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IS LOW INCOME A CONSTRAINT TO CONTRACEPTIVE USE AMONG THE PAKISTANI POOR?

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Summary. This paper examines whether low income is a barrier to contraceptive use in Pakistan, a country in which economic conditions are deteriorating at a time when the private sector is becoming a more important supplier of contraception. Multivariate regression analysis performed using the Pakistan Contraceptive Demand Survey suggests that low income is a deterrent to modern contraceptive use in Pakistan. This is particularly the case for contraceptive methods supplied through the private sector. It is concluded that, if the aim of family planning programmes is to reach low-income people, the prices of contraceptives supplied through the private sector should be kept as low as possible.

Introduction

Family planning programmes in developing countries often have the explicit goal of increasing contraceptive use among low-income couples. At the same time, due to shrinking resources, governments and non-government organizations (NGOs) are under increasing pressure to increase the sustainability of family planning services by passing on a greater proportion of contraceptive costs and service charges to consumers. However, the aim of increasing sustainability by greater cost recovery may be at odds with the aim of increasing contraceptive use among the poor. The extent to which low income is a barrier to contraceptive use is not known. This information is important for planners who need to make decisions about cost recovery and to programme managers who are interested in making contraceptives available to low-income couples.

While several studies have examined the contraceptive use behaviour and attitudes of women in low-income communities (Murphree & DeHaven, 1995; Sobo, 1995; Padilla, 1995; Forest & Frost, 1996; Lasee & McCormick, 1996; Kamau *et al.*, 1996; Lauby *et al.*, 1996; Pick & Collado, 1996; Stevens-Simon *et al.*, 1996), they have not compared these women with women in higher income areas. Few studies have contrasted the contraceptive use behaviour of lower income women with higher income women. These studies have generally found that higher income leads to higher

contraceptive use, after controlling for other factors (Mahmood, 1992; Arokiasamy, 1993; Young *et al*., 1994; Feyisetan & Ainsworth, 1994). However, the magnitude of the relationship between income and contraceptive use varies from country to country and from one method to another. Methods that are provided by the public sector are often free, so income levels are unlikely to affect their use. Methods provided by the private sector are sold, and income is more likely to affect their use. Research is, therefore, needed to assess the extent to which low-income people are constrained from using modern contraceptive methods, and how this relates to the delivery of these methods through the public or private sector. The present study examines the relationship between income and contraceptive use in Pakistan.

Pakistan is an important country in which to study the income–use relationship because it has a very low contraceptive prevalence rate and limited resources for family planning. In spite of a high need for family planning, only 13% of reproductive age women were current users of modern contraception in 1994 (Ministry of Population Welfare, 1995). An important objective of the Pakistan family planning programme is to increase contraceptive use among low-income couples. At the same time, the family planning programme needs to increase the financial sustainability of family planning services. Traditionally, the government has been the largest provider of family planning services, but government resources are limited: Pakistan is a poor country with *per capita* income of about $400. In recent years, the contribution of the private sector in the supply of family planning services has increased.

At a time when the private sector is becoming a more important supplier of family planning services, the deterioration in economic conditions has reduced the purchasing power of most Pakistanis and has placed many households under considerable economic stress. In one recent study of constraints to contraceptive use, married women reported having no disposable income and could only afford basic items such as food, clothing, rent, utility bills and children's education (Aftab Associates, 1997).

In relation to their incomes and in relation to the cost of basic food items, contraceptive costs can be substantial for many Pakistanis. In 1994, the median amount paid for an IUD insertion was 100 rupees, the median amount paid for a cycle of pills was 10 rupees, the median payment for an injectable was 35 rupees and the median payment for a condom was 3 rupees (Ministry of Population Welfare, 1995). In US dollars this amounts to $3·3 for an IUD insertion, $3·8 for a year's supply of oral contraceptives, $5·7 for a year's supply of injections and $9·8 for a year's supply of condoms. (One US dollar was equivalent to 30·6 Pakistani rupees in November 1994, when data for the Pakistan Contraceptive Prevalence Survey of 1994/95 were collected.) Given that the average price of a dozen eggs is 12 rupees, for a cup of tea is 2 rupees and for a loaf of bread is 8 rupees, the amounts being paid out for contraception are significant. It is possible, therefore, that income is a significant constraint to contraceptive use in Pakistan.

In recent years, it is noteworthy that the largest increase in the use of any family planning method in Pakistan has been in the use of withdrawal: withdrawal use increased from 1·2% in 1991 to 4·2% in 1994 (Ministry of Population Welfare, 1995). Findings from one study suggest that the increase in the use of withdrawal is due, in part, to substantial increases in the price of subsidized condoms in 1991 (Agha & Davies, 1998). According to this study, a disproportionate share of low-income condom users stopped using condoms after the price increases.

The present study examines the relationship between income and contraceptive use in Pakistan within the overall context of the family planning service delivery system in Pakistan.

Background: the delivery of contraceptives in Pakistan

Since the 1970s, the government of Pakistan's family planning programme has changed its emphasis on the delivery of various methods. Between 1965 and 1970, the government's family planning programme emphasized clinical methods, with particular focus on the IUD. During the 1970–75 time period, the emphasis of the government's programme shifted to the oral contraceptive and vaginal methods due to reported excessive bleeding and complications from the IUD. The contraceptive injection was introduced after 1975, and a renewed emphasis on the IUD followed after the introduction of the Copper-T IUD in the 1980s.

The private sector has played an important role in the provision of condoms, vaginal foaming tablets and oral contraceptives: 73% of condom users, 50% of vaginal method users and 31% of oral contraceptive users in 1984 obtained these methods from medical and general stores. In the same year, 82% of injections, 98% of IUDs and 100% of sterilizations were provided by the government sector (Population Welfare Division, 1986). Overall, the private sector supplied 26% of all modern contraceptive methods to users in 1984. By 1991, the role of the private sector in the provision of contraception increased: of those modern method users who could name the source of contraception, 35% reported obtained contraception from a private sector source. Important shifts in the provision of specific modern methods occurred between 1984 and 1991. In 1991, 44% of injections were supplied by the private sector, compared with 9% in 1984. Similarly, in 1991, 62% of oral contraceptives were supplied by the private sector compared with 31% in 1984. The percentage of condoms supplied by the private sector increased slightly to 80% in 1991. The provision of the IUD and sterilization by the private sector also increased to 14% and 16%, respectively (Population Welfare Division, 1986; National Institute of Population Studies, 1992).

The promotion of traditional methods has not been an objective of the Pakistan family planning programme (Population Welfare Division, 1986). However, in the mid-1980s, withdrawal (0·9% prevalence) made a more important contribution to overall contraceptive prevalence than the IUD (0·8% prevalence), the injection (0·6% prevalence) or vaginal methods (0·1% prevalence). Only the use of female sterilization (4·2% prevalence), the condom (3·2% prevalence) and the IUD (1·5% prevalence) were greater than the use of withdrawal in 1984 (Population Welfare Division, 1986). By 1994, withdrawal comprised an even greater proportion of overall contraceptive prevalence, with 4·2% of currently married women aged 15–49 reporting use of withdrawal, compared with a total 17·8% all-method prevalence. In 1994, only the use of female sterilization (5·0% prevalence) was greater than the use of withdrawal. Condom use (3·7% prevalence) was no longer greater than the use of withdrawal (Ministry of Population Welfare, 1995). The greater importance of withdrawal over time reflects a greater demand for family planning as well as the shortcomings in the availability and quality of family planning services in Pakistan. Increases in the price of condoms in 1991 may also have contributed to the increased use of withdrawal after 1991 (Agha & Davies, 1998).

In general, contraceptive users with a lower socioeconomic status have been more likely to use contraceptive methods predominantly supplied by the government sector. The Pakistan Contraceptive Prevalence Survey 1984/85 shows that among contracepting women (consisting of women using both modern and traditional methods) with no schooling, 52% used methods that were emphasized by the government programmes after the mid-1970s: the oral contraceptive (17%) and sterilization (35%). The 1990/91 DHS shows a similar picture: 51% of contracepting women with no schooling used methods emphasized by the government programme after the mid-1980s: the IUD (13%) and sterilization (38%).

In contrast, methods supplied by the private sector are more likely to have been used by contraceptive users with higher socioeconomic status: in 1984, 42% of contracepting women with secondary education and 52% of contracepting women with college education used condoms (Population Welfare Division, 1986); in 1991, 38% of contracepting women with secondary or higher education used condoms (National Institute of Population Studies, 1992).

Data and methods

This paper is based on the 1996 Pakistan Contraceptive Demand Survey (PCDS-96) which was conducted by Aftab Associates, a Pakistani market research firm, for The Futures Group International (TFG). The data collection was conducted in two cities, Larkana and Faisalabad, as well as villages within 5–25 km of the city limits of Faisalabad. Five hundred and eight-two couples were interviewed in urban Faisalabad, 595 in rural Faisalabad and 576 in urban Larkana. This analysis is restricted to the 'woman file', which includes 1753 currently married women between 15 and 40 years of age with at least one living child.

The PCDS-96 questionnaire includes questions on education, age, number of children and current and ever use of contraceptive methods. Household income data were gathered on the household schedule. To gather income data, it was first determined which members of the household were engaged in economic activity. Economic activity was defined as activity resulting in wages, cash, in-kind payments, non-agricultural business activity and the growing of agricultural products for home consumption or sale. All economically active individuals were then asked about the income they earned in one month through salaries, wages, business, trade or agricultural production. Households engaged in agricultural production were asked to estimate the cash value of their agricultural produce.

Statistical analysis was conducted using the SPSS 6.1 software program. Logistic regression analysis was used to measure the net effect of household income on the ever use and current use of specific modern methods by married women. (Strictly speaking, current income should not be used to model past contraceptive use. The findings on the relationship between income and ever use of methods are meaningful to the extent that they are consistent with findings of the effect of income on current use of contraceptive methods.)

The net effect of household income on method mix (modern versus traditional) was also estimated. Because the number of contraceptive users is small, differences at the $p < 0{\cdot}10$ significance level are reported in the multivariate analyses. Sterilization users

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Table 1. Sample characteristics

	%
Household income (rupees)	
<2000	16·3
2000–3999	41·5
4000+	42·2
Women's schooling	
None	61·4
Primary	18·0
Middle	7·6
Secondary	12·9
Residence	
Urban	66·1
Rural	33·9
Women's ages	
<30	46·6
30+	53·4
Children ever born	
1–2	25·6
3–4	28·9
5–6	23·2
7+	22·3
Desire for more children	
Yes	61·6
No	38·4

Number of cases = 1753.

are not included in this analysis because the monetary incentives given to sterilization users in Pakistan distort an evaluation of the costs associated with use.

Table 1 shows the distribution of respondents by household income, schooling, residence in urban or rural area, age, the number of children ever born and the desire for more children. About 16% of the women are from households with an income of less than 2000 rupees a month (approximately US $50) and 61% have no schooling. Sixty-six per cent of the women live in urban areas (while 30% of the overall population of Pakistan live in urban areas and 70% live in rural areas). Slightly more than half (53%) are over 30 years of age. Slightly less than half (45%) have five or more children. About 38% do not want additional children in the future.

The percentage of women who report ever use and current use of reversible modern family planning methods and the percentage who report ever and current use of traditional family planning methods are shown in Table 2 (about 10% of the women in this sample reported having been sterilized: not shown). Five per cent of the women have ever used the oral contraceptive, 5% have ever used the injection, 8% have ever used the IUD and 13% have ever used the condom. About 2% of the women in this sample are current users of the pill, 3% are current users of the injection, 5% are current users of the IUD and 8% are current users of the condom. Nine per cent of

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Table 2. Frequency distribution of reports on current and ever use of spacing methods

	%
Ever use of modern spacing methods	
Pill	5·4
Injectable	5·0
IUD	7·8
Condom	13·1
Current use of modern spacing methods	
Pill	1·8
Injectable	2·7
IUD	5·1
Condom	7·8
Ever use of traditional spacing methods	
Rhythm	21·3
Withdrawal	7·1
Current use of traditional spacing methods	
Rhythm	9·2
Withdrawal	3·6

Number of cases = 1753.

Table 3. Percentage of women reporting ever use and current use of modern methods by income

	Ever use				Current use			
Income (rupees)	Condom**	Injection	IUD**	Oral cont.	Condom**	Injection*	IUD*	Oral cont.
<2000	5·9	3·8	4·5	4·9	3·1	0·3	3·5	1·7
2000–3999	13·5	5·0	6·7	5·4	8·0	2·9	4·3	1·4
4000+	15·4	5·5	10·0	5·7	9·3	3·5	6·6	2·2

*$p < 0{\cdot}05$; **$p < 0{\cdot}01$.
Number of cases = 1753.

women report current use of the rhythm method and 4% report current use of withdrawal.

Bivariate analysis shows a significant relationship between household income and the use of several modern methods. The association between household income and ever use and current use of the condom, the injection, the IUD and the pill is shown in Table 3. Chi-square tests of independence show that income is associated with the ever use of the condom and the IUD and with the current use of the condom, the injection and the IUD.

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Table 4. Odds ratios from logistic regression analysis showing a wife's ever use and current use of the condom

	Ever use		Current use	
	Model 1	Model 2	Model 3	Model 4
Household income (rupees)				
<2000	1·00	1·00	1·00	1·00
2000–3999	2·46***	2·07***	2·67***	2·28***
4000+	2·88***	1·90**	3·16***	2·03*
Schooling				
None		1·00		1·00
Primary		1·49**		1·31
Middle		3·05***		3·32***
Secondary+		2·87***		3·67***
Residence				
Urban		1·00		1·00
Rural		0·74*		0·75
Age				
<30		1·00		—
30+		0·96		—
Children ever born				
1–2		—		1·00
3–4		—		1·39
5–6		—		1·04
7+		—		1·24
Desire for more children				
Yes		—		1·00
No		—		1·94***
Model X^2	19·09	46·39	13·23	56·87
df	2	5	2	8

*$p<0·10$; **$p<0·05$; ***$p<0·01$.
Number of cases = 1753.

Whether there was a significant relationship between income and schooling and residence was also examined (not shown). Because better educated and urban people have higher incomes, education and residence were controlled for in the multivariate analysis.

Results

Use of modern spacing methods

Condom use. A logistic regression predicting the likelihood of a woman ever using a condom is shown in the second and third columns of Table 4. The denominator in Table 4 (as in Tables 5–7) consists of all women in the sample. At the first stage, in Model 1, only household income is introduced. Household income has a powerful

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effect on condom ever use: an income of 2000–3999 rupees (35 Pakistani rupees were the approximate equivalent of $1 US in June 1996) per month more than doubles and an income greater than 3999 rupees almost triples the likelihood of condom ever use, compared with an income of less than 2000 rupees. After schooling, residence and age are introduced in Model 2, the net effect of income on ever use of condoms is still significant: an income of 2000–3999 rupees or an income greater than 3999 rupees makes a woman about twice as likely to ever use a condom, compared with an income of under 2000 rupees.

Models 3 and 4 of Table 4 show a logistic regression predicting the likelihood of a woman currently using a condom. In Model 3, only household income is introduced. Income has a powerful effect on current use of condoms: an income of 2000–3999 rupees more than doubles and an income greater than 3999 rupees triples the likelihood of current condom use, compared with an income of less than 2000 rupees. After controlling for other variables in Model 4, income retains a significant effect on current condom use: an income of 2000–3999 rupees or one greater than 3999 rupees makes it twice as likely for a woman to be a current condom user, compared with an income of under 2000 rupees. These finding show that even after other factors that affect the demand for contraception are taken into account, income is an important determinant of both ever use and current use of condoms. Income differentials in condom ever use and current use are consistent with the knowledge that both in the past and at present condoms have been sold through the private sector in Pakistan.

Injection use. Models 1 and 2 of Table 5 show the likelihood of a woman ever using a contraceptive injection. There is no association between household income and the ever use of injections. However, income does have a powerful effect on current use of injections: Model 3 shows that a household income of 2000–3999 rupees makes a woman more than eight times as likely to be a current injection user while an income greater than 3999 rupees makes a woman more than ten times as likely to be a current injection user, compared with an income of under 2000 rupees. Net of other variables, in Model 3, the effect of income on current use of condoms remains significant and there is little change in the magnitude of the income effect. These findings show that income has a significant effect on the current use of the injection. These findings were expected. Because injections were delivered by the government sector in the past, free of charge, there is no significant income effect on the ever use of the injection. However, with greater private sector involvement in the provision of injections, their cost has increased. Hence, income has become significantly associated with injection current use.

IUD use. A logistic regression shows the likelihood of ever use and current use of the IUD in Table 6. Income has a significant effect on IUD ever use in Model 1: a household income greater than 3999 rupees makes a woman more than twice as likely to ever use an IUD, compared with an income of under 2000 rupees. In Model 2, the net effect of income on ever use is still significant: a woman with a household income greater than 3999 rupees is nearly twice as likely as a woman with an income under 2000 rupees to ever use the IUD.

Model 3 shows the effect of household income on IUD current use. Income has a marginally significant effect on IUD current use: an income greater than 3999 rupees makes a woman nearly two times as likely to be an IUD current user, compared with a woman with an income under 2000 rupees ($p < 0{\cdot}10$). However, wealthier women

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Table 5. Odds ratios from logistic regression analysis showing a wife's ever use and current use of the injection

	Ever use		Current use	
	Model 1	Model 2	Model 3	Model 4
Household income (rupees)				
<2000	1·00	1·00	1·00	1·00
2000–3999	1·30	1·20	8·47*	7·82**
4000+	1·47	1·28	10·37**	11·17**
Schooling				
None		1·00		1·00
Primary		1·21		1·33
Middle		1·05		0·64
Secondary+		1·23		1·35
Residence				
Urban		1·00		1·00
Rural		0·71		0·89
Age				
<30		1·00		—
30+		1·00		—
Children ever born				
1–2		—		1·00
3–4		—		2·97
5–6		—		4·34**
7+		—		8·92***
Desire for more children				
Yes		—		1·00
No		—		1·49
Model X^2	1·31	2·76	11·31	27·67
df	2	5	2	8

*$p<0·10$; **$p<0·05$; ***$p<0·01$.
Number of cases = 1753.

have higher levels of education and education increases the likelihood of IUD use. Thus, after controlling for other factors (Model 4), the net effect of income on current use of the IUD does not remain significant. These findings show that, net of other factors, household income is an important determinant of IUD ever use but not of IUD current use.

Because the government has remained the major supplier of the IUD in Pakistan, no association was expected between income and IUD ever use and between income and IUD current use. This expectation was only partially met: there is indeed no association between income and current use, but there is a positive association between income and IUD ever use.

Oral contraceptive use. The likelihood of a woman's ever use and current use of the

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Table 6. Odds ratios from logistic regression analysis showing a wife's ever use and current use of the IUD

	Ever use		Current use	
	Model 1	Model 2	Model 3	Model 4
Household income (rupees)				
<2000	1·00	1·00	1·00	1·00
2000–3999	1·52	1·35	1·22	1·11
4000+	2·33***	1·91**	1·96*	1·63
Schooling				
None		1·00		1·00
Primary		1·46		2·02**
Middle		1·47		1·83
Secondary+		1·67**		2·24**
Residence				
Urban		1·00		1·00
Rural		0·79		0·90
Age				
<30		1·00		—
30+		1·57*		—
Children ever born				
1–2		—		1·00
3–4		—		1·37
5–6		—		1·82*
7+		—		1·42
Desire for more children				
Yes		—		1·00
No		—		3·09***
Model X^2	10·69	12·76	6·05	44·28
df	2	5	2	8

*$p<0·10$; **$p<0·05$; ***$p<0·01$.
Number of cases = 1753.

oral contraceptive is shown in Table 7. There is no association between household income and either ever use or current use of the oral contraceptive. The lack of an association between income and ever use of the oral contraceptive is consistent with the knowledge that the public sector was responsible for free delivery of this method in the past. However, the absence of a relationship between income and current use of the oral contraceptive is unexpected. In fact, the only factor that has an effect on current use of the oral contraceptive is the desire to stop childbearing: women who do not want additional children are almost four times as likely as those who want additional children to be current oral contraceptive users.

Choice of modern spacing versus traditional methods

Whether income influences contraceptive use may also be gauged by measuring the

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Table 7. Odds ratios from logistic regression analysis showing a wife's ever use and current use of the oral contraceptive

	Ever use		Current use	
	Model 1	Model 2	Model 3	Model 4
Household income (rupees)				
<2000	1·00	1·00	1·00	1·00
2000–3999	1·10	0·97	0·78	0·78
4000+	1·17	1·01	1·24	1·22
Schooling				
None		1·00		1·00
Primary		1·57*		1·58
Middle		1·09		1·70
Secondary+		1·07		0·74
Residence				
Urban		1·00		1·00
Rural		0·66*		0·91
Age				
<30		1·00		—
30+		1·67*		—
Children ever born				
1–2		—		1·00
3–4		—		1·77
5–6		—		1·71
7+		—		0·82
Desire for more children				
Yes		—		1·00
No		—		3·77***
Model X^2	0·26	11·99	1·32	19·27
df	2	5	2	8

*$p<0·10$; **$p<0·05$; ***$p<0·01$.
Number of cases = 1753.

effect of income on the method mix, particularly on the use of a modern versus a traditional method. Monetary cost may be one of the factors that influences the choice between modern and traditional methods. A significant proportion of modern method users in Pakistan pay for contraception (Ministry of Population Welfare, 1995). Moreover, users of modern methods also have to pay for travel costs and the opportunity cost of time spent in obtaining the method. These costs may become excessive for poor women, who may be unable to afford the use of modern contraception. In contrast, users of traditional methods do not have to pay a monetary price, nor are there travel or time costs associated with obtaining these methods. If the effect of income on contraceptive use operates through contraceptive prices and travel costs, higher household income should increase the likelihood of using a modern method. In other words, net of other factors, the poor will be more likely than the rich

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Table 8. Odds ratios from logistic regression analysis showing a wife's ever use and current use of a modern method (versus traditional method)

	Ever use[a]		Current use[b]	
	Model 1	Model 2	Model 3	Model 4
Household income (rupees)				
<2000	1·00	1·00	1·00	1·00
2000–3999	2·26***	1·66*	1·99**	1·67*
4000+	1·74**	1·18	2·19***	1·69*
Schooling				
None		1·00		1·00
Primary		1·04		0·84
Middle		0·70		0·71
Secondary+		0·93		1·12
Residence				
Urban		1·00		1·00
Rural		0·30***		0·36***
Age				
<30		1·00		—
30+		0·98		—
Children ever born				
1–2		—		1·00
3–4		—		1·51
5–6		—		1·38
7+		—		2·06**
Desire for more children				
Yes		—		1·00
No		—		1·02
Model X^2	10·82	48·65	7·54	36·13
df	2	5	2	7

*$p<0·10$; **$p<0·05$; ***$p<0·01$.
[a]Number of cases = 678. [b]Number of cases = 518.

to use a traditional method because there is no monetary cost associated with use of a traditional method.

The likelihood of modern method use among contraceptive users (excluding sterilization users) is shown in Models 1 and 2 of Table 8. The denominator consists of women who have ever used a modern or a traditional method. Cases of overlap between ever use of a modern method and ever use of a traditional method were removed from this analysis. Women who had never used a modern or a traditional method were not included in this analysis.

Before controlling for other factors, the method mix (modern versus traditional) varies by household income: an income of 2000–3999 rupees makes a woman more than twice as likely and an income greater than 3999 rupees makes a woman nearly twice as likely to ever use a modern method, compared with a woman with a household

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Table 9. The effect of income on the use of contraception in Pakistan

	Private sector supply of current contraceptive use	Effect on ever use		Effect on current use	
		Model 1 unadjusted	Model 2 adjusted*	Model 3 unadjusted	Model 4 adjusted*
Condom	80%	+(ve)	+(ve)	+(ve)	+(ve)
Pill	62%	ns	ns	ns	ns
Injection	44%	ns	ns	+(ve)	+(ve)
IUD	14%	+(ve)	+(ve)	+(ve)	ns
Modern vs temporary	na	+(ve)	ns	+(ve)	+(ve)

*Adjusted for schooling, residence in urban or rural areas, age, children ever born and the desire for more children. na, not applicable; ns, not significant.

income of under 2000 rupees. However, when other factors are controlled (Model 2), higher income does not appear to significantly increase the likelihood of modern method use.

Models 3 and 4 in Table 8 show the relationship between income and current use of a modern method. Household income increases the likelihood of current use of a modern method: an income of 2000–3999 rupees or an income greater than 3999 rupees makes a woman about twice as likely to currently use a modern method, compared with an income of less than 2000 rupees (Model 3). When other factors are controlled (Model 4), the effect of income diminishes but remains significant ($p < 0{\cdot}10$): an income of 2000–3999 rupees or an income greater than 3999 rupees increases the likelihood of current modern method use to one and a half times. These findings show that an increase in household income influences the method mix among current users by making those with higher incomes more likely to use a modern method.

It is noteworthy that there is no significant association between the desire to stop childbearing and the method mix. This suggests that factors other than a Pakistani woman's level of motivation are what determine whether she uses a modern or a traditional contraceptive method. It appears that income is one such factor.

Summary of findings

Table 9 summarizes the effect of income on the use of contraception in Pakistan. After controlling for other factors (model 4), income has a significant effect on current use of two (condom and injection) out of three methods (condom, injection and pill) that are supplied in a substantial proportion by the private sector. Moreover, income has no effect on current use of a method (the IUD) that is primarily supplied by the government. Finally, income increases the chance that a woman will use a modern versus a temporary contraceptive method.

Discussion

Higher household income significantly increases the likelihood of ever use and current use of the condom, current use of the injection and ever use of the IUD. Income is not

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associated with ever use of the injection, current use of the IUD and ever and current use of the oral contraceptive. Most of these findings are consistent with our knowledge of how contraceptives are made available through the government and private sector in Pakistan.

The delivery of a particular contraceptive method through the public or the private sector is what determines whether income has a significant effect on the use of that method. In the case of the condom and the injection, the current findings are consistent with this interpretation. Condoms have largely been obtained through the private sector both in the past and at present. Consistent with this, significant income differentials are found in ever use and current use of the condom. Although injections were predominantly delivered through the government delivery system in the 1980s, by 1991 almost half of injection users bought injections from private sector sources. Hence, no relationship is found between income and ever use of the injection, but there is a strong relationship between income and current use of this method.

For the IUD and the oral contraceptive the findings are less consistent with this interpretation. Until now, the IUD has been mainly delivered by the government sector. Therefore, no association would be expected between income and IUD ever use and between income and IUD current use. Although there is no association between income and IUD current use, net of other factors, there is a significant association between income and IUD ever use. In the case of the oral contraceptive, this method was largely supplied by the government sector in the past, but is now largely sold by the private sector. Therefore, no association would be expected between income and ever use of the oral contraceptive, but a significant association would be expected between income and current use of this method. In fact, no significant relationship is found between income and ever use of the oral contraceptive. However, contrary to our expectations, there was also no relationship between income and current use of this method. For the oral contraceptive, the only factor that affects its current use is the desire to stop childbearing.

This analysis also shows that higher income changes the method mix in favour of modern methods. This finding has important implications: future modern method users in Pakistan are likely to be the ones with higher household incomes.

The finding that the motivation to stop childbearing does not influence the choice between a modern or traditional method is important because it suggests that factors other than the level of motivation affect the method mix. This study has shown that income is certainly one such important factor. To ensure that poor people in Pakistan can afford to use modern methods, it will be important to keep the costs of contraceptives low.

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