	100
Costa Rica	8	16	5	7		63	100
Nepal	23		4	20	10	43	100
Venezuela	6[a]		16		18	60	100

[a]Category defined as <16 blocks.

Table 19 Per cent distribution by means of transportation to nearest source known and by type of residence: currently married women below age 45 who knew a source

	Foot	Bus	Taxi, car	Other	Missing data	Total
A All women						
Kenya	48	50	–	1	0	100
Korea	59	36	0	1	5	100
Malaysia[a]	26	39	15	20[b]	0	100
B Urban						
Kenya	32	66	–	2	0	100
Korea	61	33	0	0	6	100
Malaysia[a]	30	28	20	20[b]	1	100
C Rural						
Kenya	53	46	–	1	0	100
Korea	55	40	0	2	3	100
Malaysia[a]	25	44	12	19[b]	0	100

[a]Data refer to preferred source and to nearest only for those who failed to name a preferred source.
[b]Includes transportation by bicycle.
NOTE: – indicates information not available.

kilometres than women in the Latin American countries, but the breakdown by type of residence shows that this is the case only for rural areas. A large proportion of rural Colombian and Venezuelan women also report relatively long distances, although that is not true of travel time, implying that better means of transportation may be available in Colombia and Venezuela than in Nepal.

4.5 MEANS OF TRANSPORTATION

The distributions of the responses on the means of transportation the respondents reported that they would use to get to the nearest source of contraceptive assistance are shown in table 19. The level of non-response on this item is very low. Foot and bus are the principal means mentioned in both urban and rural areas. About two-thirds of the 'other' category for Malaysia consisted of women who reported that they would go by bicycle.

Table 20 gives comparable distributions for means of transportation to the sources to which the respondents would go to obtain specific methods of contraception. On the whole there are few missing data, although the proportions of respondents who failed to answer the question for female sterilization in Ghana and Venezuela are not entirely inconsequential. For Ghana the category designated as 'no transportation' refers to women who said they would use either a family planning worker or a mobile clinic; the likelihood appears to have been that these women would go to such a source on foot. Again foot and bus predominate, but in contrast to the tabulation for general sources, travel by foot was clearly cited more often in urban than in rural areas, while the reverse is true of bus transportation. Walking appears to have been least common as a means of getting to a source for female sterilization. Thus, both by residence and by method, longer travel time was likely to have been associated with some transportation expense as well.

Although means of transportation is evidently a question that can be answered readily, it is not without some ambiguity. The chief problem concerns the use of multiple means of transportation (Lewis and Novak 1982: 248–249). For example, women who said they would go by bus would almost certainly have had to walk some part of the way at one or both ends of the trip.

4.6 COST OF TRANSPORTATION

Data on the one-way cost of mechanized transportation for Malaysia are shown in table 21. Not surprisingly, the raw responses are highly heaped on numbers ending in 0 and 5, but the outstanding characteristic of the distributions, which emerges clearly in the grouped data, is their considerable spread. The cost of mechanized transportation seems to have been more variable on the whole in urban than in rural areas.

4.7 COST OF METHODS

Turning lastly to the estimated cost of the various methods, the most prominent feature of the results in

Table 20 Per cent distribution by means of transportation to the source to which the respondent would go for the pill, injection, IUD, other female scientific methods, condom and female sterilization and by type of residence: currently married women below age 45 who knew a source for the method

	Ghana	Paraguay	Venezuela[a]
Pill			
All women			
No transportation	25	–	–
Foot	24	44	59
Bus	19	48	14
Taxi, car	13	3	25
Other	18	5	0
Missing data	1	1	1
Total	100	100	100
Urban			
No transportation	20	–	–
Foot	39	64	66
Bus	13	30	13
Taxi, car	21	4	20
Other	6	2	0
Missing data	1	0	1
Total	100	100	100
Rural			
No transportation	30	–	–
Foot	13	26	17
Bus	22	63	22
Taxi, car	6	2	56
Other	27	7	1
Missing data	2	1	4
Total	100	100	100
Injection			
All women			
No transportation	15	–	–
Foot	25	–	–
Bus	21	–	–
Taxi, car	22	–	–
Other	16	–	–
Missing data	2	–	–
Total	100		–
Urban			
No transportation	10	–	–
Foot	36	–	–
Bus	15	–	–
Taxi, car	31	–	–
Other	6	–	–
Missing data	1	–	–
Total	100	–	–

[*Table continues*]

Table 20 (*cont*)

	Ghana	Paraguay	Venezuela[a]
Injection (*continued*)			
Rural			
No transportation	19	–	–
Foot	15	–	–
Bus	26	–	–
Taxi, car	13	–	–
Other	25	–	–
Missing data	2	–	–
Total	100	–	–
IUD			
All women			
No transportation	13	–	–
Foot	21	24	26
Bus	23	68	28
Taxi, car	17	5	44
Other	23	3	0
Missing data	2	0	1
Total	100	100	100
Urban			
No transportation	11	–	–
Foot	33	30	30
Bus	17	60	28
Taxi, car	27	8	41
Other	10	1	0
Missing data	2	0	1
Total	100	100	100
Rural			
No transportation	15	–	–
Foot	11	16	6
Bus	29	77	27
Taxi, car	8	2	62
Other	35	5	3
Missing data	2	0	1
Total	100	100	100
Other fem. sci. methods			
All women			
No transportation	33	–	–
Foot	24	–	–
Bus	12	–	–
Taxi, car	15	–	–
Other	14	–	–
Missing data	2	–	–
Total	100		
Urban			
No transportation	26	–	–
Foot	35	–	–
Bus	10	–	–

Table 20 (*cont*)

	Ghana	Paraguay	Venezuela[a]
Urban (*continued*)			
Taxi, car	23	–	–
Other	4	–	–
Missing data	1	–	–
Total	100		
Rural			
No transportation	40	–	–
Foot	14	–	–
Bus	14	–	–
Taxi, car	6	–	–
Other	24	–	–
Missing data	2	–	–
Total	100	–	–
Condom			
All women			
No transportation	39	–	–
Foot	23	50	71
Bus	13	40	9
Taxi, car	13	5	19
Other	10	4	0
Missing data	2	1	1
Total	100	100	100
Urban			
No transportation	30	–	–
Foot	34	70	77
Bus	10	22	8
Taxi, car	21	6	14
Other	3	1	0
Missing data	2	1	1
Total	100	100	100
Rural			
No transportation	48	–	–
Foot	12	24	24
Bus	16	65	14
Taxi, car	6	4	59
Other	18	7	1
Missing data	1	1	2
Total	100	100	100
Female sterilization			
All women			
No transportation	1	–	–
Foot	15	12	15
Bus	34	75	29
Taxi, car	26	9	52
Other	20	3	1
Missing data	4	1	3
Total	100	100	100

[*Table continues*]

Table 20 (*cont*)

	Ghana	Paraguay	Venezuela[a]
Female sterilization (*continued*)			
Urban			
No transportation	1	–	–
Foot	24	15	18
Bus	24	71	30
Taxi, car	38	12	50
Other	10	2	0
Missing data	3	1	2
Total	100	100	100
Rural			
No transportation	1	–	–
Foot	8	10	2
Bus	42	79	26
Taxi, car	17	4	66
Other	27	6	3
Missing data	5	1	4
Total	100	100	100

[a]Data refer to the nearest source for each method.
NOTE: – indicates information not available.

table 22 is the very high level of non-response. At least a quarter of the women who knew a source for a given method did not say how much the method might cost there, and in Ghana and Sudan, the proportion is apt to be over 90 per cent. Thus, the analytical value of the information is open to question.

There are a number of other problems associated with the use of these data. They have sometimes been grouped in ways that detract significantly from their usefulness. For example, in the case of Paraguay two-thirds of the responses for all methods except the condom fall into just one category. While appropriate to the large differences in cost between methods, the use of a unique coding scheme for each method, as in Paraguay and the Philippines, interferes with comparisons between methods. Moreover costs are necessarily based on a given unit purchased, but these quantities imply contraceptive coverage for widely varying and, in some cases, quite indefinite periods of time, which also complicates the comparison of one method with another. Yet another question is that of free services; this arises more in some countries and also in relation to certain methods than others. When a method is theoretically available without charge, but an estimate of cost is given, it is uncertain whether the respondent did not know it was free, whether she reported what she thought the price would be if she did have to pay, or whether there was in fact a charge at the place to which

Table 21 Per cent distribution in Malaysia[a] by cost of transportation to nearest source known and by type of residence: currently married women below age 45 who knew a source and gave a means of transportation to source other than foot or bicycle

	M$ <13	M$ 13–22	M$ 23–47	M$ 48–72	M$ 73–147	M$ 147+	Missing data	Total
All women	24	23	22	13	8	8	2	100
Urban	29	18	18	12	10	11	3	100
Rural	22	26	24	14	8	6	1	100

[a]Data refer to preferred source and to nearest source only for those who failed to name a preferred source; 1 US$ = approximately M$2.45.

Table 22 Cost of the pill, injection, IUD, other female scientific methods, condom and female sterilization at the source to which the respondent would go, by type of residence: currently married women below aged 45 who knew a source for the method (per cent distribution)

Ghana: cedi[a]	<1	1–2	3–4	5–9	10+	Missing data	Total
Pill: per cycle							
All women	20	21	2	1	0	55	100
Urban	23	22	2	2	0	51	100
Rural	18	20	1	1	0	59	100
Injection: per injection							
All women	0	4	3	4	2	87	100
Urban	0	7	3	5	2	84	100
Rural	0	2	3	3	1	90	100

[*Table continues*]

Table 22 (*cont*)

Ghana: cedi[a] (*continued*)	<1	1–2	3–4	5–9	10+	Missing data	Total
IUD: per insertion							
All women	1	7	1	3	1	87	100
Urban	1	11	1	4	0	84	100
Rural	1	5	2	1	1	90	100
Other fem. sci. methods: per unit, packet							
All women	6	27	3	6	0	58	100
Urban	6	29	3	4	0	58	100
Rural	6	24	3	7	0	59	100
Condom: per packet of 3							
All women	28	2	0	0	0	70	100
Urban	30	2	0	0	0	68	100
Rural	26	2	0	0	0	72	100
Fem. ster.: per operation							
All women	0	1	0	1	2	96	100
Urban	0	1	0	1	2	96	100
Rural	0	0	0	1	2	96	100

Paraguay: guaranies[b]	Free	<300	300–499	500–699	700+	Missing data	Total
Pill: per cycle							
All women	1	63	14	4	2	18	100
Urban	1	61	17	3	2	17	100
Rural	1	64	11	4	2	18	100

	Free	<4500	4500–5999	6000–7999	8000+	Missing data	Total
IUD: per insertion							
All women	1	65	3	1	1	29	100
Urban	2	64	3	1	2	28	100
Rural	1	65	3	2	1	29	100

	Free	<60	60–149	150+	Missing data	Total
Condom: per unit						
All women	0	26	24	20	30	100
Urban	0	25	24	18	32	100
Rural	0	27	23	23	27	100

[*Table continues*]

Table 22 (*cont*)

Paraguay: guaranies[b] (*continued*)	Free	< 50 000	50 000–69 999	70 000+		Missing data	Total
Fem. ster. per operation							
All women	1	66	4	2		26	100
Urban	2	62	5	3		28	100
Rural	1	72	2	1		24	100
Philippines: pesos[c]	Free	<2	3–4	5+	Donation	Missing data	Total
Pill: per cycle							
All women	55	4	2	2	15	23	100
Urban	53	4	4	3	16	20	100
Rural	56	4	1	1	14	25	100
	Free	⩽50	>50		Donation	Missing data	Total
IUD: per insertion							
All women	42	3	1		11	44	100
Urban	44	4	1		14	37	100
Rural	40	2	0		9	48	100
	Free	⩽1	>1		Donation	Missing data	Total
Condom: per unit							
All women	62	5	2		8	23	100
Urban	58	7	3		9	22	100
Rural	65	3	1		8	23	100
	Free	⩽100	>100		Donation	Missing data	Total
Fem. ster.: per operation							
All women	23	5	3		10	59	100
Urban	28	4	2		13	53	100
Rural	20	5	3		9	63	100
Sudan (N): piasters[d]	0	1–24	25–49	50–99	100+	Missing data	Total
Pill: per cycle							
All women	1	8	13	29	8	42	100
Urban	2	12	12	32	6	35	100
Rural	1	4	13	23	10	50	100
Injection: per unit							
All women	2	7	2	4	23	64	100
Urban	2	8	2	5	19	65	100
Rural	2	6	0	3	27	62	100

[*Table continues*]

Table 22 (*cont*)

Sudan (N): piasters[d]	0	1–24	25–49	50–99	100+	Missing data	Total
IUD: per insertion							
All women	3	13	1	2	6	75	100
Urban	3	16	1	1	7	72	100
Rural	3	6	0	3	3	84	100
Condom: per unit							
All women	0	5	0	5	6	86	100
Urban	0	4	0	4	10	82	100
Rural	**	**	**	**	**	**	**
Fem. ster.: per operation							
All women	9	6	2	0	3	81	100
Urban	10	4	2	1	1	83	100
Rural	8	9	0	3	2	79	100
Venezuela: bolivars[e]	Free	⩽6	7–13	14–24	25+	Missing data	Total
Pill: per cycle							
All women	26	0	32	3	0	38	100
Urban	25	0	34	3	0	38	100
Rural	30	1	24	2	0	42	100
IUD: per insertion							
All women	62	0	1	1	4	33	100
Urban	62	0	1	1	4	32	100
Rural	61	0	1	1	1	36	100
Condom: per packet							
All women	2	8	3	0	0	87	100
Urban	2	8	3	0	0	86	100
Rural	2	9	2	0	0	88	100
Fem. ster.: per operation							
All women	49	1	8	2	0	40	100
Urban	48	1	9	2	0	40	100
Rural	54	0	6	0	0	40	100

[a] 1 US$ = approximately 2.75 cedi.
[b] 1 US$ = approximately 126G.
[c] 1 US$ = approximately 7.5 pesos.
[d] 1 US$ = approximately 42 piasters.
[e] 1 US$ = approximately 4.28 BS; data refer to the nearest source for each method.
NOTE: ** indicates less than 20 cases in the base.

she thought of going. The 'donation' category for the Philippines represents a similar problem; the amount of the donation was often specified, but in many cases it was not. Pebley and Brackett (1982: 91) have also noted for the Philippines a tendency for women who were using each method to report higher costs than those who were not, a type of bias that could be present in other countries. Finally the comparison of costs across countries is at best very difficult.

The price of contraceptive services is nevertheless an important element in their accessibility. It is clear even from these data that the differences from method to method in the range of possible expenses are indeed very substantial.

4.8 SUMMARY

Five aspects of service accessibility are documented in the WFS surveys: travel time to a source, distance to a

source, means of transportation to a source, cost of transportation to a source and cost of service.

Travel time has received the most attention, largely because the response to this question is almost always reasonably complete, and it is numeric in form. Most of the surveys which included a question on the respondent's knowledge of a source of contraceptive advice or supplies also provided information on travel time to the nearest such source, and all the surveys which inquired about the sources the respondent would use to obtain individual methods of contraception proceeded to ask about the travel time to these sources. There is considerable variation by country in the range and distribution of times required to reach sources that were known to the respondent, and within countries the proportions of respondents reporting relatively long times was always significantly higher in rural than in urban areas. Regular patterns also emerged in the method-specific data; in general, least travel time was required to reach sources for the condom, followed by the pill, the IUD and female sterilization in that order. A very substantial fraction of the women who knew where to get more than one of these four methods nevertheless gave identical (or similar) travel times to all such sources.

In relation to contraceptive use, travel time can be interpreted either as an indicator of cost, in terms of time diverted from other activities, or as a substitute for direct data on distance (its usefulness for the latter purpose is enhanced when combined with means of transportation). It is difficult, however, to identify any pronounced effect of accessibility, as measured by this variable, on contraceptive behaviour. No systematic relationships emerged in cross-classifications, either of overall contraceptive use by travel time to the nearest known source, or of the use of specific methods by travel time to the source the respondent would use to obtain that method, although there is some evidence of a depressing effect of increasing travel time on use of the pill. A multivariate analysis of the use of individual methods which included socio-economic and demographic controls did not reveal any more prominent role for travel time but suggested that trade-off among efficient methods has some bearing on the method chosen.

Confirming other experience, where the question was asked, a very high proportion of respondents failed to provide estimates of distance to a source. Data on means of transportation were collected in a few cases with reference to the nearest source of advice and supplies and in a few others with reference to the source the respondent would use to obtain specific methods. The quality of this information appears to be adequate: it can be viewed as representing the financial cost of travel to a source or, in conjunction with travel time, as a way of indirectly assessing physical distance. In the only country where a question on transportation costs was included, the item does not appear to have presented any problems.

The estimated costs associated with the four principal methods of contraception appear to vary sharply. While the quality of these data is poor, and there are further obstacles to their use of both a theoretical and a practical nature, it is nevertheless evident that service costs are an important consideration and that they can only be accounted for meaningfully on a method-specific basis.

5 Use of Services

5.1 THE DATA

A number of separate topics come under the heading of use of services: visits to a source ever, visits to a source in the previous year, acquisition of supplies, and visits by a family planning worker. Almost all the countries that inquired about knowledge of contraceptive sources proceeded to ask those who replied affirmatively whether they had ever visited such a place and if so whether they had done so in the last 12 months (Colombia, Costa Rica, Ghana, Indonesia, Kenya, Korea, Malaysia, Mexico, Nepal, Paraguay, Trinidad and Tobago, Venezuela). There were no questions on visits to a source in the Philippine or Sudanese surveys, and Lesotho and Panama asked only about visits ever. Usually a visit to obtain family planning advice or supplies was mentioned, but following the pattern of the questions on knowledge of a source, Ghana and Kenya specified supplies, and Panama referred only to information and advice. The various types of source visited in the previous 12 months were ascertained in eight countries (Colombia, Costa Rica, Indonesia, Malaysia, Mexico, Nepal, Trinidad and Tobago, Venezuela). The type of outlet to which the respondent had gone most recently was recorded in eleven countries (Colombia, Costa Rica, Ghana, Indonesia, Kenya, Lesotho, Mexico, Nepal, Paraguay, Trinidad and Tobago, Venezuela); in Lesotho this pertained to the most recent visit ever but elsewhere to that in the last year.

A few countries asked women who had ever visited a source for additional pieces of information. Korea inquired how many visits had been made in the last year. Nepal asked from which type of source women would prefer to obtain family planning services. Panama recorded the date and type of source for the first visit.

As prescribed in the family planning module, several further questions were frequently asked concerning use of a family planning outlet during the previous year. Three countries included a question for those who had visited an outlet during this period as to whether they were satisfied with the attention they had received on their most recent visit (Ghana, Kenya, Venezuela), and five more asked this question except of women who had most recently been to a pharmacy or a private doctor (Colombia, Costa Rica, Mexico, Nepal, Paraguay). Most of the surveys inquired whether the respondent would return to the place she had visited most recently the next time she needed such services, and if not, why not (Colombia, Costa Rica, Ghana, Indonesia, Kenya, Mexico, Nepal, Paraguay, Trinidad and Tobago, Venezuela). In each of this last group of countries except Ghana those who had not visited an outlet within the previous year were also asked whether they had thought seriously of going to one during the year, and if so, why they had not gone. However, in Nepal the question was unaccountably restricted to women who had ever visited an outlet (although not within the previous year). The same question was also included by the Philippines, but since the discontinuation of contraceptive use was a major concern there, it was addressed to women who were not currently using contraception. Finally, three countries added an item that was not in the family planning module, inquiring concerning the most recent visit during the previous year how long the respondent had had to wait for service (Ghana, Indonesia, Kenya); Lesotho also asked this question but with reference to the most recent visit ever.

Eligibility for all the above questions was usually based on affirmative answers to the question on knowledge of a source of contraceptive assistance. Thus the defects in the response on knowledge of a source have implications also for the quality of these data.

A somewhat different approach introduced by a number of countries was to ask users of certain methods where they had obtained them. Typically questions were added to the fertility regulation section asking women whose current or most recent method required supplies (pill, injection, other female scientific methods, condom) what type of source they had used (Costa Rica, Dominican Republic, Nepal, Pakistan, Paraguay, Peru, Venezuela). In the Dominican Republic women whose current or most recent method was the IUD or female sterilization were asked about sources as well. For the Dominican Republic and Pakistan most recent use referred to use in the open or the last closed birth interval, whereas for other countries use at any time was considered. Malaysia also covered this topic in the fertility regulation section, but the question was addressed only to current users of either the pill or condom. Alternatively, such questions could be inserted in the section on knowledge and ever-use of contraception; type of source was ascertained in this way in Fiji for current users of the pill and condom, in Haiti for ever-users of the pill, IUD, other female scientific methods, condom, and female sterilization, in Korea for ever-users of the pill and condom, and in Panama for the current or most recent method if it was a mechanical or chemical method. In Fiji current users of the pill and condom were asked at the same point about the quantity purchased the last time, who had purchased condoms the last time and, if condoms were purchased at a health centre, whether all supplies had been purchased at the same centre and which one. In Panama, for women who had ever used more than one method, the type of source where the first as well as the last method had been acquired was recorded.

Several of the surveys that inquired about the type of source where supplies had been obtained then asked whether the respondents had always been able to obtain these supplies when they needed them, and if not, the

nature of the problem (Costa Rica, Dominican Republic, Korea, Malaysia, Nepal, Pakistan, Paraguay, Peru, Venezuela). The only direct questions on contraceptive availability asked in Sri Lanka similarly concerned difficulties obtaining supplies that might have been encountered by women who had ever taken the pill.

Finally, two of the national questionnaires included a special item about visits by a family planning worker. In Korea all women were asked whether a family planning worker had ever visited them at home, and if so, how many times in the previous 12 months. In Pakistan all currently married women were asked whether they or their husbands had ever been visited by or met a family planning worker, and if so, when was the last time. The use of family planning workers offers, in principle, an entirely different way of resolving the availability problem, since the service is brought by this means directly to the client rather than relying upon the client to reach the service. Its effectiveness in this regard would depend, however, on whether the worker actually called at the client's home, the frequency and regularity of such visits and the range of services offered by the worker. Mobile workers may be used merely as 'motivators' to inform couples about family planning facilities and encourage their use and not as purveyors of the service *per se*. Their primary purpose might also be to provide 'resupply' services following the initial visit to a centre by a client. In Korea and Pakistan, home visits appear to have been the general rule, and the workers usually provided at least some methods *per se* as well as advice and information. In other countries family planning workers were often included among the types of source the respondent could identify as ones she knew or had visited, but such workers may have come only to the village, or perhaps to a nearby market place, where the respondent would still have had to seek them out (Colombia, Ghana, Indonesia, Kenya, Lesotho, Nepal, Philippines, Trinidad and Tobago).

5.2 VISITS TO A SOURCE EVER

The proportion of women knowing a source who had ever visited such a place is usually around one half, although it ranges among the countries for which the information is available from 17 per cent in Lesotho, to 75 per cent in Trinidad and Tobago (table 23). A substantial number of Korean respondents who were eligible for this question had to be deleted from the base on which the proportion was calculated because they were erroneously not asked the question (110 women). Rural women were consistently less likely to have made such a visit, and the size of the residential gap is inversely related to the proportion ever having visited a source in the country as a whole.

The pattern of variation among countries in the proportion of women knowing a source who had ever visited such a place resembles that in the proportions of all currently married women who were aware of a source in the first place (table 3 and table 23). In Ghana, Kenya, Lesotho and especially Nepal, countries where awareness of a source of family planning assistance was very low, only a small fraction of the women who said they knew where to go had actually done so, but at least two-thirds of these women had visited an outlet in Costa Rica and Trinidad and Tobago, where knowledge of a source was very common. The similarity in pattern is to some extent surprising. If the women with the greatest desire for services are the ones who are most likely to find out where they can go for help, one would expect to find fairly constant proportions visiting a source or possibly even an inverse association between the two measures. The existence of a generally positive association suggests that the propensity to use family planning services develops gradually within the group that knows about the service, while awareness of the service grows among the married female population at large. Factors such as method preference and the service situation in the country would also be likely to have parallel effects at each of the two stages.

Table 23 Per cent ever having visited a source by type of residence: currently married women below age 45 who knew a source[a]

	All women	Urban	Rural
Colombia	55	58	48
Costa Rica	65	65	64
Ghana	30	34	27
Kenya	29	44	26
Korea	59	60	57
Lesotho	17	30	16
Malaysia	50	60	45
Mexico	54	58	40
Nepal	22	40	19
Panama	51	52	48
Paraguay	53	65	43
Trinidad and Tobago	74	75	73
Venezuela	50	52	42

[a]Results are not shown for Indonesia because the data were not available in a form that was compatible with the standard recode file.

5.3 VISITS TO A SOURCE IN THE LAST YEAR

Typically, half to three-quarters as many of the respondents knowing a source said that they had visited an outlet within the last year as had ever been to such a place (table 24). Again, a considerable group of Korean women were accidentally not asked this question. The demographic and socio-economic differentials in reporting of visits to a source during the last year offer additional evidence that the influences determining general awareness of a source are reinforced by the effects of these same forces on the further decision to visit a source (table 3, table 24). The relationship with life-cycle variables again usually forms a shallow inverted U, with the same countries likely to be the exceptions (Ghana, Nepal). But in this case the socio-economic characteristics are less important. In Colombia, Costa Rica, Indonesia,

Table 24 Per cent having visited a source in the previous year by age, marriage duration, number of living children,

	Age						Marriage duration					
	15–19	20–24	25–29	30–34	35–39	40–44	<5	5–9	10–14	15–19	20–24	25+
Colombia	34	38	40	34	32	16	36	37	35	33	21	18
Costa Rica	–	60	60	46	33	30	54	58	47	37	32	27
Ghana	7	11	17	16	13	7	12	14	14	15	9	6
Indonesia	27	38	45	46	43	45	26	46	47	47	40	41
Kenya	8	13	16	16	19	13	13	17	15	15	16	12
Korea	18	19	26	36	33	26	18	32	37	33	29	24
Malaysia	18	30	38	30	27	22	30	36	31	30	23	19
Mexico	39	41	44	41	37	30	42	40	43	35	36	27
Nepal	0	11	7	6	7	16	6	11	4	11	4	10
Paraguay	26	38	40	37	37	33	36	40	36	36	30	29
Trinidad and Tobago	46	62	63	61	52	39	52	67	61	53	48	34
Venezuela	39	40	38	34	24	21	38	38	35	27	25	24

Korea and Trinidad and Tobago rural residents who knew a source were about as likely to have visited one as those living in population centres. Nevertheless, the contrast by residence remains very marked in Ghana, Kenya and Paraguay. The likelihood of the woman having visited a source does generally increase as the number of years of education rises, but not consistently or sharply except in Ghana, Mexico and Paraguay.

It is also possible to examine how the proportions visiting a source within the previous year varied with travel time among women who knew of a source; these tabulations are shown in table 25. It should be noted, however, that the question on travel time specified the nearest source known, and the place visited need not have been the same one. While the likelihood of having visited a source declines as travel time increases in most cases, accessibility as measured in this way does not seem to matter a great deal. The differences are, if anything, less marked when type of residence is controlled. The appearance of a positive association in Costa Rica raises the possibility that method choice may confound this issue, as seemed probable in the case of contraceptive use and travel time (see section 4.2). Here there is an additional complication since sterilization not only typically requires longer travel time but also reduces the likelihood of having recently visited a source.

The types of source visited in the previous year and the type of source visited most recently are shown in tables 26 and 27. As was the case for types of source known, the response to the questions on types of source visited during the previous year was intended to reflect all places visited within that time period, and the same respondent may be represented in more than one category. Nevertheless, the probability that a given respondent would have visited multiple types of source is clearly less than that of her knowing of different types of source. The question on type

Table 25 Per cent having visited a source in the previous year by travel time to the nearest source known and by type of residence: currently married, fecund women below age 45 who knew a source

	<15 mins	15–59 mins	1+ hours
A All women			
Colombia	37	32	30
Costa Rica	45	48	49
Kenya	23	16	12
Korea	30	30	31
Malaysia	34	29	26
Mexico	46	39	35
Nepal	—— 9 ——		9
Venezuela	34[a]	35[b]	35
B Urban			
Colombia	36	33	40
Costa Rica	45	51	51
Kenya	30	23	22
Korea	29	29	33
Malaysia	39	34	31
Mexico	47	41	43
Nepal	—— 9 ——		**
Venezuela	34[a]	36[b]	41
C Rural			
Colombia	45	31	37
Costa Rica	46	49	49
Kenya	18	15	12

type of residence and education: currently married, fecund women below age 45 who knew a source

Number of living children						Type of residence			Education				Total
0	1	2	3	4	5+	Urban		Rural	None	1–3 yrs	4–6 yrs	7+ yrs	
						Large	Other						
16	38	36	36	36	31	——— 34 ———		30	23	31	35	35	33
28	59	59	48	40	41	——— 48 ———		49	33	47	50	49	48
12	11	15	12	16	12	20	15	10	8	6	13	17	13
11	34	46	47	45	50	——— 42 ———		42	40	42	43	45	42
6	10	14	15	15	18	29	17	13	11	12	12	22	15
11	17	29	35	34	33	28	31	30	31	30	31	26	29
6	31	31	34	36	29	36	34	28	25	29	32	33	30
20	41	45	40	46	38	44	41	30	28	36	42	45	40
0	4	2	15	7	13	**	7	7	8	7	2	10	7
25	38	46	45	35	28	48	46	28	20	26	38	50	36
48	53	66	64	60	52	——— 56 ———		57	46	50	54	57	57
18	40	40	32	36	31	——— 36 ———		26	38	26	34	37	34

Table 25 (*cont*)

	< 15 mins	15–59 mins	1+ hours
C Rural (*continued*)			
Korea	32	30	30
Malaysia	30	27	25
Mexico	41	27	28
Nepal	——— 10 ———		9
Venezuela	33[a]	22[b]	29

[a] < 10 minutes.
[b] 10–59 minutes.
NOTE: ** indicates less than 20 cases in the base.

of place visited most recently during the last year required a unique answer.

Some interesting differences emerge between the distributions of sources that the respondents had heard of and those they report having visited (tables 5, 26, 27). In Kenya, for instance, hospitals and dispensaries figure much more prominently among the types of place most recently visited than among the types of place known, while the opposite is true to a lesser extent of the other types of place shown. Thus Kenyan women evidently preferred hospitals and dispensaries to other sources, whether because these were more accessible or for other reasons. Important differences between the two sets of figures can be identified for most of the other countries where the relevant questions were asked, and these results should be instructive for programme planners in the various countries. On the other hand, the distribution of type of place visited during the previous year is generally very similar to that by place visited most recently, and the value of including both these questions is doubtful.

Turning to the overall acceptability of the service, three indicators are considered.

1 The length of time that the respondent had had to wait before being attended to on her most recent visit to a family planning outlet. The first section of table 28 gives these results. The rather peculiar distribution for Lesotho is due to heaping on one minute and 55 minutes (probably originally a non-numeric response indicating less than one hour), which may simply reflect lack of time consciousness. However, few women in any of the countries appear to have been unable to respond at all. The indicated waiting time is shorter in Ghana, where over 60 per cent of the respondents reported times of less than half an hour, than in Indonesia and Kenya, where the corresponding proportion is a quarter to one-third. In these three countries waits of over an hour were more common for rural than for urban women. Assuming that a valid response can be obtained, data on waiting time may be useful for national programme evaluation in conjunction with those on type of source and accessibility.

2 Whether the respondent was satisfied with the attention she had received the last time she visited a source of family planning assistance. The data in the second section of table 28 suggest that a direct question of this sort does not often yield useful results. Although almost all respondents were able to give an answer, Kenya and Nepal are the only countries where more than three per cent reported dissatisfaction. In Kenya this proportion is nearly twice as high among rural as among urban residents, and cross-tabulation by type of source could potentially offer some insight for

Table 26 Types of source visited (per cent): currently married women below age 45 who had visited a source in the previous year

Colombia	Hospital	Health centre	FP Assoc. clinic	FP field worker	Pharmacy	Private doctor	Other
All women	23	20	44	1	2	11	6
Urban	20	18	48	1	1	11	6
Rural	32	25	27	4	2	14	4

Costa Rica	Health Min. facility	Social security facility	Private clinic	Pharmacy	Private doctor	Other
All women	44	49	4	2	9	0
Urban	26	60	6	2	15	1
Rural	62	37	1	1	3	0

Indonesia	Hospital	PPKB	Village headman	FP clinic	FP field worker	Pharmacy	Family doctor	Other
All women	12	2	21	36	4	1	5	29
Urban	24	0	4	35	2	4	23	20
Rural	9	2	24	37	4	0	2	31

Malaysia	General hospital	Government clinic	Nat. FP Board clinic	FP Assoc. clinic	Private clinic	Doctor	Other
All women	7	27	26	14	20	2	10[a]
Urban	9	14	26	16	29	2	12[b]
Rural	7	35	26	13	14	2	8[c]

Mexico	Health Min. hosp. clinic	Social security clinic	Other govt facility	FP Assoc. clinic	Pharmacy	Private doctor, clinic, hosp.
All women	23	32	10	8	11	23
Urban	19	34	10	9	11	24
Rural	41	20	11	1	10	21

Nepal	Hospital	FP clinic	FP field worker	Pharmacy
All women	38	57	10	5
Urban	**	**	**	**
Rural	**	**	**	**

[*Table continues*]

Table 26 (*cont*)

Trinidad and Tobago	Government facility	FP Assoc. clinic clinic	FP field worker worker	Pharmacy	Private doctor	Other	Missing data
All women	31	23	1	37	15	2	0
Urban	24	26	1	39	18	1	0
Rural	42	19	0	33	12	2	0

Venezuela	Hospital	Health centre	Social security facility	Private clinic	Welfare facility	Pharmacy	Private doctor	Missing data
All women	35	36	4	14	8	0	8	0
Urban	33	36	4	15	7	0	9	0
Rural	50	36	0	7	12	0	0	2

[a]Includes 9% unidentified codes.
[b]Includes 10% unidentified codes.
[c]Includes 7% unidentified codes.
NOTE: ** indicates less than 20 cases in the base.

Table 27 Per cent distribution by type of source visited most recently: currently married women below age 45 who had visited a source in the previous year

Colombia	Hospital	Health centre	FP Assoc. clinic	FP field worker	Pharmacy	Private doctor	Other	Total
All women	22	17	42	1	2	10	6	100
Urban	19	17	46	0	1	10	6	100
Rural	31	20	26	4	2	12	5	100

Costa Rica	Health Min. facility	Social security facility	Private clinic	Pharmacy	Private doctor	Other	Total
All women	40	48	3	1	8	0	100
Urban	21	59	5	1	13	0	100
Rural	59	36	1	1	2	0	100

Ghana	Govt. hosp., clinic	FP Assoc., Christ. Cncl. clinic	Mobile FP clinic	FP field worker	Pharmacy, shop	Private doctor, clinic	Missing data	Total
All women	40	22	5	10	14	7	2	100
Urban	39	26	4	9	14	6	2	100
Rural	42	17	6	12	14	8	2	100

[*Table continues*]

Table 27 (*cont*)

Indonesia	Hospital	PPKB	Village headman	FP clinic	FP field worker	Pharmacy	Family doctor	Other	Total
All women	10	1	19	34	3	1	5	28	100
Urban	21	0	3	32	1	3	21	19	100
Rural	8	2	22	34	3	0	1	30	100

Kenya	Hospital, dispensary	Mobile FP clinic	FP field worker	Pharmacy, shop	Private doctor	Missing data	Total
All women	77	13	2	0	5	3	100
Urban	72	8	0	1	13	5	100
Rural	79	14	2	0	2	3	100

Lesotho[a]	Hospital	FP clinic (building)	Mobile FP clinic	FP field worker	Pharmacy	Doctor	Missing data	Total
All women	21	56	5	2	2	12	3	100
Urban	24	53	5	0	0	8	10	100
Rural	20	57	4	2	2	13	2	100

Mexico	Health Min. hosp. clinic	Social security clinic	Other govt. facility	FP Assoc. clinic	Pharmacy	Private doctor, clinic, hosp.	Total
All women	22	30	10	7	10	22	100
Urban	18	32	10	8	10	22	100
Rural	40	20	10	1	8	20	100

Nepal	Hospital	FP clinic	FP field worker	Pharmacy	Total
All women	36	53	11	0	100
Urban	**	**	**	**	**
Rural	**	**	**	**	**

Paraguay	Hospital	Govt. FP clinic	FP Assoc. clinic	Pharmacy	Private doctor	Other	Missing data	Total
All women	28	34	6	17	14	2	0	100
Urban	27	31	5	16	18	2	0	100
Rural	29	36	6	17	8	3	0	100

[*Table continues*]

Table 27 (*continued*)

Trinidad and Tobago	Government facility	FP Assoc. clinic	FP field worker	Pharmacy	Private doctor	Other	Total
All women	30	21	1	36	12	1	100
Urban	23	24	2	38	13	1	100
Rural	40	17	0	32	9	2	100

Venezuela	Hospital	Health centre	Social security facility	Private clinic	Welfare facility	Private doctor	Other	Missing data	Total
All women	35	33	4	13	7	8	1	0	100
Urban	33	33	4	14	6	9	0	0	100
Rural	52	29	0	9	9	0	2	0	100

[a]Data refer to most recent visit ever.
NOTE: ** indicates less than 20 cases in the base.

evaluation purposes. While the proportion is high in Nepal, it represents only six women. The raw data for the total samples indicate that in Colombia too this question failed to pick up any reservations the respondents may have had, although as many as 6 per cent did reply negatively in Mexico.

3 Whether or not the respondent thought she would return to the same source in the future. The response to this question is shown in the last section of table 28. The situation is similar to that of satisfaction with the attention received: although virtually all women gave an answer, the replies were overwhelmingly affirmative. The number of women who said they did not intend to return to the same place is in most cases so small as to limit the value of further analysis. For Ghana, Nepal and Paraguay it is actually less than 20; for Kenya it is only 37, and the data on reasons were not included in the standard recode file. The results for the remaining six countries indicate, moreover, that a high proportion of the reasons given for not returning to the same place are not relevant to service evaluation (not shown). In Colombia, Indonesia, Mexico and Trinidad and Tobago many women are coded as having 'no need' to go back, and categories such as 'wants pregnancy' or 'had operation' are shown for several countries as well. Altogether, reasons having directly to do with the quality of the service or its accessibility represent 21 per cent of the responses in Colombia, 45 per cent in Costa Rica, 34 per cent in Mexico and 14 per cent in Venezuela.

In contrast, substantial numbers of women who knew of a source of family planning assistance but had not visited such a place during the previous year reported that they had thought seriously of doing so (table 29). This question was asked mainly in Latin American surveys, and up to one-third of eligible respondents replied affirmatively. The reasons these women gave for not having followed up on the idea are revealing despite the excessive proportions falling into the residual 'other' category in most of the countries. Health reasons or health fears (although they have rather different implications, the two are not always easy to distinguish) are clearly an important concern. Husband's opposition is a lesser but nevertheless quite pervasive complaint. Lack of time and money prove to be influential factors and are relevant to service design. Pregnancy and lack of need for the service are again difficult to evaluate, however. Missing data are not shown either for the first question on whether the respondent had thought of visiting a source or for the following one on reasons for not having done so, because the responses were usually coded together making it impossible to separate the non-response for the two.

Turning finally to the relationship between visits to a source in the previous year and current use of contraception, the data in table 30 confirm the obvious finding that use of the services has an important bearing on family planning practice. Three-quarters of the women exposed to the risk of pregnancy who had visited a source were using an efficient method in all countries except Kenya and Korea, compared to well under half those who knew of a source but had not been to one in the previous year. The differences are particularly striking in Ghana, Malaysia, Paraguay and Trinidad and Tobago. The relatively low proportion using efficient methods and high proportion using no method that is shown for Korean women who had visited a source could be related to frequent resort to abortion, which is not included here as a method.

On the other hand, the proportions reporting use of efficient methods among women who had not visited a source are not inconsequential. In such places as Costa Rica this could be partly due to sterilization. But the number of women using methods that require resupply

Table 28 Per cent distribution by length of wait on the most recent visit, satisfaction with the attention received on the fecund women below age 45 who visited a source in the previous year[a]

	Length of wait						
	< 10 mins	10–29 mins	30–59 mins	60–119 mins	120+ mins	Missing data	Total
A All women							
Colombia	–	–	–	–	–	–	–
Costa Rica	–	–	–	–	–	–	–
Ghana	16	46	19	13	5	–	100
Indonesia	1	30	31	24	15	0	100
Kenya	5	20	26	22	25	2	100
Lesotho[b]	43	5	49	3	–	–	100
Mexico	–	–	–	–	–	–	–
Nepal	–	–	–	–	–	–	–
Paraguay	–	–	–	–	–	–	–
Trinidad and Tobago	–	–	–	–	–	–	–
Venezuela	–	–	–	–	–	–	–
B Urban							
Colombia	–	–	–	–	–	–	–
Costa Rica	–	–	–	–	–	–	100
Ghana	16	46	23	12	3	–	100
Indonesia	0	38	34	21	6	0	100
Kenya	7	38	26	14	15	1	100
Lesotho[b]	30	9	43	13	–	–	100
Mexico	–	–	–	–	–	–	–
Nepal	–	–	–	–	–	–	–
Paraguay	–	–	–	–	–	–	–
Trinidad and Tobago	–	–	–	–	–	–	
Venezuela	–	–	–	–	–	–	–
C Rural							
Colombia	–	–	–	–	–	–	–
Costa Rica	–	–	–	–	–	–	–
Ghana	17	47	15	14	8	–	100
Indonesia	2	28	30	24	16	0	100
Kenya	4	15	[illegible]	24	28	2	100
Lesotho[b]	47	3	51	0	0	–	100
Mexico	–	–	–	–	–	–	–
Nepal	–	–	–	–	–	–	–
Paraguay	–	–	–	–	–	–	–
Trinidad and Tobago	–	–	–	–	–	–	–
Venezuela	–	–	–	–	–	–	–

[a]Women whose most recent visit was to a pharmacy or private doctor are excluded in Costa Rica, Nepal, and Paraguay. Results are not shown for Colombia and Mexico because the data were not available in a form compatible with the standard recode file.
[b]Data refer to the most recent visit ever.
NOTE: ** indicates less than 20 cases in the base; – indicates information unavailable.

most recent visit and intention to revisit the source most recently visited and by type of residence: currently married,

Satisfaction with service				Intention to revisit			
Satisfied	Not satisfied	Missing data	Total	Will revisit	Will not revisit	Missing data	Total
–	–	–	–	95	5	0	100
97	3	0	100	97	3	0	100
99	1	1	100	92	7	1	100
–	–	–	–	91	9	1	100
89	10	2	100	89	11	0	100
–	–	–	–	–	–	–	–
–	–	–	–	94	6	1	100
65	29	6	100	64	36	0	100
97	1	2	100	98	2	0	100
–	–	–	–	94	6	0	100
97	3	1	100	94	6	0	100
–	–	–	–	96	3	0	100
96	4	0	100	96	4	0	100
100	0	0	100	95	3	2	100
–	–	–	–	91	9	–	100
94	6	0	100	95	5	0	100
–	–	–	–	–	–	–	–
–	–	–	–	93	6	1	100
**	**	**	**	**	**	**	**
97	0	3	100	98	1	0	100
–	–	–	–	94	6	0	100
97	3	1	100	94	6	–	100
–	–	–	–	90	10	0	100
98	1	1	100	97	3	0	100
98	1	1	100	88	12	0	100
–	–	–	–	91	9	1	100
88	11	2	100	87	12	2	100
–	–	–	–	–	–	–	–
–	–	–	–	96	4	1	100
**	**	**	**	**	**	**	**
98	2	1	100	97	3	0	100
–	–	–	–	93	7	0	100
98	2	0	100	93	7	–	100

Table 29 Per cent having thought seriously of getting family planning advice or supplies during the previous year: currently married, fecund women below age 45 who knew a source and had not visited one in the last year; per cent distribution by reasons for not going: currently married, fecund women below age 45 who knew a source, had not visited one in the last year but had thought of going[a]

	Thought of going	Reasons for not going									
		Pregnancy[b]	Husband opposed	Health reasons or health fears	No time	No money	Too far	Didn't know where or how	Not needed	Other	Total
A All women											
Colombia	32	19	9	19	—— 28 ——		–	–	–	26	100
Costa Rica	28	13	–	9	28	3	–	–	26	20	100
Indonesia	28	22	2	6	–	–	–	–	9	61	100
Mexico	31	–	13	22	–	6	24	–	32	3	100
Paraguay	17	10	4	6	33	–	–	2	–	46	100
Trinidad and Tobago	12	–	–	20	19	–	–	–	17	43	100
Venezuela	30	21	5	–	25	–	–	–	–	48	100
B Urban											
Colombia	28	21	10	17	—— 24 ——		–	–	–	28	100
Costa Rica	24	13	–	7	32	3	–	–	28	17	100
Indonesia	28	16	7	11	–	–	–	–	12	53	100
Mexico	30	–	12	21	–	3	25	–	35	3	100
Paraguay	18	12	5	4	48	–	–	1	–	30	100
Trinidad and Tobago	12	–	–	16	24	–	–	–	13	47	100
Venezuela	30	21	6	–	26	–	–	–	–	47	100
C Rural											
Colombia	42	15	7	21	—— 35 ——		–	–	–	21	100
Costa Rica	33	12	–	11	25	4	–	–	25	22	100
Indonesia	28	22	1	5	–	–	–	–	9	62	100
Mexico	34	–	13	25	–	12	22	–	25	3	100
Paraguay	17	9	3	7	23	–	–	–	–	56	100
Trinidad and Tobago	11	–	–	28	12	–	–	–	24	36	100
Venezuela	35	22	4	–	20	–	–	–	–	55	100

[a]Results are not shown for Kenya because the response was coded only for women who had ever visited a source.
[b]Was pregnant, is pregnant, or wants pregnancy.

Table 30 Per cent distribution by category of method use and visit to a source in the previous year and by type of residence: currently married, exposed women below age 45 who knew a source

	Visited a source				Did not visit a source			
	Efficient	Inefficient	None	Total	Efficient	Inefficient	None	Total
A All women								
Colombia	78	8	14	100	36	20	43	100
Costa Rica	88	5	7	100	47	22	31	100
Ghana	72	2	26	100	7	6	87	100
Indonesia	84	4	12	100	25	7	67	100
Kenya	58	4	38	100	4	5	91	100
Korea	64	8	28	100	27	12	61	100
Malaysia	83	5	12	100	15	15	70	100
Mexico	86	3	10	100	26	18	55	100
Nepal	**	**	**	**	23	0	77	100
Paraguay	73	11	16	100	10	22	68	100
Trinidad and Tobago	89	2	9	100	14	14	72	100
Venezuela	78	8	14	100	40	18	42	100
B Urban								
Colombia	79	8	13	100	41	21	39	100
Costa Rica	38	5	6	100	52	22	26	100
Ghana	73	3	24	100	10	6	84	100
Indonesia	77	9	13	100	18	19	63	100
Kenya	70	2	28	100	8	4	88	100
Korea	66	8	26	100	28	14	28	100
Malaysia	83	6	11	100	24	21	55	100
Mexico	88	3	9	100	31	20	50	100
Nepal	**	**	**	**	28	0	72	100
Paraguay	72	12	16	100	20	27	53	100
Trinidad and Tobago	88	2	10	100	15	14	71	100
Venezuela	79	7	14	100	43	18	39	100
C Rural								
Colombia	75	11	14	100	23	20	57	100
Costa Rica	88	5	8	100	41	23	36	100
Ghana	70	1	28	100	5	7	88	100
Indonesia	86	2	12	100	27	6	68	100
Kenya	52	5	42	100	3	5	92	100
Korea	62	8	30	100	25	9	66	100
Malaysia	83	4	13	100	11	13	76	100
Mexico	82	3	17	100	13	15	73	100
Nepal	**	**	**	**	23	1	77	100
Paraguay	74	9	17	100	4	18	78	100
Trinidad and Tobago	90	2	8	100	14	13	73	100
Venezuela	75	10	15	100	28	14	59	100

NOTE: ** indicates less than 20 cases in the base; – indicates information not available.

who said they had not been to a source in the last year reinforces doubts about the quality of the information: 43 per cent of pill users who knew a source in Colombia, 29 per cent in Indonesia, 32 per cent in Korea, 19 per cent in Mexico, 38 per cent in Venezuela. The question on visits to a source may fail to identify all respondents who had used the family planning services recently if supplies were not obtained in person or if some kinds of place were not viewed as sources visited in the sense of the question, eg family planning workers or commercial outlets. Conforming better to expectation, women who had not visited a source were not only more likely than women who had been to a source to be using no method but were also far less likely in all countries to be using an efficient method.

The most striking difference between urban and rural areas is the more frequent use of efficient methods among urban women who knew of a source but had not visited one. Rural women were much more likely than urban women not to be using any method of contraception if they had not been to a source in the last year.

5.4 ACQUISITION OF SUPPLIES

The types of outlet where respondents had actually obtained contraceptives can be examined separately by method in most cases, although all supply methods are shown together for the Dominican Republic, Pakistan and Venezuela because the information on the most recent method used was not included in the standard recode files for these countries (table 31). Without the latter, the usefulness of these data is much reduced. Variation in the distributions from method to method follows very much the pattern that would be expected. Pills were obtained from many types of source; injections, IUDs, and female sterilization were acquired mainly in larger health facilities; other female scientific methods and condoms were often acquired from pharmacies. Differences between countries in the types of facility that were available and the relative frequency with which they were used nevertheless dominate the distributions.

Four of the surveys that included the question on the type of outlet where contraceptives were obtained were also among those providing information on the type(s) of source visited during the previous year (Costa Rica, Malaysia, Nepal, Venezuela). For Costa Rica and Venezuela there are pronounced differences in the results (table 27 and table 31). In both these countries pharmacies were rarely reported as a family planning source visited during the last year but they figure prominently among the places where supplies were obtained; for Costa Rica this applies to the acquisition of all the methods shown. In Nepal also, although the numbers of women involved are very small, it may not be coincidental that family planning field workers and 'other' types of place were mentioned much more often as

Table 31 Per cent distribution by type of source where supplies were obtained: currently married women who had used specified methods[a]

Costa Rica[b]	Health Min. facility	Social security facility	Private clinic	Pharmacy	Private doctor	Other	Total
Pill							
All women	31	42	1	22	4	1	100
Urban	17	52	2	24	5	1	100
Rural	44	33	0	20	2	0	100
Injection							
All women	53	16	5	21	5	0	100
Urban	25	25	15	25	10	0	100
Rural	68	10	0	18	3	0	100
Other Fem. Sci. methods							
All women	9	32	0	58	0	0	100
Urban	6	33	0	60	0	0	100
Rural	**	**	**	**	**	**	**
Condom							
All women	15	22	1	57	2	3	100
Urban	8	25	0	62	3	2	100
Rural	30	14	1	48	1	6	100

[*Table continues*]

Table 31 (*cont*)

Dominican Rep.[c]	Hospital	FP clinic	Pharmacy	Private doctor	Other	Missing data	Total
Supply methods							
All women	24	30	34	7	3	2	100
Urban	24	26	39	8	4	0	100
Rural	24	38	27	5	2	5	100

	Public hospital	Social security hospital	Armed forces facility	Private clinic	Missing data	Total
IUD						
All women	71	6	2	18	4	100
Urban	65	5	2	23	5	100
Rural	80	8	0	8	4	100
Female sterilization						
All women	18	4	0	77	0	100
Urban	15	4	1	80	1	100
Rural	24	4	0	72	0	100

Fiji[d]	Health centre	Mobile clinic	Nurse	Pharmacy	Other	Missing data	Total
Pill							
All women	58	3	13	20	0	4	100
Urban	50	5	3	36	1	5	100
Rural	63	2	20	10	0	4	100
Condom							
All women	57	3	11	23	1	5	100
Urban	51	4	8	30	1	6	100
Rural	62	3	12	18	1	5	100

Haiti[e]	Hospital, health centre	Private doctor	Other	Total
Pill				
All women	65	19	16	100
Urban	61	23	16	100
Rural	74	9	18	100
IUD				
All women	72	28	0	100
Urban	**	**	**	**
Rural	**	**	**	**
Condom				
All women	47	5	48	100
Urban	44	7	49	100
Rural	52	3	46	100

[*Table continues*]

Table 31 (*cont*)

Malaysia[d]	General hospital	Government clinic	Nat. FP Board clinic	FP Assoc. clinic	Private clinic	Doctor	Other	Missing data	Total
Pill									
All women	5	29	24	13	15	1	13[f]	0	100
Urban	7	14	21	16	24	1	17[g]	1	100
Rural	4	38	25	11	10	1	11[h]	0	100
Condom									
All women	2	3	7	8	8	0	64[i]	9	100
Urban	3	3	7	8	11	0	57[j]	10	100
Rural	0	3	6	7	4	0	72[k]	8	100

Nepal[b]	Hospital	FP clinic	FP Field worker	Pharmacy	Other	Missing data	Total
Pill							
All women	21	20	37	3	15	4	100
Urban	**	**	**	**	**	**	**
Rural	16	18	40	3	18	5	100
Condom							
All women	24	27	14	16	17	3	100
Urban	**	**	**	**	**	**	**
Rural	**	**	**	**	**	**	**

Pakistan[c,l]	Hospital	Family welfare clinic	FP personnel	Shop, agent	Private doctor	Relatives, friends	Other	Missing data	Total
All supply methods									
All women	12	15	38	35	4	12	3	1	–
Urban	16	12	29	42	5	16	3	1	–
Rural	5	20	55	22	2	5	2	1	–

Panama[b]	Government hospital	Health centre	Social security facility	FP Assoc. clinic	Private clinic	Pharmacy	Other	Missing data	Total
Pill									
All women	1	22	18	2	8	27	3	19	100
Urban	0	15	21	3	10	31	4	16	100
Rural	2	41	12	0	3	17	0	26	100
Injection									
All women	0	7	14	0	25	32	11	11	100
Urban	0	0	14	0	27	36	9	14	100
Rural	**	**	**	**	**	**	**	**	**

[*Table continues*]

Table 31 (*cont*)

Panama (*continued*)	Government hospital	Health centre	Social security facility	FP Assoc. clinic	Private clinic	Pharmacy	Other	Missing data	Total
IUD									
All women	9	35	12	10	22	0	3	10	100
Urban	10	32	11	8	25	0	4	10	100
Rural	**	**	**	**	**	**	**	**	**
Other Fem. Sci. methods									
All women	0	5	2	2	9	46	8	28	100
Urban	0	3	3	3	9	49	9	24	100
Rural	0	10	0	0	10	35	5	40	100
Condom									
All women	0	0	2	2	0	67	4	24	100
Urban	0	0	3	3	0	64	5	26	100
Rural	**	**	**	**	**	**	**	**	**

Paraguay[b]	Hospital	Govt. FP clinic	FP Assoc. clinic	Pharmacy	Private doctor	Other	Missing data	Total
Pill								
All women	18	27	5	47	2	1	0	100
Urban	15	17	5	61	1	0	1	100
Rural	20	37	4	33	3	2	0	100
Injection								
All women	1	4	0	84	6	4	1	100
Urban	0	2	0	91	6	2	0	100
Rural	4	7	0	70	7	7	4	100
Other Fem. Sci. methods								
All women	0	23	0	64	9	0	4	100
Urban	0	0	**	**	**	**	**	**
Rural	**	**	**	**	**	**	**	**
Condom								
All women	5	16	4	73	0	0	2	100
Urban	5	16	0	79	0	0	0	100
Rural	**	**	**	**	**	**	**	**

Peru[m]	Health Min. facility	Private clinic	Pharmacy	Private doctor	Other	Missing data	Total
Pill							
All women	5	1	84	5	4	0	100
Urban	6	1	84	5	4	0	100
Rural	0	0	86	6	8	0	100

[*Table continues*]

Table 31 (*cont*)

Peru (*continued*)	Health Min. facility	Private clinic	Pharmacy	Private doctor	Other	Missing data	Total
Injection							
All women	1	0	82	11	5	1	100
Urban	2	0	83	11	5	0	100
Rural	**	**	**	**	**	**	**
Other Fem. Sci. methods							
All women	0	0	93	2	4	2	100
Urban	0	0	94	2	3	2	100
Rural	**	**	**	**	**	**	**
Condom							
All women	0	0	85	2	10	3	100
Urban	0	0	87	0	11	2	100
Rural	**	**	**	**	**	**	**

Venezuela[b]	Hospital	Health centre	Social security facility	Welfare facility	Pharmacy	Private doctor	Other	Missing data	Total
All supply methods									
All women	11	14	2	1	66	5	1	0	100
Urban	10	14	2	1	66	6	2	0	100
Rural	15	14	1	2	68	0	0	0	100

[a]Results are not shown for Korea because the data were not available in a form compatible with the standard recode file.
[b]Data refer to the current or most recent method used.
[c]Data refer to the current or most recent method used in the open or last closed interval.
[d]Data refer to the method currently used.
[e]Data refer to methods ever used; results are not shown for other female scientific methods or female sterilization because less than 20 women had ever used each of these methods.
[f]Includes 12% unidentified categories.
[g]Includes 17% unidentified categories.
[h]Includes 9% unidentified categories.
[i]Includes 44% unidentified categories.
[j]Includes 35% unidentified categories.
[k]Includes 56% unidentified categories.
[l]Multiple responses allowed and total therefore exceeds 100%.
[m]Data refer to methods ever used.

sources from which supplies were obtained than as sources visited during the last year. The two pieces of information do refer to somewhat different events, but these observations again reinforce the impression that certain types of outlet could have been systematically overlooked in the response to the questions on knowledge of sources and visits to these places, probably particularly pharmacies and field workers.

Table 32 show the rather fragmentary results for the follow-up question about whether supplies had always been available when needed. The question itself seems to have caused some confusion in Nepal since responses were not recorded for all women whose current or last method was the pill, and a few for whom it was IUD, abstinence, or other non-supply methods apparently were included erroneously. In Pakistan well over half the eligible respondents were unable to give an answer to the question. Missing data are insignificant in other countries, but there is little of interest in the response. A substantial fraction of Nepalese pill and condom users said that they had encountered problems getting supplies, but the numbers are too small to indicate the nature of the difficulties. Only in Korea did a reasonably large group of respondents report having had difficulty. For both the pill and the condom, the principal problem was that the respondent was too shy to go for supplies, giving some insight into the psychological element in accessibility. In addition 26 per cent of pill users and 16 per cent of

condom users who had had any difficulty gave as their main complaint that it was too far to go, too inconvenient, or too hard to get supplies. The Korean questionnaire was different from those of other countries in that this topic was brought up as part of a fairly lengthy inquiry into various aspects of experience with the two methods, which may account for the more thoughtful response.

5.5 VISITS BY A FAMILY PLANNING WORKER

Curiously, the overall proportion of respondents reporting that they had ever been visited by a family planning worker is virtually identical in Korea and Paraguay (table 33). In both countries this service appears to have reached a little over a quarter of currently married women of reproductive age. In Korea the proportion is considerably higher in the countryside than in towns and cities, whereas the reverse is true in Pakistan. But even so in Pakistan 25 per cent of rural women (or their husbands), who form the vast majority of the country, had been contacted by a family planning worker. These findings are meaningful only in the context of the service situation in each country, that is the importance of family planning workers in the overall delivery system, the particular function of such workers within the system, and the relative emphasis on urban and rural areas. Unfortunately, neither Korea nor Pakistan included a question on types of source known to the respondent, so it is not possible to crosscheck visits by a family planning worker against reporting of such workers as a source of advice and supplies.

The association of visits by family planning workers with contraceptive use can, however, be explored. The results in table 34 show that exposed women who had ever had such a visit were considerably more likely in both countries to be using an efficient method of contraception than those who had not. In contrast, there is little difference in either country in the use of inefficient methods. The pattern is much the same in rural as in urban areas.

5.6 SUMMARY

Much of the information collected on the use of family planning services contributes to an understanding of the process of adoption of contraceptive practice and also to programme evaluation. The likelihood that a respondent who knew of a source of family planning assistance had made a visit to such a place is influenced by the country in which she lived and by her age, marriage duration, number of living children, type of residence and education in ways very similar to those affecting the likelihood that she would know where to go to begin with. Travel time to the nearest source, which is known of course only for respondents who were aware of a source, shows only a weak negative association with the likelihood of having visited any source in the year before the survey. As expected, visits to a source in the previous year were closely linked with the use of efficient contraception.

The response to questions on the type(s) of source visited and the type of source from which supplies were obtained does not lend itself readily to inter-country comparisons but offers valuable insight into individual national service systems that it would be difficult to obtain from other data. However, inconsistencies between the two pieces of information reinforce the suspicion of bias in the reporting of sources known and visited. Although included in only two of the surveys covered in this report, the results of a specific question on visits by a family planning worker may add significantly to an understanding of how the service system functions. Questions concerning the reasons for failure to make a visit to a source can shed some light on factors that inhibit the use of services, but careful coding of the replies is necessary to get the most out of these data.

With regard to service acceptability, the question on the length of time the respondent had had to wait for attention on her last visit to a family planning outlet yielded usable results. But direct attempts to assess either dissatisfaction with the service received on the last visit or experience of problems in obtaining supplies were generally unsuccessful. The outcome of questions as to whether or not the respondent thought she would revisit the same source was similarly unsatisfactory, and moreover the reasons given for not intending to return, while perfectly sensible, were often not pertinent.

[*Tables continue on pages 74, 75 and 76*]

Table 32 Per cent distribution by experience of difficulty in obtaining supplies and by type of residence: currently

	Any supply method				Pill			
	Problem	No problem	Missing data	Total	Problem	No problem	Missing data	Total
A All women								
Dominican Rep.[b]	2	97	1	100	–	–	–	–
Korea[c]	–	–	–	–	9	91	0	100
Malaysia[d]	–	–	–	–	3	96	0	100
Nepal[e]	–	–	–	–	13	83	3	100
Pakistan[b]	0	18	82	100	–	–	–	–
Paraguay[e]	–	–	–	–	1	98	1	100
Venezuela[e]	2	98	0	100	–	–	–	–
B Urban								
Dominican Rep.[b]	1	99	0	100	–	–	–	–
Korea[c]	–	–	–	–	9	91	0	100
Malaysia[d]	–	–	–	–	2	98	0	100
Nepal[e]	–	–	–	–	**	**	**	**
Pakistan[b]	0	21	79	100	–	–	–	–
Paraguay[e]	–	–	–	–	0	98	2	100
Venezuela[e]	2	98	0		–	–	–	–
C Rural								
Dominican Rep.[b]	4	93	3	100	–	–	–	–
Korea[c]	–	–	–	–	10	90	0	100
Malaysia[d]	–	–	–	–	4	96	0	100
Nepal[e]	–	–	–	–	11	83	4	100
Pakistan[b]	0	13	87	100	–	–	–	–
Paraguay[e]	–	–	–	–	1	99	0	100
Venezuela[e]	4	96	0	100	–	–	–	–

[a]Results are not shown for Costa Rica, Peru or Sri Lanka because the data were not available in a form compatible with the standard recode file; other female scientific methods are omitted from the tabulations by type of residence because in neither category was the number of cases for Paraguay sufficient for presentation.
[b]Data refer to the current or most recent method used in the open or last closed interval.
[c]Data refer to methods ever used.
[d]Data refer to the method currently used.
[e]Data refer to the current or most recent method used.
NOTE: ** indicates less than 20 cases in the base; – indicates information not available.

Table 33 Per cent ever visited by a family planning worker by type of residence: currently married women below age 45

	All women	Urban	Rural
Korea	29	22	39
Pakistan	28	36	25

married women who had used specified methods[a]

Condom				Other female scientific methods			
Problem	No problem	Missing data	Total	Problem	No problem	Missing data	Total
–	–	–	–	–	–	–	–
7	93	0	100	–	–	–	–
1	99	0	100	–	–	–	–
12	85	4	100	–	–	–	–
–	–	–	–	–	–	–	–
4	93	4	100	0	96	4	100
–	–	–	–	–	–	–	–
–	–	–	–				
7	92	0	100				
1	99	1	100				
**	**	**	**				
–	–	–	–				
0	97	3	100				
–	–	–	–				
–	–	–	–				
6	94	0	100				
1	99	0	100				
**	**	**	**				
–	–	–	–				
**	**	**	**				
–	–	–	–				

Table 34 Per cent distribution by category of method use and visit by a family planning worker and by type of residence: currently married, exposed women below age 45

	Ever visited				Never visited			
	Efficient	Inefficient	None	Total	Efficient	Inefficient	None	Total
A All women								
Korea	42	11	47	100	32	10	58	100
Pakistan	10	3	87	100	3	1	96	100
B Urban								
Korea	46	13	40	100	34	11	55	100
Pakistan	17	7	77	100	9	3	88	100
C Rural								
Korea	38	10	52	100	30	7	63	100
Pakistan	7	2	92	100	1	1	98	100

6 Household Availability of Supplies

6.1 THE DATA

One of the features of the family planning module is a group of questions concerning the availability of contraceptive supplies in the respondent's home at the time of the interview. Women who reported that they had ever heard of the pill, other female scientific methods or the condom were to be asked first whether they had ever used the method and next whether they had any supplies in their home at the time.[9] Eight countries actually covered the topic, and four of them followed the format of the module (Colombia, Costa Rica, Paraguay, Venezuela). Nepal used the same approach but asked the question on possession of supplies only for the pill and the condom and restricted it to women who had ever used the method. Indonesia, Jordan and the Philippines provided a separate set of questions on possession of supplies after the method-specific inquiry into knowledge and ever-use had been completed. The Indonesian and Jordanian information, like that of Nepal, is limited to ever-users of the method, and Jordan also inquired only about the pill and the condom. For the Philippines other female scientific methods refers specifically to foam tablets.

6.2 LEVELS OF HOUSEHOLD AVAILABILITY

The overall level of household availability is shown separately for each of the three methods in tables 35, 36 and 37. For the purposes of these tables women who did not know of the method were assumed not to have any supplies in the house in Colombia, Costa Rica, Paraguay, Philippines and Venezuela, while it was assumed that all women who had never used the method did not possess supplies in Indonesia and Nepal.

In Indonesia and the Philippines women who failed to answer the questions were combined at the data processing stage with those who replied negatively. The small volume of missing data shown for other countries suggests that such questions pose little problem as far as obtaining a reply is concerned; this agrees with Rodríguez's finding (1977: 13). One might suspect that if the acquisition of condoms were primarily the responsibility of the husband, the respondent herself could be uncertain whether there were supplies in the house or not, but this does not appear to be the case. Only for other scientific methods in Venezuela did as many as five per cent fail to answer. Rodríguez observed, moreover, that the responses given were reasonably valid in so far as almost all women who said they had a given method in the house were able subsequently to show it to the interviewer.

As would be anticipated from known patterns of contraceptive use, a far higher proportion of exposed women reported that they had pill supplies in the house than either other female scientific methods or condoms (Carrasco 1981). Well over a quarter of Costa Rican women had pill supplies, but this figure is less than half of one per cent in Nepal. About one woman in ten had condoms in her home in Costa Rica and the Philippines, and elsewhere the level was less than five per cent. Very few women possessed other female scientific methods in any of the countries where the information was collected. For Costa Rica and Indonesia the proportion having pill supplies may be slightly higher in rural areas, although typically the household availability of all three methods is lower among rural women.

6.3 KNOWLEDGE OF A SOURCE, TRAVEL TIME, VISITS IN THE LAST YEAR AND HOUSEHOLD AVAILABILITY

Possession of supplies represents the final step in the sequence covering the availability of contraception on which information was produced by the surveys. Tables 35, 36 and 37 show comparisons in the proportions possessing supplies by each of the major steps prior to this point. Looking first at the pill, between 7 and 31 per cent of women who knew a source of contraceptive assistance reported that they had pills in the house. This proportion is much larger than that for those who did not know a source (table 35). However, in five out of the seven countries some women who said they did not know where to go for advice or supplies apparently did have pills at home, and the proportion is around 10 per cent in three cases (Colombia, Costa Rica, Venezuela). Again, a possible explanation is that these three are among the countries where some women who did know a source were likely to have been missed due to the placement of the question. Accessibility, as measured by travel time to the nearest source, does not appear to be related to the possession of pill supplies in the expected way in any of the four countries for which these data are available except Colombia. There is a positive relationship among

[9]The instructions to the interviewer in the family planning module regarding these questions are somewhat confusing. To begin with, any method the respondent named spontaneously as one she knew was to be noted, and these methods were then to be skipped in the subsequent detailed questionning on specific methods. However, the questions on possession of supplies in the home came up in the course of the latter and thus would be asked only of women who did not mention the method spontaneously but responded affirmatively to the probe as to whether or not they had ever heard of that method. In practice, in the cases where the country questionnaire used this format, the problem was evidently resolved during interviewer training or in the field, so that women who mentioned having heard of these methods spontaneously were also asked about possession of supplies in the home.

Table 35 Per cent having pill supplies in the house by knowledge of a source, travel time to nearest source, visit to a source in the previous year and by type of residence; per cent missing data by type of residence: currently married, exposed women below age 45[a]

	Had pill supplies								Missing data
	Knew source						Did not know source	Total	
	< 15 mins	15–59 mins	1+ hours	Visited	Did not visit	Total			
A All women									
Colombia	25	20	14	34	14	21	8	17	2
Costa Rica	28	32	33	55	6	31	12	29	0
Indonesia	–	–	–	48	14	29	2	18	–
Nepal	——— 8 ———		12	**	5	7	0	0	0
Paraguay	–	–	–	41	3	18	0	16	3
Philippines	–	–	–	–	–	11	1	9	–
Venezuela	19[b]	24[c]	19	37	14	22	10	19	0
B Urban									
Colombia	25	20	13	34	16	22	12	20	2
Costa Rica	26	32	42	51	7	29	14	28	0
Indonesia	–	–	–	39	6	21	1	14	–
Nepal	——— 10 ———		**	**	6	5	2	3	0
Paraguay	–	–	–	5	34	19	0	19	3
Philippines	–	–	–	–	–	13	1	12	–
Venezuela	20[b]	23[c]	20	14	36	22	12	20	0
C Rural									
Colombia	22	20	14	33	9	17	5	11	1
Costa Rica	35	33	32	59	4	33	11	30	0
Indonesia	–	–	–	50	16	31	2	19	–
Nepal	——— 8 ———		13	**	5	8	0	0	0
Paraguay	–	–	–	51	2	16	0	15	2
Philippines	–	–	–	–	–	10	1	8	–
Venezuela	**	28[c]	19	50	12	22	5	14	1

[a]Results are not shown for Jordan because the data were not available in a form compatible with the standard recode file.
[b]0–9 minutes.
[c]10–59 minutes.
NOTE: ** indicates less than 20 cases in the base; – indicates information not available.

urban women in Costa Rica and possibly also among rural women in Nepal, although the numbers there are very small. Like knowledge of a source, the differential by visits to a source in the last year is substantial and in the appropriate direction, but non-negligible numbers of women who did not visit a source nevertheless reported that they had pill supplies. This supports the notion that the question on visits to a source yielded an incomplete picture of use of services (see section 5.3).

The pattern is very much the same for other female scientific methods, although for most countries there is noticeably less difference in the proportions reporting that they had relevant supplies in their home by whether or not they had visited a source in the last year than was the case for the pill (table 36). Perhaps such methods are more often obtained from the kinds of source unlikely to be recognized as such. For the condom, this particular contrast is reduced even further; in Colombia and Venezuela there were as many women who had not visited a source as those who had said that they had supplies in their home (table 37). But as mentioned previously, there is less need for the woman herself to have had to visit a

Table 36 Per cent having other female scientific method supplies in the house by knowledge of a source, travel time to nearest source, visit to a source in the previous year and by type of residence; per cent missing data by type of residence: currently married women below age 45[a]

	Had other female scientific supplies								Missing data
	Knew source						Did not know source	Total	
	<15 mins	15–59 mins	1+ hours	Visited	Did not visit	Total			
A All women									
Colombia	6	7	4	7	5	6	1	4	3
Costa Rica	5	4	2	5	3	4	2	4	0
Paraguay	–	–	–	5	0	2	0	2	2
Philippines[b]	–	–	–	–	–	2	0	1	–
Venezuela	3[c]	2[d]	1	3	2	2	1	2	5
B Urban									
Colombia	6	8	4	7	6	6	2	6	3
Costa Rica	6	6	10	8	4	6	2	6	0
Paraguay	–	–	–	5	1	3	0	3	3
Philippines	–	–	–	–	–	2	0	2	–
Venezuela	4[c]	2[d]	2	3	2	3	1	2	5
C Rural									
Colombia	4	3	4	5	3	4	0	2	2
Costa Rica	2	2	1	2	1	2	2	2	0
Paraguay	–	–	–	3	0	1	0	1	1
Philippines	–	–	–	–	–	1	0	1	–
Venezuela	**	0[d]	1	1	0	1	0	0	2

[a]Results are not shown for Indonesia because only 35 currently married women reported having used this method.
[b]Methods limited to foam tablets.
[c]0–9 minutes.
[d]10–59 minutes.
NOTE: ** indicates less than 20 cases in the base; – indicates information not available.

source of any kind to obtain condoms than the other methods.

6.4 HOUSEHOLD AVAILABILITY AND USE OF CONTRACEPTION

Both because of the proximity of household availability to the use of contraception and because the information was collected on a method-specific basis, it is particularly interesting to examine these data in conjunction with those on methods currently used. The proportion of women using each method who had supplies in the house and the proportion of women possessing supplies who were using the method are presented in tables 38, 39 and 40. This is one of the topics that was explored in depth in the 1976 WFS pilot study, the findings of which demonstrated considerable lack of correspondence between household availability and use of individual methods (Rodríguez 1977). Although the questions in the surveys themselves are less detailed than those in the pilot study, more countries are represented, and the sample sizes are very much larger.

The results for the pill and condom are shown broken down not only by type of residence but also by fertility preference, with the hope of gaining some further insight into the reasons for lack of correspondence. Specifically, it was hypothesized that, if women who said they were using a method but did not have supplies in the house might not have been using the method regularly, this phenomenon should be less apparent among those who wanted no more children and were thus most anxious to avoid pregnancy. The number of women using or possessing other female scientific methods is too small for

Table 37 Per cent having condom supplies in the house by knowledge of a source, travel time to nearest source, visit to a source in the previous year and by type of residence; per cent missing data by type of residence: currently married, exposed women below age 45[a]

	Had condom supplies								Missing data
	Knew source						Did not know source	Total	
	< 15 mins	15–59 mins	1+ hours	Visited	Did not visit	Total			
A All women									
Colombia	2	4	1	2	3	3	2	2	3
Costa Rica	17	10	8	15	9	12	4	11	0
Indonesia	–	–	–	7	3	5	0	3	–
Nepal	——4——		7	**	5	6	0	0	0
Paraguay	–	–	–	6	1	3	0	2	2
Philippines	–	–	–	–	–	13	2	10	–
Venezuela	5[b]	4[c]	1	3	4	4	3	4	1
B Urban									
Colombia	2	5	1	3	4	3	4	4	3
Costa Rica	18	13	13	20	12	16	10	15	0
Indonesia	–	–	–	19	9	14	1	9	–
Nepal	——0——		**	**	3	5	0	2	0
Paraguay	–	–	–	7	1	4	0	4	3
Philippines	–	–	–	–	–	13	2	12	–
Venezuela	5[b]	4[c]	2	3	5	4	4	4	1
C Rural									
Colombia	2	0	1	1	1	1	0	0	3
Costa Rica	11	7	8	11	5	8	2	7	0
Indonesia	–	–	–	5	2	3	0	2	0
Nepal	——7——		7	**	5	6	0	0	0
Paraguay	–	–	–	4	0	2	0	1	1
Philippines	–	–	–	–	–	12	1	10	–
Venezuela	**	1[c]	0	0	1	1	1	1	2

[a]Results are not shown for Jordan because the data were not available in a form compatible with the standard recode file.
[b]0–9 minutes.
[c]10–59 minutes.
NOTE: ** indicates less than 20 cases in the base; – indicates information not available.

such analysis. In these tables women who failed to answer the questions on possession of supplies are assumed not to have had them in the house (along with those who did not know the method and, in Indonesia and Nepal, those who had never used the method).

Both types of potential inconsistency noted by Rodríguez are clearly evident in these data. For the total samples, the per cent of women using the method who said they did not have any supplies in the house at the time of the interview ranges from 11 to 21 per cent for the pill, from 14 to 46 per cent for other female scientific methods, and from 24 to 56 per cent for the condom. In Costa Rica this group is somewhat smaller among pill users who did not want any more children than among those who did want more children, and the same may hold for both pill and condom users in Venezuela. Elsewhere there is little difference by preference, or the proportions may even be higher among those not wanting more children, as is the case for pill users in Colombia and condom users in Colombia and Costa Rica. Thus there is not much support for the idea that lack of real motivation to avoid pregnancy could be responsible for the failure to keep supplies at hand. For the pill more urban than rural users had no supplies in four out of six countries, while for the

Table 38 Per cent distribution of respondents using the pill by household availability of the pill, and per cent distribution of those having pill supplies by use of the pill, by fertility preference and by type of residence: currently married, exposed women below age 45[a]

	Using the pill			Had pill supplies		
	Had supplies	No supplies	Total	Using	Not using	Total
A All women						
Colombia	79	21	100	80	20	100
Costa Rica	89	11	100	90	10	100
Indonesia	83	17	100	95	5	100
Nepal	81	19	100	75	25	100
Paraguay	89	11	100	90	10	100
Philippines	86	14	100	57	43	100
Venezuela	80	20	100	81	19	100
Wanted more						
Colombia	82	18	100	75	25	100
Costa Rica	87	13	100	90	10	100
Indonesia	83	17	100	96	4	100
Nepal	**	**	**	**	**	**
Paraguay	89	11	100	90	10	100
Philippines	87	13	100	57	43	100
Venezuela	78	22	100	81	19	100
Wanted no more						
Colombia	77	23	100	85	15	100
Costa Rica	93	7	100	90	10	100
Indonesia	83	17	100	94	6	100
Nepal	**	**	**	**	**	**
Paraguay	90	10	100	89	11	100
Philippines	85	15	100	57	43	100
Venezuela	82	18	100	80	20	100
B Urban						
Colombia	76	24	100	78	22	100
Costa Rica	87	13	100	89	11	100
Indonesia	92	18	100	87	13	100
Nepal	**	**	**	**	**	**
Paraguay	86	14	100	88	12	100
Philippines	83	17	100	60	40	100
Venezuela	79	21	100	80	20	100
C Rural						
Colombia	88	12	100	86	14	100
Costa Rica	91	9	100	92	8	100
Indonesia	82	18	100	96	4	100
Nepal	**	**	**	76	24	100
Paraguay	92	18	100	92	18	100
Philippines	89	11	100	55	45	100
Venezuela	87	13	100	81	19	100

[a]Results are not shown for Jordan because the data were not available in a form that was compatible with the standard recode file.
NOTE: ** indicates less than 20 cases in the base.

Table 39 Per cent distribution of respondents using other female scientific methods by household availability of these methods and per cent distribution of those having other female scientific methods supplies by use of these methods: currently married, exposed women below age 45[a]

	Using methods			Had methods supplies		
	Had supplies	No supplies	Total	Using	Not using	Total
Colombia	66	34	100	45	55	100
Costa Rica	86	14	100	49	51	100
Paraguay	76	24	100	46	54	100
Philippines	**	**	**	12	88	100
Venezuela	54	46	100	38	62	100

[a]Results are not shown for Indonesia because of the very small number of women reporting ever use of other female scientific methods.
NOTE: ** indicates less than 20 cases in the base.

Table 40 Per cent distribution of respondents using the condom by household availability of the condom, and per cent distribution of those having condom supplies by use of condom, by fertility preference and by type of residence: currently married exposed women below age 45[a]

	Using condom			Had condom supplies		
	Had supplies	No supplies	Total	Using	Not using	Total
A All women						
Colombia	62	38	100	57	43	100
Costa Rica	70	30	100	66	34	100
Indonesia	76	24	100	62	38	100
Nepal	**	**	**	**	**	**
Paraguay	53	47	100	44	56	100
Philippines	72	28	100	34	66	100
Venezuela	44	56	100	73	27	100
Wanted more						
Colombia	67	33	100	52	48	100
Costa Rica	77	23	100	65	35	100
Indonesia	75	25	100	56	44	100
Nepal	**	**	**	**	**	**
Paraguay	62	38	100	47	53	100
Philippines	72	28	100	32	68	100
Venezuela	40	60	100	76	24	100
Wanted no more						
Colombia	58	42	100	62	38	100
Costa Rica	62	38	100	67	33	100
Indonesia	77	23	100	66	34	100
Nepal	**	**	**	**	**	**
Paraguay	**	**	**	**	**	**
Philippines	73	27	100	35	65	100
Venezuela	46	54	100	71	29	100
B Urban						
Colombia	69	31	100	56	44	100
Costa Rica	71	29	100	70	30	100
Indonesia	87	13	100	65	35	100
Nepal	**	**	**	**	**	**

[*Table continues*]

Table 40 (*cont*)

	Using condom			Had condom supplies		
	Had supplies	No supplies	Total	Using	Not using	Total
B Urban (*continued*)						
Paraguay	44	56	100	34	66	100
Philippines	69	31	100	35	65	100
Venezuela	44	56	100	72	28	100
C Rural						
Colombia	**	**	**	**	**	**
Costa Rica	67	33	100	57	43	100
Indonesia	69	31	100	59	41	100
Nepal	**	**	**	**	**	**
Paraguay	**	**	**	**	**	**
Philippines	75	25	100	33	67	100
Venezuela	**	**	**	**	**	**

[a]Results are not shown for Jordan because the data were not available in a form that was compatible with the standard recode file.
NOTE: ** indicates less than 20 cases in the base.

condom the situation is less clear since few comparisons by type of residence are possible. However, the evidence does not suggest that this phenomenon is associated with the greater effort required to obtain the pill outside of population centres.

The pattern of variation by method shown here is plausible. The pill must be taken for three or four weeks to be of any value, and thus users are less likely to be out of it than supplies for other methods at any given point. On the other hand, condom supplies may not be kept by the wife. When probed, most women in the pilot study who said they were taking the pill but did not have any in the house explained that they were momentarily out of them, although Rodríguez observed that in Panama, at least, the overall proportion of pill users in this situation was too high to be accounted for in that way. This sort of explanation would also appear to be inadequate to explain the levels shown in these data for several of the countries. Despite the lack of success in identifying a role attributable to motivation, it is difficult not to concur with Rodríguez's opinion that some women who reported themselves as current users may have been the victims of wishful thinking: perhaps they had used the method at one time, or they did so sometimes, or they intended to do so in the future, but they were not protected for the time being. Given the lack of time reference in the question on current use (and the ultimate difficulty of defining a time frame that would be appropriate for the range of possible methods), this is not necessarily surprising. Induced response could also enter in; especially in countries where the government was actively promoting fertility control, respondents may have felt under pressure in the interview situation to say that they were using contraception when this was not really the case. This finding is potentially important since the information on contraceptive use has been widely cited and is generally accepted at face value.[10]

The second question concerns non-reporting of use of a method by women who did have supplies in the house; this phenomenon is even more widespread than the first, at least for other female scientific methods and the condom. In all five of the countries covered, more of the

[10]Relatively little work has been done in the area of evaluation of the validity of survey information on contraceptive use, but studies based on WFS data are more apt to suggest under- than overreporting. Regarding ever-use of contraception, comparisons are made in the Fiji First Country Report of the information obtained from WFS sample women with Medical Department records for the same women, and in the Thai First Country Report of the information obtained from WFS sample women with that obtained from their husbands (Fiji Bureau of Statistics 1976: 81–2; Institute of Population Studies, Chulalongkorn University, and Population Survey Division, National Statistical Office of Thailand 1977: 32–4). The conclusion reached for both these surveys is that the reporting of ever-use was incomplete. However, the focus in the present case is on current use, which could well be subject to somewhat different patterns of error. A comparison of methods currently used as reported in the Sri Lanka Fertility Survey with results from the Family Health Baseline Survey carried out a few months earlier showed nearly identical proportions using each method except for rhythm and withdrawal. The latter methods were reported by considerably higher proportions in the FH Baseline Survey, due presumably, to the fact that the interviewers in that survey were instructed to probe these methods carefully (Immerwahr 1981: 22). A similar comparison of the Philippine Fertility Survey data on current use with those from the Community Outreach Survey revealed higher reporting of condoms, rhythm and withdrawal in the latter. Interestingly, among the explanations offered was the possibility of induced response in the case of the Community Outreach Survey, which, unlike the Philippine Fertility Survey, had been carried out by personnel closely associated with the family planning programme (Laing 1981: 43). In general, however, bias affecting one of a pair of surveys like these would be expected to be present also in the other, and comparisons of the results constitute a test of consistency rather than validity.

women who had supplies of other female scientific methods were actually not using these methods than were using them. Rodríguez (1977: 13) points to several ways in which women were able to rationalize this situation acceptably, usually indicating that the supplies in question were left over from previous use of the method. Explanations of that order fit in with the notion of intermittent use brought up above, although in most countries the majority of these respondents were currently using other methods, especially in the case of other female scientific methods and the condom, from which many women appear to have switched to the pill. The differences by fertility preference and type of residence are generally not very large, and regular patterns do not emerge. There are considerable differences between countries, however, and the proportion of women who had supplies but were not using them is particularly high for all three methods in the Philippines. Although this second problem may affect larger proportions of the samples, its implications are on the whole less critical than those of the first.

6.5 SUMMARY

Information on the household availability of individual contraceptive methods was collected in eight of the surveys, half of them being in Latin America. They all included the pill and the condom, and five also covered other female scientific methods. The questions were limited to women who had actually used the method at one time in Indonesia, Jordan, and Nepal. The level of non-response was satisfactorily low.

For obvious reasons, variation in the overall level of household availability is similar to that in the use of these methods. The proportion having each method in the house is consistently much higher for women who said they knew a source of contraceptive advice and supplies than for women who did not know a source. Among the former, those who had visited a source in the last year were also more likely to possess supplies of each method, although the contrast is less striking for other female scientific methods, and especially for the condom, than for the pill. Nevertheless in most countries a not insignificant fraction of women who reported that they did not know a source, or that they knew a source but had not visited one in the last year, persistently appears to have had supplies in the house. Under-reporting of both knowledge of source and visits to a source seems to be the most plausible explanation.

Comparison of household availability with current use of the three methods reveals only a modest association. In every country, there is a fairly large group of respondents who claimed that they were using each method but had no supplies in the house. Although the connection between the two pieces of information is not as straightforward as might at first be taken to be the case, it seems in balance that exaggeration of method use could be a factor. The proportion of women who possessed supplies but were not actually using the method is also very substantial. Both phenomena are more characteristic of other female scientific methods and the condom than of the pill. In short, the principal value of these data appears to be the opportunity they provide for evaluation of the information on current use; the fact of having a method in the house does not carry sufficient implications for use to be very useful as an analytical tool.

7 Conclusions

Information collected by the WFS regarding the availability of contraceptive services has been reviewed in this report. Results are presented for 21 countries. The main purposes of the study were to present descriptive tabulations, to evaluate the usefulness of specific items and to explore the consistency of related pieces of information. Because it represented the first opportunity to examine the response to the method-specific questions on knowledge of sources and their accessibility that were included in five of the more recent surveys, these data have been treated in somewhat greater depth. These conclusions are assembled under two headings: specific comments related to data assessment and more general substantive observations.

7.1 DATA ASSESSMENT

(1) Knowledge of a general source of family planning advice or supplies has very often been significantly under-reported. The most obvious problem is placement of the question at the very beginning of the section of the questionnaire dealing with knowledge and ever-use of contraceptive methods. In order to ensure that the term 'family planning' is properly understood, it may be essential to review the roster of individual methods before asking about knowledge of sources. This almost certainly explains the fact that in Colombia, Mexico, Panama and Venezuela many women who said they did not know any source later reported that they were using a method requiring contact with the service system. However, the results for Costa Rica and Trinidad and Tobago, where the format of the questionnaire was the same but awareness and practice of family planning are more widespread, show little or no such effect. In addition, certain kinds of source(s) for certain methods were probably frequently overlooked. Indirect evidence suggests that women responded to the question on knowledge of a general source mainly in terms of family planning centres or clinics (see (5) below). A third problem is that, although lack of knowledge of a method does not always entail ignorance of where to go to find out, respondents who did not recognize any specific method of contraception were sometimes excluded from the question on knowledge of a source of advice or supplies. Ghana, Kenya, Lesotho and Nepal are the countries where these women were explicitly omitted, and the wording of the questions used in Mexico and Panama would appear to have had the same result. It should be noted that although there is provision in the family planning module to ask women who knew no individual method about their knowledge of sources of advice and supplies, this question is not included in the supplement to the core questionnaire.

(2) The reporting of knowledge of contraceptive sources was more complete when the inquiry was conducted separately for individual methods than when a single general question was asked. This is shown by the comparison of the general and the method-specific results for Venezuela and by the greater consistency of the method-specific results with the information on current contraceptive use. Nevertheless it is possible that knowledge of sources for individual methods was under-reported in the Philippines, due to the fact that eligibility for these questions was restricted there to women who had replied affirmatively to a general question as to whether or not they knew where they could obtain contraceptive supplies. Also, women who had had contraceptive sterilizations, or whose husbands had been sterilized, were excluded from the questions on knowledge of method sources and their accessibility in Sudan. Since the number of women involved is negligible, the resulting noncomparability with other countries is minor in this case, but the omission could be serious because users of each method must be included in order to study the impact of availability on use.

(3) Variation in the wording of the questions concerning general contraceptive sources with regard to 'advice', 'information', 'supplies' or some combination of these had no discernible effect on the results.

(4) Reference to the 'nearest' outlet in the questions on general sources is inappropriate. Sources for the condom are often closer than those for other methods, for instance, and any respondent who knew a source for the condom should in theory have replied in those terms even though she and her husband might never consider using the condom. In this sense it is probably fortunate that the answers seem frequently to have referred to a family planning clinic or a source the respondent would use. For individual methods reference to the 'nearest' source, as was the case in the Venezuelan survey, offers less scope for mis-statement.

(5) Most respondents were able to identify the type of source they knew, had visited, or where they had obtained supplies. It nevertheless seems probable that certain types of place were often omitted in the reporting of places known and visited, specifically shops and pharmacies on the one hand and family planning field workers on the other. Explicit mention of types of source of particular interest is likely to improve the response, as has been found with respect to contraceptive methods. However the classification most relevant to programme planning is not necessarily one that is readily perceived by the lay person, eg a family planning clinic run by the public health service as opposed to one under private auspices. The value of the data on types of sources where supplies

were obtained is greatly reduced when the associated information on the method currently or most recently used is not available. The diverse coding schemes adopted in the various countries for the material on types of sources render inter-country comparisons virtually impossible. Within countries the value of the data is limited when significant proportions of the supplies are assigned to a residual 'other' category, as happened in Indonesia.

(6) Four indicators of source accessibility were used in various of the country questionnaires: one-way travel time, actual distance, means of transportation and cost of transportation. In general, reporting problems arose only with regard to distance to a source, for which the level of non-response is consistently very high. The large volume of missing data on travel time to method sources for Sudan may have resulted from error on the part of the interviewers. For Ghana the data on travel time and means of transportation to method sources differ from those of other countries in that, for all methods except female sterilization, there was a substantial group of women who were not asked these questions because they mentioned a family planning field worker or a mobile clinic as the type of source they would use. The extent to which similar circumstances may have existed elsewhere without being explicity recognized in the questionnaire is not known.

(7) The quality of the data on method costs is very poor. In Ghana and Sudan only a small minority of women responded to the questions regarding how much they thought they would have to pay. Moreover cost estimates were sometimes obtained when the service was in theory available at no charge.

(8) The way in which data on travel time, means of transportation and method costs are coded has a substantial bearing on their ultimate usefulness. Grouping of continuous variables, such as travel time and costs, in broad classes limits their analytical value. The main problem with a nominal variable, such as means of transportation, is the presence of an unduly large undesignated residual category.

(9) Because of the incompleteness of the information on knowledge of a general source, the proportions of women who had ever visited a source and those having done so in the last year were also under-estimated in many countries.

(10) Experience with information regarding the evaluation of services provided was mixed. Where there was a question on the amount of time spent waiting for attention on the last visit to a family planning outlet, the results appear to be both reasonable and complete. In contrast, the question on whether the respondent was satisfied with the attention she received proved to be essentially useless because very few women admitted to dissatisfaction. Similarly, only a small fraction of respondents indicated that they would not return to the same outlet again in the future, and moreover the reasons given for not intending to go back frequently and justifiably had little to do with the quality of the service.

(11) The rather speculative questions asked in some countries of women who knew of a contraceptive source but had not been to one in the last year about whether they had thought of going and if so why they had not gone, did shed some light on underlying obstacles to contraceptive use. The coding of the open-ended question on reasons for not going is nevertheless difficult.

(12) The data collected on experience of problems in obtaining supplies of the pill, condom and other female scientific methods have many limitations. In Pakistan a high proportion of women did not answer the question. In most other countries almost no respondents mentioned problems of any kind. The questioning procedure, which requires a complicated check-back by the interviewer, led to problems in at least one country (Nepal). Finally, the data are not particularly useful when unaccompanied by the information on the specific methods to which they are related.

(13) There were no discernible problems with the information for Korea and Pakistan on visits by a family planning worker.

(14) The data on household availability of supplies appear to be of satisfactory quality although no attempt was made to validate the possession claimed.

7.2 SUBSTANTIVE OBSERVATIONS

(1) Despite the under-reporting of knowledge of general contraceptive sources, it is clear that there are substantial differences both among and within countries in the proportions of women who knew where they could go for advice and supplies. Except where almost all women knew of at least one source, there was a sizeable gap between knowledge of methods and knowledge of sources. Knowledge of contraceptive sources is not closely linked with the desire to terminate childbearing. Patterns of variation by socio-economic and demographic characteristics in the proportions of all women who knew a source of contraceptive assistance are largely repeated in the proportions of the latter group who had visited a source.

(2) For individual methods the reported levels of knowledge of source, travel times, means of transportation and costs of service vary distinctly from one method to another. Differentiation of contraceptive availability and accessibility on this basis thus appears to be meaningful to individual women. Furthermore, the patterns are reasonably consistent across countries. Sources for the pill are most widely known; the journey to get there is usually relatively short and can often be done by a means that does not involve direct payments; the cost of service is quite low. Fewer women know where to find the IUD; it requires a somewhat longer journey, which is more apt to be on public transportation, and the device is thought to cost considerably more. Sources for the condom are sometimes least well known despite the fact that a brief trip on foot is usually all that is necessary, and the short-run expenses are fairly minor. The level of awareness of sources for female sterilization is also generally comparatively low, but in this case the trip may be quite long and it may be expensive; moreover, the operation itself is perceived as costly.

(3) A large proportion of the women who were aware of a source for one of the four principal methods of contraception was likely to know of sources for other methods as well, especially in countries where the practice of fertility control was better established. Choice among methods would have been a relevant issue to this extent. However, many of those who knew sources for more than one method reported the same or similar travel times to all of them, which suggests that the relative accessibility of different methods plays a limited role in method selection.

(4) As has been demonstrated elsewhere, the length of the journey to a general contraceptive source made little difference to the use of efficient methods of contraception among women who knew where to find assistance. Moreover, the expected negative relationship did not emerge appreciably more clearly in tabulations based on data for sources of individual methods. The absence of any pronounced effect of travel time to a method source on use of that method was further corroborated in a multivariate analysis, the results of which did however suggest that the relative availability of alternate methods could be of some importance. Although travel time cannot be entirely ruled out as a factor affecting whether a woman who knows where to go to obtain contraception will use an effective method, the accumulated evidence suggests that its major role may lie in determining whether she knows a source in the first place. Once a woman does know a source, other aspects of accessibility are probably dominant. This interpretation fits with the fact that the range of reported travel times tends to be fairly short, a situation that has sometimes led to difficulty in establishing categories with sufficient contrast to be analytically meaningful. At the individual level, data on travel time can obviously be obtained only from respondents who already do know a source, and other types of information are needed to explore its effect on this prior knowledge. In contrast to the 'subjective' measures of travel time in question here, 'objective' measures derived from community-level data have been found to be reasonably strongly related to contraceptive use (Tsui, Hogan, Teachman and Welti-Chanes 1981); it is plausible that this reflects primarily their effect on knowledge of sources.

(5) The introduction of distribution systems which bring contraceptive services directly to the prospective client, rather than depending on the client to seek out the service, changes the nature of the availability issue significantly. It may no longer make sense in this context to phrase questions in terms of a place to which the respondent 'could go' for assistance. Travel to the source becomes more or less irrelevant while the frequency and regularity of the service presence are likely to be highly important. This circumstance was recognized in Ghana to the extent that the questions on travel were omitted for women who mentioned a family planning field worker or a mobile clinic as the type of source they would use. The question on visits by a family planning worker that was introduced in Korea and Pakistan represents an appropriate step toward broadening the frame of reference.

(6) In addition to problems related to the quality of the data and the form in which they are made available (mentioned in 7.1 (7) and (8) above), the information on the financial costs of the several methods is difficult to incorporate into an analytical framework because of the need to relate the unit purchased to a time period of coverage. Given the possible variation in expense from method to method, however, it is hardly reasonable to suppose that it is not a factor in individual decision making.

(7) The collection of method-specific information on contraceptive availability and accessibility lengthens and complicates the questionnaire for individual women. The data also require considerable time and effort for both processing and analysis. It is not yet clear whether the additional insight gained is sufficient to justify such an investment. On the one hand, as indicated above, differences between the various methods emerged quite clearly at the descriptive level (7.2 (2)). On the other hand, the single analytical effort that was attempted failed to demonstrate consistently greater effects of travel time on use for any particular method(s) (7.2 (4)). What it did suggest was that the method-specific approach does not succeed in achieving their isolation from one another.

(8) While the results for questions on visits to a source ever and visits during the last year do not bring out any findings unique to this step in the process of adoption of contraception, asking one or the other of these questions makes possible the selection of an appropriate sub-group of respondents of whom to inquire about types of source visited and various aspects of service acceptability. The fertility survey data overlap to a great extent at this point with evaluation studies based on programme clientele, but the point of view is more comprehensive in that sources and methods beyond the programme scope can be covered.

(9) The connection between household availability of supply methods and actual use of these methods is not sufficiently direct for the former to carry significant implications for contraceptive behaviour. The high proportion of women who say that they are using a particular method but do not have any supplies at hand nevertheless raises some questions about the meaning of the data on current use.

(10) Separate examination of the results for urban and rural areas revealed marked and persistent differences. It is clear that contraception was less available to rural women at virtually every stage of the process, although in certain instances there was evidence of the success of programme efforts to redress this handicap. Because there was no standard definition of urban residence, quantitative evaluation of the variation from country to country in the relative disadvantage of rural residents is not possible. Not only was contraception more accessible to urban residents, but their situation was also more complex in terms of the number of methods available and the types of outlet from which they could choose. However there does not appear to be any reason to believe that the problem of contraceptive availability differs in any fundamental way for urban as opposed to rural women.

(11) The kinds of data covered in this report are for the

most part highly particular to each national setting, and the inferences that can be drawn from inter-country comparisons are often quite limited. The primary value of the information on contraceptive availability is certainly for purposes of policy development and programme evaluation in individual countries.

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Appendix A — Multivariate Analysis of Contraceptive Use among Women who Knew Method Sources

Prepared with John McDonald

INTRODUCTION

This analysis was designed to examine the effect of contraceptive accessibility on use among women who knew where to get assistance, using the method-specific information collected in five WFS surveys (Ghana, Paraguay, Philippines, North Sudan, Venezuela). Since knowledge of a source was ascertained with respect to individual methods, the eligible base population differs from method to method. Moreover, information on source accessibility could be obtained only from women who did know a source and pertains to the source of a given method. Hence each method must be analysed separately. Consideration here is limited to the four methods that were covered in all five surveys: pill, IUD, condom and female sterilization.

The data on knowledge of method sources refer to the time of the survey, and therefore the focus of attention is on current contraceptive practice. Several aspects of a woman's current use status are relevant to the issues at hand. The first point of interest is whether or not she was using the method under consideration. However, one would also like to take into account whether she was using any method at all. If so, the distinction between efficient methods other than the method in question and inefficient methods is important, both because knowledge of sources for other methods has a bearing only on the use of efficient methods and because the two groups of methods have quite different implications for fertility. Thus current contraceptive status can be summarized effectively for the purposes of this analysis as a nominal variable comprising four categories: use of the method in question, use of another efficient method, use of an inefficient method, and non-use.

The type of statistical procedure used was determined mainly by the nature of the dependent variable. The relationship between one or more explanatory variables and a polytomous dependent variable can be studied using a multinomial logistic statistical model. This model, which has come increasingly into use, is described in the next section.

METHODOLOGY

The relationship between a dichotomous response variable and explanatory variables has often been analysed by coding the dichotomous response variable as a 0–1 dummy variable and treating the dummy variable as the dependent variable in an ordinary least squares regression analysis. While such an approach has many technical statistical problems associated with it, a further difficulty is that it does not generalize to the case of a polytomous response variable. A binomial logistic model can also be used for studying the relationship between a dichotomous response variable and explanatory variables, and a generalization of this model, called the multinomial logistic model, can be used to study the relationships between a polytomous response variable and explanatory variables. A multinomial logistic model is used in the present analysis. The method of maximum likelihood estimation is used to obtain the parameter estimates.

Recall that if A and B are two mutually exclusive and exhaustive events, the ratio of the probabilities $pr(A)/pr(B) = pr(A)/(1 - pr(A))$ is called the odds in favour of 'numerator event' A (relative to 'denominator event' B). Most commonly, this ratio is approximated by a fraction y/x, where y and x are integers and expressed as odds of y to x in favour of the numerator event. Since there is a one-to-one correspondence between the odds in favour of an event and the probability of that event, the two concepts implicity convey the same information. For example, since the probability of giving birth to a male is 0.515 and $0.515/0.485 = 1.06$, one usually expresses the odds in favour of a male birth as 106 to 100. One may also interpret the odds as the ratio of the expected frequencies of the two events. Therefore, if the odds are y to x, where y and x are integers, one expects y numerator events for every x denominator events. For example, the odds of a male birth is the expected sex ratio at birth, ie, the expected number of male births per 100 female births is 106.

Since odds and probabilities are equivalent from an information standpoint, a statistical model may be formulated using either concept. The binomial logistic model for a dichotomous response assumes that the logarithm of the odds, known as the logit of the corresponding probability, is linearly related to the explanatory variables (in the same manner as in ordinary regression analysis). There are two possible log odds models which can be fitted to the data (one for each of the two possible odds). One of these models is 'redundant' in the sense that if one model has been fitted, the parameter estimates for the other model are easily derived. Since $\log (pr(A)/1 - pr(A)) = -\log (1 - pr(A)/pr(A)) = -\log (pr(B)/1 - pr(B))$, one can easily show that the parameter estimates for the redundant model are found by changing the sign of the parameter estimates for the model fitted 'directly'. The choice of which model to fit is arbitrary, and the overall goodness-of-fit statistics for the two models are identical. However, the interpretation of the parameter estimates depends on which event corresponds to the numerator probability of the odds and which event corresponds to the denominator probability of the odds.

The multinomial logistic model may be expressed as a set of 'correlated' logistic models. For a polytomous

response variable with k responses, a set of $k-1$ correlated logistic models is needed to describe the relationship between the response variable and the explanatory variables. There are $k(k-1)$ possible log odds models (one for each of the $k(k-1)$ possible odds). Note that all but $k-1$ of these models are redundant in the sense that the parameter estimates for these models can be found by changing the sign of the parameter estimates and/or by differencing the parameter estimates of the $k-1$ 'non-redundant' models fitted directly. The choice of which set of $k-1$ non-redundant models to fit directly is arbitrary and the goodness-of-fit statistics for any such set are identical. The set of $k-1$ non-redundant logistic models used in the present analysis assumes that the logarithm of the odds of a given response relative to an arbitrarily chosen response, called the reference or omitted response, is linearly related to the explanatory variables. There are $k-1$ sets of regression parameters estimated directly and each set corresponds to a particular odds with the reference response corresponding to the denominator probability of the odds. The interpretation of the parameter estimates for any log-odds model depends on which response corresponds to the numerator probability of the odds and on which response corresponds to the denominator probability of the odds.

The interpretation of the parameter estimates for the binomial and multinomial logistic models is the same. For example, when a dichotomous explanatory variable is coded as $0-1$ dummy variable, this dummy variable's parameter estimate, when exponentiated, can be interpreted as an odds ratio, ie, the ratio of two odds. If the response variable of interest is use/non-use of contraception, the ratio of the expected number of users for every non-user is of interest. If use of contraception is coded 1 for use and 0 for non-use and type of place of residence is coded 1 for urban areas and 0 for rural areas and the odds are 4 to 1 in urban areas and 2 to 1 in rural areas, the ratio of the odds in the urban areas to the odds in the rural areas is 2. A parameter estimate of 0.693 for type of place of residence yields an odds ratio of 2 since $\exp(0.693)=2$. An odds ratio of 2 for type of place of residence means that the expected number of users for every non-user is twice as high in urban areas as compared to rural areas or, in other words, the expected relative frequency in urban areas is double the expected relative frequency in rural areas. When a polytomous explanatory variable is coded using a set of dummy variables in the usual manner, the parameter estimates, when exponentiated, can be interpreted as the ratio of the odds for each (non-reference) category and the odds for the reference or omitted category of the explanatory variable.

Unfortunately, computer programs for directly fitting multinomial logistic models are not widely available. Fortunately, there is a close relationship between log–linear and logistic–linear modelling which enables one to fit a logistic model indirectly by fitting an appropriate log–linear model. Details are given in Nelder and Fienberg.[11] Since the appropriate log–linear model for this analysis includes the highest order interaction term involving all the explanatory factors (and all such lower order interactions), a large number of parameters were estimated (63 to 72 parameters depending on which model was fitted). Because the computational demands of the log–linear modelling were very considerable, it was essential to use a parsimonious model.

The computer package used for the log–linear modelling was GLIM, Release 3.[12] The parameter constraints used by GLIM to express the linear structure of the model correspond to the usual dummy variable coding of a categorical variable with the first level of each factor taken as the baseline, reference or omitted category. If the default GLIM parameter constraints are used when fitting the log–linear model, one obtains the parameter estimates for the logistic model corresponding to the logarithm of the odds of the jth response relative to the first response by selecting those terms in the log–linear model which involve the jth level of the dependent variable and by disregarding the other terms. These parameter estimates, when exponentiated, can be interpreted as the estimated ratio of the odds for each non-reference category of the explanatory variable and the reference category.

SPECIFICATION OF THE MODEL

The model for this analysis included five explanatory variables in all. Two relate to contraceptive accessibility: travel time to a source for the method under consideration and the availability of alternative methods. The three others represent background characteristics of the respondents. The operational definitions of each variable are described in turn below. Whenever the definition of categories was not predetermined, ie for all the variables except type of residence, these decisions were based on both the distributions of the samples and substantive considerations.

Travel time to the source the respondent would use is the only independent variable that was not defined as a simple dichotomy. It is grouped in three categories. Because the reported travel times varied by method in a way that is fairly consistent from country to country, the categories are not identical for the four methods. For the condom, which typically required a relatively short trip, the categories are: less than 15 minutes, 15 to 29 minutes, and half an hour or more. For the pill and the IUD they are: less than 15 minutes, 15 to 59 minutes, and one hour or more. For female sterilization, which often was not available nearby, the categories are: less than half an hour, 30 to 59 minutes, and one hour or more. The shortest duration was always designated as the reference category.

The variable representing the availability of alternative methods was designed to incorporate both whether or not the respondent knew of a source for any other efficient method(s) and, if so, how the travel time compared to the travel time for the method in question. Four possibilities existed: that she did not know of a

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source for any other method, that she knew of one or more and all required more travel time, at least one could be reached in equal time, or, finally, at least one could be reached in less time. Sources for all efficient methods on which the information existed were considered, including injection and other female scientific methods for Ghana and injection for Sudan. Like travel time itself, the distributions of the samples on this variable differed systematically by method, and thus the final dichotomy was not defined in precisely the same way for all methods. For the pill and the condom, the same and shorter travel times constituted one category, while longer travel time and no knowledge of a source for another method constituted the other. For the IUD and female sterilization, shorter travel time constituted one category, and all three remaining possibilities constituted the other. The category including shorter travel time was uniformly designated as the reference category.

Number of living children was introduced to represent a closely associated group of demographic characteristics that presumably have a bearing on contraceptive use, including age, marriage duration and fertility preference (whether or not more children are wanted), as well as family size. The choice among them was more or less arbitrary as arguments can be made in favour of any one of these variables. The important distinction to capture appeared to be that between 'large' and 'small' families, and the former was defined as five or more children. Four or fewer children was designated as the reference category.

Socio-economic status was represented by type of residence and education. As throughout this report, type of residence consisted of the urban/rural classification supplied by each country. This variable was chosen rather than region because of its simplicity. Urban residence was designated as the reference category.

Because of the differences among educational systems as well as the disparities in the average number of years of schooling, it is particularly difficult to establish an educational classification that is meaningful across countries. 'More' education was eventually distinguished from 'less' education by whether or not a woman had been at school for at least six years. In most countries this represented completion of primary education and thus a reasonable breaking point in the educational continuum. In Sudan the proportion of respondents having reached this level was very low, however, while it was quite high in the Philippines.

The respondents considered in each analysis were limited not only to women who knew a source for the method in question but also to those who were exposed to the risk of pregnancy, ie were fecund and not pregnant, and had valid codes on all of the explanatory variables. The distribution of the dependent variable for each sample and the total number of respondents are shown in table A1. For Sudan, the pill is the only method having a sufficient number of eligible women to warrant study; in addition, Sudanese women who reported that they had been sterilized for contraceptive purposes were not asked the questions on knowledge of sources, precluding the possibility of analysis of that method and necessitating the exclusion of this small group of women from the analysis of the pill.

EFFECTS OF TRAVEL TIME AND THE AVAILABILITY OF ALTERNATIVE METHODS ON CURRENT USE

The results for the all main effects model are shown in tables A2 to A5, one table being devoted to each method. The pairs of categories of the dependent variable are arranged so that comparisons involving the method in question appear first, and the overall ordering proceeds generally from 'higher' to 'lower' use statuses. Within each pair the method in question or the 'higher' use status is in the left-hand position, and positive parameter estimates can be interpreted as favouring this category relative to the other, while negative estimates are unfavourable to this category as opposed to that in the right-hand position. Travel time and knowledge of sources for other methods, the two measures related to availability, are the principal focus of attention in the discussion that follows. The three other independent variables serve primarily as controls, although elucidation of their role as determinants of contraceptive use is also of interest.

All six parameter estimates are given for each non-reference category of the independent variables (as well as the constant term representing the combination of reference categories). However, some of the independent variables are more relevant to the comparisons between certain pairs of categories of the dependent variable than others. For example, travel time to a source for a given method would be expected to have a bearing on the three comparisons involving that method but not necessarily on the remaining three comparisons, while education might have less effect on the choices among efficient methods than on other comparisons, especially those involving non-use. The standard error of each estimate is also given; individual estimates having absolute values less than about double the size of their standard error are not significant at the 0.05 level. The significance of each of the independent variables as a whole is also indicated, mainly as a guide to the location of the more important results (p values). Both the standard error and overall statistical significance are partly a function of sample size, which varied considerably among countries and among methods but was much the largest in the Philippines for all methods (table A1).

A model including a number of two-way interactions was also tested. The results showed that interactions of this order play a minor role, and to keep from burdening the main presentation, their consideration is postponed to the end of the discussion.

It was hypothesized that longer travel time, as an indicator of less accessibility, would be associated with a lower likelihood of using the method in question. On the whole the results suggest that travel time is not important. The pattern of estimates conforms most closely to expectation for the condom in the Philippines: all the estimates involving the condom directly are negative, all are more than double their standard error, and those for the longest duration category are larger than those for the intermediate one, indicating that increasing travel time was associated with a decreasing likelihood of using the condom as opposed to each of the other use statuses. Even so, the overall impact of this factor on use is not

Table A1 Per cent distribution by contraceptive use status and number of respondents for the pill, IUD, condom and female sterilization: currently married, exposed women below age 45 who knew a source for the method and for whom there were valid data on all the other variables included in the multinomial logistic model

	Ghana	Paraguay	Philippines	Sudan (N)	Venezuela
Pill					
Using pill	9	19	8	25	21
Using other efficient method	8	17	21	3	29
Using inefficient method	5	17	30	3	15
Not using	78	47	41	69	25
Total	100	100	100	100	100
Number of respondents	1126	1596	5126	451	1637
IUD					
Using IUD	2	10	5	–	12
Using other efficient method	17	29	25	–	38
Using inefficient method	6	19	30	–	15
Not using	76	42	40	–	35
Total	100	100	100	–	100
Number of respondents	773	1315	4830	78	1545
Condom					
Using condom	3	4	7	–	8
Using other efficient method	19	39	23	–	45
Using inefficient method	6	21	30	–	15
Not using	72	36	40	–	31
Total	100	100	100	–	100
Number of respondents	604	982	5027	41	1295
Female sterilization					
Sterilized	3	5	10	–	11
Using other efficient method	9	23	22	–	38
Using inefficient method	13	37	31	–	15
Not using	75	35	37	–	36
Total	100	100	100	–	100
Number of respondents	573	763	4180	–[a]	1516

[a]Sudanese women who had contraceptive sterilization operations or whose husbands had been sterilized were not asked the questions on knowledge of method sources.

very great. A few of the individual estimates are large enough to be significant for the condom in Ghana and Venezuela as well and for the IUD in Venezuela, but most of them relate to comparisons which do not directly involve the method in question, and, especially for the condom in Ghana, it is not easy to make out any regular pattern.

The relationships that might be anticipated with respect to the variable representing the availability of other efficient methods are somewhat complex. If a respondent did not know of a relatively accessible source for another efficient method, this should have decreased the likelihood of her using such a method, resulting in positive values for the first of the six estimates and negative values for the fourth and fifth; it might have increased the likelihood that she would use the method in question as opposed to an inefficient method or no method at all, in which case the second and third estimates would be positive. The results for this variable are given in the final columns of each table. The availability of other methods does appear to have had some impact on use.

This emerges most clearly in the results for the pill, but there is evidence of its effect in the analysis for all methods in the Philippines. The estimates for the likelihood of using the pill as opposed to another efficient method are positive for all five countries and are large enough to be significant in the Philippines, Venezuela and possibly Sudan. In Paraguay and Venezuela, lack of awareness of an equally accessible source for another efficient method seems also to have reduced the likeli-

Table A2 Parameter estimates and standard errors for the six logit models corresponding to the multinomial logistic model with outcomes = using pill, using other efficient method, using inefficient method, not using: currently married, exposed women below age 45 who knew a source for the pill

	Constant		Travel time				Living children 5+		Residence Rural		Education 6+ years		Other method source Longer, none	
			15–19 mins		60+ mins									
	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE
Ghana									$p<0.01$		$p<0.01$			
Pill *vs* other efficient	−0.05	(0.47)	0.21	(0.34)	−0.32	(0.45)	0.41	(0.47)	−0.10	(0.34)	−0.16	(0.43)	0.32	(0.43)
Pill *vs* inefficient	0.21	(0.49)	0.07	(0.42)	−0.10	(0.49)	0.25	(0.47)	−0.71	(0.42)	0.50	(0.42)	1.10	(0.58)
Pill *vs* non-use	−2.46	(0.36)	0.31	(0.25)	−0.14	(0.34)	0.76	(0.32)	−0.71	(0.24)	0.74	(0.30)	0.63	(0.26)
Other efficient *vs* inefficient	0.27	(0.56)	−0.15	(0.42)	0.21	(0.48)	−0.16	(0.51)	−0.61	(0.43)	0.66	(0.43)	0.78	(0.63)
Other efficient *vs* non-use	−2.41	(0.77)	0.10	(0.26)	0.18	(0.33)	0.35	(0.37)	−0.61	(0.25)	0.90	(0.32)	0.31	(0.36)
Inefficient *vs* non-use	−2.67	(0.70)	0.25	(0.35)	−0.03	(0.37)	0.51	(0.37)	−0.00	(0.36)	0.24	(0.32)	−0.47	(0.53)
Paraguay									$p<0.001$		$p<0.001$		$p<0.001$	
Pill *vs* other efficient	0.29	(0.24)	−0.23	(0.21)	−0.21	(0.28)	0.05	(0.23)	0.64	(0.23)	−0.53	(0.21)	0.03	(0.26)
Pill *vs* inefficient	0.37	(0.24)	0.02	(0.22)	−0.21	(0.28)	−0.17	(0.21)	−0.01	(0.23)	−0.37	(0.21)	0.01	(0.25)
Pill *vs* non-use	−0.52	(0.19)	0.05	(0.19)	−0.29	(0.23)	−0.27	(0.17)	−0.30	(0.19)	0.26	(0.17)	−0.78	(0.19)
Other efficient *vs* inefficient	0.08	(0.25)	0.25	(0.22)	−0.00	(0.29)	−0.21	(0.23)	−0.65	(0.24)	0.16	(0.22)	−0.03	(0.28)
Other efficient *vs* non-use	−0.81	(0.21)	0.28	(0.19)	−0.08	(0.25)	−0.32	(0.20)	−0.94	(0.20)	0.79	(0.18)	−0.82	(0.22)
Inefficient *vs* non-use	−0.89	(0.21)	0.03	(0.20)	−0.08	(0.24)	−0.10	(0.18)	−0.30	(0.21)	0.63	(0.18)	−0.79	(0.21)
Philippines							$p<0.001$		$p<0.001$		$p<0.001$		$p<0.001$	
Pill *vs* other efficient	−0.83	(0.17)	0.20	(0.13)	0.27	(0.25)	−0.44	(0.13)	0.07	(0.13)	−0.09	(0.16)	0.88	(0.26)
Pill *vs* inefficient	−1.14	(0.16)	0.09	(0.12)	−0.09	(0.23)	−0.23	(0.12)	−0.41	(0.13)	0.03	(0.15)	1.07	(0.26)
Pill *vs* non-use	−1.80	(0.16)	0.06	(0.12)	−0.22	(0.22)	0.07	(0.12)	−0.58	(0.12)	0.53	(0.14)	0.93	(0.24)
Other efficient *vs* inefficient	−0.31	(0.12)	−0.11	(0.09)	−0.36	(0.17)	0.21	(0.09)	−0.48	(0.09)	0.12	(0.11)	0.19	(0.22)
Other efficient *vs* non-use	−0.97	(0.11)	−0.14	(0.09)	−0.49	(0.16)	0.51	(0.08)	−0.65	(0.09)	0.62	(0.10)	0.05	(0.20)
Inefficient *vs* non-use	−0.66	(0.09)	−0.03	(0.08)	−0.13	(0.12)	0.30	(0.07)	−0.17	(0.08)	0.50	(0.08)	−0.14	(0.20)
Sudan (North)							$p<0.05$				$p<0.001$			
Pill *vs* other efficient	0.51	(1.17)	0.87	(0.86)	2.40	(2.02)	−0.37	(0.89)	−2.72	(1.36)	0.42	(1.11)	1.08	(0.66)
Pill *vs* inefficient	2.18	(1.29)	−1.52	(1.38)	−2.49	(1.71)	0.69	(1.14)	−0.28	(1.02)	−0.85	(1.10)	0.98	(0.87)
Pill *vs* non-use	−1.53	(0.35)	0.10	(0.28)	0.15	(0.45)	0.74	(0.26)	−0.78	(0.38)	1.31	(0.28)	0.16	(0.28)
Other efficient *vs* inefficient	1.68	(1.69)	−2.40	(1.59)	−4.89	(2.59)	1.06	(1.41)	2.44	(1.63)	−1.27	(1.53)	−0.10	(1.05)
Other efficient *vs* non-use	−2.04	(1.15)	−0.78	(0.86)	−2.24	(1.99)	1.11	(0.88)	1.94	(1.30)	0.88	(1.10)	−0.92	(0.64)
Inefficient *vs* non-use	−3.71	(1.27)	1.62	(1.34)	2.64	(1.66)	0.05	(1.12)	−0.51	(0.97)	2.15	(1.08)	−0.82	(0.85)

Venezuela							$p<0.001$		$p<0.001$		$p<0.001$		$p<0.001$	
Pill *vs* other efficient	−0.28	(0.17)	0.11	(0.16)	0.25	(0.34)	−0.86	(0.18)	0.72	(0.26)	0.03	(0.17)	0.56	(0.26)
Pill *vs* inefficient	0.01	(0.20)	0.32	(0.19)	0.58	(0.43)	−0.12	(0.22)	0.05	(0.29)	0.27	(0.20)	0.24	(0.34)
Pill *vs* non-use	−0.58	(0.16)	−0.06	(0.15)	−0.05	(0.30)	−0.36	(0.18)	−0.20	(0.22)	0.57	(0.16)	−0.43	(0.22)
Other efficient *vs* inefficient	0.29	(0.18)	0.20	(0.18)	0.33	(0.43)	0.73	(0.20)	−0.67	(0.30)	0.24	(0.18)	−0.31	(0.35)
Other efficient *vs* non-use	−0.30	(0.15)	−0.17	(0.14)	−0.30	(0.28)	0.51	(0.15)	−0.92	(0.23)	0.54	(0.14)	−1.00	(0.31)
Inefficient *vs* non-use	−0.59	(0.18)	−0.37	(0.18)	−0.63	(0.40)	−0.23	(0.20)	0.25	(0.26)	0.31	(0.18)	−0.68	(0.26)

Table A3 Parameter estimates and standard errors for the six logit models corresponding to the multinomial logistic model with outcomes = using IUD, using other efficient method, using inefficient method, not using: currently married, exposed women below age 45 who knew a source for the IUD

	Constant		Travel time				Living children 5+		Residence Rural		Education 6+ years		Other method source Equal, longer, none	
			15–59 mins		60+ mins									
	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE
Ghana									$p<0.05$					
IUD *vs* other efficient	−1.43	(1.41)	0.25	(1.50)	−0.93	(1.46)	0.07	(2.23)	0.57	(0.99)	−0.33	(1.36)	−0.31	(0.86)
IUD *vs* inefficient	−0.98	(1.44)	0.05	(1.54)	−1.06	(1.51)	−0.35	(2.24)	0.18	(1.04)	0.27	(1.39)	0.35	(0.91)
IUD *vs* non-use	−3.35	(1.34)	0.53	(1.49)	−0.83	(1.43)	0.38	(2.20)	−0.16	(0.96)	0.49	(1.32)	−0.03	(0.84)
Other efficient *vs* inefficient	0.45	(0.72)	−0.20	(0.47)	−0.13	(0.57)	−0.42	(0.54)	−0.39	(0.48)	0.60	(0.53)	0.67	(0.44)
Other efficient *vs* non-use	−1.92	(0.47)	0.28	(0.25)	0.10	(0.33)	0.31	(0.36)	−0.73	(0.25)	0.82	(0.33)	0.29	(0.26)
Inefficient *vs* non-use	−2.37	(0.59)	0.48	(0.43)	0.23	(0.51)	0.73	(0.47)	−0.34	(0.43)	0.21	(0.44)	−0.39	(0.39)
Paraguay									$p<0.01$		$p<0.01$			
IUD *vs* other efficient	−1.37	(0.44)	0.24	(0.33)	0.20	(0.39)	0.15	(0.30)	−0.67	(0.31)	0.44	(0.27)	0.15	(0.25)
IUD *vs* inefficient	−1.06	(0.47)	0.45	(0.36)	0.22	(0.42)	−0.02	(0.32)	−0.83	(0.33)	0.35	(0.28)	0.37	(0.27)
IUD *vs* non-use	−1.50	(0.43)	0.33	(0.32)	0.07	(0.39)	−0.20	(0.29)	−1.07	(0.30)	0.80	(0.26)	−0.02	(0.25)
Other efficient *vs* inefficient	0.31	(0.35)	0.21	(0.28)	0.03	(0.32)	−0.17	(0.21)	−0.16	(0.23)	−0.09	(0.20)	0.21	(0.20)
Other efficient *vs* non-use	−0.14	(0.29)	0.10	(0.23)	−0.12	(0.26)	−0.35	(0.17)	−0.40	(0.18)	0.36	(0.16)	−0.18	(0.17)
Inefficient *vs* none-use	−0.45	(0.33)	−0.11	(0.27)	−0.15	(0.31)	−0.18	(0.19)	−0.24	(0.22)	0.44	(0.19)	−0.39	(0.19)
Philippines							$p<0.001$		$p<0.001$		$p<0.001$		$p<0.001$	
IUD *vs* other efficient	−1.42	(0.27)	0.22	(0.16)	0.35	(0.27)	−0.11	(0.15)	−0.46	(0.18)	−0.27	(0.19)	0.24	(0.18)
IUD *vs* inefficient	−1.34	(0.27)	0.13	(0.16)	0.15	(0.26)	0.02	(0.15)	−0.88	(0.18)	−0.10	(0.19)	−0.14	(0.18)
IUD *vs* non-use	−1.89	(0.26)	0.02	(0.16)	0.00	(0.26)	0.31	(0.15)	−1.02	(0.17)	0.38	(0.18)	−0.18	(0.18)
Other efficient *vs* inefficient	0.08	(0.15)	−0.09	(0.09)	−0.20	(0.14)	0.13	(0.08)	−0.42	(0.09)	0.17	(0.11)	−0.38	(0.10)
Other efficient *vs* non-use	−0.47	(0.14)	−0.20	(0.09)	−0.35	(0.14)	0.42	(0.08)	−0.56	(0.09)	0.65	(0.10)	−0.42	(0.09)
Inefficient *vs* non-use	−0.55	(0.13)	−0.11	(0.08)	−0.15	(0.12)	0.29	(0.08)	−0.14	(0.08)	0.48	(0.09)	−0.04	(0.09)
Venezuela				$p<0.05$					$p<0.01$		$p<0.001$			
IUD *vs* other efficient	−1.09	(0.34)	0.17	(0.26)	0.48	(0.34)	0.11	(0.20)	−0.38	(0.35)	−0.31	(0.19)	0.07	(0.25)
IUD *vs* inefficient	−0.35	(0.39)	−0.00	(0.31)	0.46	(0.41)	0.43	(0.24)	−0.59	(0.37)	−0.07	(0.22)	0.23	(0.29)
IUD *vs* non-use	−0.71	(0.34)	−0.35	(0.27)	−0.31	(0.34)	0.02	(0.20)	−0.89	(0.33)	0.26	(0.19)	−0.13	(0.24)
Other efficient *vs* inefficient	0.74	(0.32)	−0.17	(0.25)	−0.02	(0.33)	0.32	(0.20)	−0.21	(0.27)	0.24	(0.18)	0.16	(0.23)
Other efficient *vs* non-use	0.39	(0.24)	−0.52	(0.19)	−0.79	(0.24)	−0.08	(0.14)	−0.52	(0.20)	0.57	(0.13)	−0.20	(0.17)
Inefficient *vs* non-use	−0.35	(0.31)	−0.35	(0.25)	−0.77	(0.33)	−0.41	(0.20)	−0.31	(0.25)	0.33	(0.18)	−0.36	(0.22)

Table A4 Parameter estimates and standard errors for the six logit models corresponding to the multinomial logistic model with outcomes = using condom, using other efficient method, using inefficient method, not using: currently married, exposed women below age 45 who knew a source for the condom

	Constant		Travel time				Living children 5+		Residence Rural		Education 6+ years		Other method source Longer, none	
			15–29 mins		30+ mins									
	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE
Ghana				$p<0.05$										
Condom *vs* other efficient	−1.47	(0.85)	−0.19	(0.74)	−0.57	(0.86)	0.57	(0.91)	−0.28	(0.69)	−0.28	(0.86)	1.26	(0.99)
Condom *vs* inefficient	−0.83	(0.85)	−0.72	(0.83)	−0.23	(1.08)	0.37	(1.10)	−0.27	(0.76)	0.49	(0.90)	0.14	(1.04)
Condom *vs* non-use	−3.09	(0.74)	0.64	(0.73)	−0.23	(0.84)	1.04	(0.87)	−0.77	(0.66)	0.32	(0.79)	1.02	(0.92)
Other efficient *vs* inefficient	0.64	(0.62)	−0.53	(0.51)	0.34	(0.73)	−0.20	(0.75)	0.01	(0.45)	0.77	(0.59)	−1.12	(0.63)
Other efficient *vs* non-use	−1.62	(0.44)	0.83	(0.30)	0.34	(0.29)	0.47	(0.37)	−0.49	(0.24)	0.60	(0.39)	−0.24	(0.41)
Inefficient *vs* non-use	−2.26	(0.45)	1.36	(0.48)	0.00	(0.70)	0.67	(0.69)	−0.50	(0.41)	−0.17	(0.45)	0.88	(0.52)
Paraguay							$p<0.05$		$p<0.01$					
Condom *vs* other efficient	−2.87	(0.59)	0.31	(0.48)	−0.08	(0.54)	0.81	(0.54)	0.28	(0.58)	0.58	(0.56)	1.12	(0.74)
Condom *vs* inefficient	−2.11	(0.60)	0.49	(0.50)	−0.00	(0.55)	0.47	(0.54)	0.04	(0.59)	0.50	(0.57)	1.14	(0.71)
Condom *vs* non-use	−2.56	(0.59)	0.62	(0.50)	0.08	(0.55)	0.19	(0.53)	−0.49	(0.58)	0.81	(0.56)	0.98	(0.74)
Other efficient *vs* inefficient	0.75	(0.25)	0.18	(0.25)	0.08	(0.25)	−0.35	(0.24)	−0.24	(0.26)	−0.07	(0.23)	0.02	(0.35)
Other efficient *vs* non-use	0.31	(0.21)	0.31	(0.23)	0.16	(0.23)	−0.62	(0.20)	−0.78	(0.23)	0.23	(0.19)	−0.15	(0.32)
Inefficient *vs* non-use	−0.44	(0.26)	0.13	(0.28)	0.09	(0.27)	−0.28	(0.23)	−0.54	(0.27)	0.31	(0.23)	−0.17	(0.37)
Philippines				$p<0.05$			$p<0.001$		$p<0.001$		$p<0.001$		$p<0.01$	
Condom *vs* other efficient	−1.23	(0.19)	−0.43	(0.18)	−0.50	(0.19)	0.08	(0.13)	0.51	(0.14)	−0.13	(0.17)	0.80	(0.24)
Condom *vs* inefficient	−1.45	(0.18)	−0.37	(0.18)	−0.63	(0.18)	0.17	(0.13)	−0.05	(0.13)	0.01	(0.16)	0.97	(0.24)
Condom *vs* non-use	−2.08	(0.17)	−0.37	(0.18)	−0.66	(0.18)	0.47	(0.13)	−0.23	(0.13)	0.49	(0.15)	0.89	(0.23)
Other efficient *vs* inefficient	−0.22	(0.12)	0.06	(0.11)	−0.13	(0.11)	0.09	(0.08)	−0.56	(0.09)	0.14	(0.11)	0.17	(0.20)
Other efficient *vs* non-use	−0.85	(0.11)	0.06	(0.10)	−0.16	(0.11)	0.39	(0.08)	−0.74	(0.09)	0.62	(0.10)	0.09	(0.19)
Inefficient *vs* non-use	−0.63	(0.10)	0.00	(0.09)	−0.03	(0.09)	0.30	(0.07)	−0.18	(0.08)	0.48	(0.08)	0.08	(0.18)
Venezuela				$p<0.05$					$p<0.05$		$p<0.05$			
Condom *vs* other efficient	−1.51	(0.25)	−0.01	(0.31)	0.49	(0.38)	−0.38	(0.30)	0.15	(0.48)	−0.06	(0.26)	−0.21	(0.37)
Condom *vs* inefficient	−0.69	(0.28)	0.11	(0.35)	0.93	(0.44)	0.01	(0.34)	−0.40	(0.53)	0.10	(0.29)	−0.12	(0.41)
Condom *vs* non-use	−1.28	(0.26)	−0.44	(0.31)	0.18	(0.38)	−0.10	(0.31)	−0.52	(0.49)	0.36	(0.26)	−0.14	(0.39)
Other efficient *vs* inefficient	0.81	(0.19)	0.12	(0.23)	0.44	(0.33)	0.39	(0.21)	−0.56	(0.32)	0.16	(0.19)	0.09	(0.26)
Other efficient *vs* non-use	0.22	(0.15)	−0.43	(0.17)	−0.32	(0.23)	0.28	(0.16)	−0.68	(0.23)	0.42	(0.15)	0.07	(0.21)
Inefficient *vs* non-use	−0.59	(0.20)	−0.55	(0.24)	−0.76	(0.33)	−0.11	(0.23)	−0.12	(0.31)	−0.26	(0.20)	−0.03	(0.28)

Table A5 Parameter estimates and standard errors for the six logit models corresponding to the multinomial logistic model with outcomes = respondent sterilized, using other efficient method, using inefficient method, not using: currently married, exposed women below age 45 who knew a source for female sterilization

	Constant		Travel time				Living children 5+		Residence Rural		Education 6+ years		Other method source Equal, longer, none	
			30–59 mins		60+ mins									
	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE	Est	SE
Ghana											$p<0.05$			
Female ster. *vs* other efficient	0.58	(1.26)	0.51	(0.77)	−0.09	(0.87)	−0.08	(0.77)	0.42	(0.83)	−1.05	(0.80)	−1.14	(1.16)
Female ster. *vs* inefficient	0.25	(1.24)	0.43	(0.82)	−0.57	(0.91)	0.51	(0.73)	0.50	(0.86)	0.39	(0.75)	−1.50	(1.18)
Female ster. *vs* non-use	−1.38	(1.15)	0.33	(0.71)	−1.09	(0.80)	0.59	(0.63)	0.42	(0.77)	0.10	(0.68)	−1.19	(1.13)
Other efficient *vs* inefficient	−0.33	(0.70)	−0.07	(0.53)	−0.48	(0.56)	0.58	(0.60)	0.08	(0.50)	1.44	(0.55)	−0.36	(0.41)
Other inefficient *vs* non-use	−1.96	(0.56)	−0.18	(0.35)	−1.00	(0.37)	0.67	(0.47)	−0.01	(0.32)	1.16	(0.45)	−0.06	(0.29)
Inefficient *vs* non-use	−1.63	(0.49)	−0.10	(0.46)	−0.53	(0.47)	0.08	(0.42)	−0.08	(0.43)	−0.28	(0.35)	0.30	(0.33)
Paraguay							$p<0.05$							
Female ster. *vs* other efficient	−2.49	(0.80)	0.47	(0.55)	0.71	(0.53)	1.36	(0.43)	−0.41	(0.64)	−0.17	(0.64)	0.22	(0.41)
Female ster. *vs* inefficient	−1.99	(0.82)	0.28	(0.55)	0.48	(0.57)	1.26	(0.45)	−0.52	(0.66)	0.14	(0.65)	0.22	(0.42)
Female ster. *vs* non-use	−2.20	(0.80)	0.30	(0.55)	0.44	(0.56)	1.04	(0.42)	−0.89	(0.65)	0.44	(0.64)	−0.09	(0.41)
Other efficient *vs* inefficient	0.50	(0.33)	−0.19	(0.27)	−0.23	(0.29)	−0.10	(0.28)	−0.11	(0.28)	0.31	(0.26)	0.01	(0.22)
Other efficient *vs* non-use	0.29	(0.30)	−0.17	(0.26)	−0.27	(0.28)	−0.33	(0.24)	−0.48	(0.27)	0.61	(0.23)	−0.31	(0.19)
Inefficient *vs* non-use	−0.20	(0.34)	0.02	(0.30)	−0.04	(0.31)	−0.23	(0.27)	−0.37	(0.30)	0.30	(0.27)	−0.32	(0.22)
Philippines							$p<0.001$		$p<0.001$		$p<0.001$		$p<0.05$	
Female ster. *vs* other efficient	−0.95	(0.20)	−0.17	(0.17)	0.32	(0.17)	0.37	(0.13)	−0.11	(0.14)	0.08	(0.17)	−0.37	(0.15)
Female ster. *vs* inefficient	−1.00	(0.20)	−0.21	(0.16)	0.23	(0.16)	0.36	(0.12)	−0.55	(0.13)	0.00	(0.16)	−0.39	(0.15)
Female ster. *vs* non-use	−1.73	(0.19)	−0.10	(0.16)	0.21	(0.15)	0.66	(0.12)	−0.70	(0.13)	0.58	(0.15)	−0.29	(0.15)
Other efficient *vs* inefficient	−0.05	(0.15)	−0.04	(0.11)	−0.09	(0.12)	−0.01	(0.09)	−0.44	(0.10)	−0.08	(0.12)	−0.02	(0.10)
Other efficient *vs* non-use	−0.78	(0.14)	0.07	(0.11)	−0.11	(0.12)	0.29	(0.09)	−0.59	(0.10)	0.50	(0.11)	0.08	(0.10)
Inefficient *vs* non-use	−0.73	(0.12)	0.11	(0.10)	−0.02	(0.10)	0.30	(0.08)	−0.15	(0.08)	0.58	(0.10)	0.10	(0.09)
Venezuela							$p<0.001$		$p<0.001$		$p<0.001$			
Female ster. *vs* other efficient	−1.96	(0.29)	0.03	(0.26)	−0.22	(0.27)	1.64	(0.20)	−0.09	(0.35)	0.16	(0.21)	0.36	(0.23)
Female ster. *vs* inefficient	−1.04	(0.33)	−0.13	(0.30)	−0.17	(0.31)	1.50	(0.25)	−0.51	(0.39)	0.25	(0.25)	0.44	(0.27)
Female ster. *vs* non-use	−1.78	(0.29)	−0.14	(0.26)	−0.45	(0.27)	1.37	(0.20)	−0.84	(0.34)	0.67	(0.21)	0.11	(0.23)
Other efficient *vs* inefficient	0.92	(0.23)	−0.16	(0.22)	0.05	(0.23)	−0.14	(0.21)	−0.42	(0.27)	0.10	(0.19)	0.08	(0.20)
Other efficient *vs* non-use	0.18	(0.18)	−0.18	(0.17)	−0.23	(0.17)	−0.26	(0.15)	−0.75	(0.19)	0.51	(0.14)	−0.25	(0.15)
Inefficient *vs* non-use	−0.74	(0.24)	−0.02	(0.23)	−0.29	(0.23)	−0.13	(0.20)	−0.33	(0.25)	0.41	(0.19)	−0.33	(0.21)

hood of using not only one of those methods but also the pill itself or even an inefficient method, as opposed to no method at all. For the condom in the Philippines, less access to other methods favoured increased use of this method as opposed to each of the alternative statuses, but in contrast, for female sterilization, less access to other methods was associated with decreased probabilities of having been sterilized. For the IUD in the Philippines, the main effect of lack of awareness of closer sources for other methods was to reduce the likelihood of use of those other methods as opposed to an inefficient method or no method at all.

Number of living children appears to have affected the pattern of method use more for the pill (Philippines, Sudan, Venezuela) and female sterilization (Paraguay, Philippines, Venezuela) than for the IUD (Philippines) or the condom (Paraguay, Philippines). Except in the case of the pill in Venezuela, the estimates that are more than double their standard errors are all positive, indicating that having a large family was generally positively associated with use. Not surprisingly, use of the method in question as opposed to another efficient method, an inefficient method, or no method at all was particularly apt to increase in the case of female sterilization.

Rural residence typically implies lower levels of contraceptive use. Type of residence does prove to be important in these results especially for Paraguay, the Philippines, and Venezuela, and all but three of the estimates that are significant are negative. The three exceptions are for comparisons of the given method with other efficient methods, where a negative sign would not necessarily be expected (pill in Paraguay and Venezuela, condom in the Philippines). It is possible that this reflects special effort in some countries to promote specific methods in rural areas.

Education is almost always positively associated with use, and again, this is strongly borne out in the present analysis. Wherever the effect of having at least six years of education is significant, the estimates are positive except in the comparison of use of the pill with other efficient methods in Paraguay, where the negative sign does not imply either less use or a lower quality of use. As expected, the favourable effect of education is seen most clearly in the comparisons against non-use. By method, education plays a much less conspicuous role in the results for the condom than for the others in all countries except the Philippines.

As a whole these results suggest that, among the control variables, number of living children was of less importance than type of residence or number of years of education. Hence when it came to evaluating interactions, all pairs of variables except those involving number of living children were examined. No three-way or higher order interactions were considered. Applied to all methods and countries, the six two-way combinations involving travel time, knowledge of other method sources, type of residence and years of education yielded a total of 102 interaction terms; the p value of the resulting estimates proved to be less than 0.05 in only 11 cases, whereas at least five could have been expected purely by chance, and none was as small as 0.01. These results are not shown because of the volume of data and the general absence of interpretable patterns, but at least one comment is worthwhile. Three of the estimates that were significant involved travel time and type of residence: for female sterilization in Ghana and the Philippines and for the condom in the Philippines, longer travel time depressed use of the method in question in comparison to use of inefficient methods or no method at all much more in rural than in urban areas. Three others related to number of years of education and type of residence: for the pill in Paraguay and Venezuela and the IUD in Paraguay, the combination of high education with rural residence enhanced the likelihood that a woman would have been using the method in question as opposed to inefficient methods or no method at all. Thus there are scattered indications that the structure of the determinants of method use, including possibly travel time to a method source, may differ by type of residence.

SUMMARY

The effects of contraceptive accessibility on use have been examined separately among exposed women who knew sources for each of four methods: the pill, IUD, condom, and female sterilization. Both travel time to a source for the method under consideration and whether or not the respondent knew a source for another efficient method that was as accessible were considered.

In each case the dependent variable was categorical, representing four alternative statuses: use of the method in question, use of another efficient method, use of an inefficient method and non-use of contraception. A multinomial logistic model was used to obtain maximum likelihood estimates of six parameters representing the odds ratios that relate all possible pairs of the categories of the dependent variable. The independent variables were also categorical in form; they included number of living children, type of residence and years of education as well as the two accessibility variables. A model containing selected two-way interactions was also tested.

On the whole the results are not very clear-cut. A large proportion of the coefficients do not have an absolute value double that of their standard error, and patterns are difficult to discern, particularly for the accessibility variables. This is much less true in the case of the Philippines for which the samples are considerably larger than those of other countries.

Some generalizations are possible nevertheless. Travel time does not appear to have been a major determinant of contraceptive use, once a source for a given method was known. Lack of knowledge of sources for other methods or knowledge only of sources that were relatively inaccessible did have some bearing on use.

Having had five or more children tended to favour contraceptive use, especially female sterilization. The pattern of effects for type of residence and education were quite clear and consistent. Rural residence usually decreased the likelihood of falling into a 'higher' as opposed to a 'lower' category of contraceptive use, while the effect of having six or more years of education was just the opposite.