Attitudes, Contraceptive Practice and Children Ever Born Among Currently Married Women Exposed to Different Types of Communication Media, Pakistan

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The Pakistan population planning programme, in its effort to recruit family planning adopters in order to lower birth rates, has used a broad range of communication media to convey its messages. Mass media like radio, television and cinema have carried the message and field workers have been hired specially to provide the information and services. Various combinations of personnel ranging from the illiterate local midwives to educated male-female teams have been tried. The programme has undergone many changes since it was reformulated in 1965. It is currently imparting its messages both through mass media and interpersonal channels. Both male and female workers are still being used at the grassroot level although the set up is undergoing certain organizational and administrative changes.

The objective of the present study is to examine the fertility response of women when they are exposed to different types and varying numbers of communication media. It is important to understand the role of various communication media in fertility-related behaviour in order to formulate or modify communication policies for changing such behaviour.

The analysis in the present study is based on data from the National Impact Survey of 1968-69. As systematic efforts in the family planning programme were started in 1965, this study covers a short period of programme operation. Since the relationships under investigation might have changed since 1968-69, further analysis based on data provided by the Pakistan Fertility Survey, 1975 is underway. This paper may therefore be regarded as the first part of a larger study which attempts to analyse the dynamics of family planning communication in Pakistan.

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RELEVANT LITERATURE

In Pakistan, only one study has attempted to measure the effectiveness of the communication strategy used for family planning information, at the national level [Zaidi, 22]. The findings of this study were presented in a summary manner, and no attempt was made to analyse the causal implications of media exposure.[1]

The discussion in this section is restricted mainly to the experimental studies that have been conducted on the subject in Pakistan. Unlike national-level studies based on cross sectional data, experimental studies (though limited in geographical scope) in general have the ability of making more dependable conclusions because of their methodology. A review of the experimental studies conducted in Pakistan shows that most of these studies did not meet the criteria of true experimental studies. It follows from this that the general dearth of reliable findings on the subject necessitates further efforts which would throw light on the role of various media in family planning behaviour.

In a mass communication experiment, Ronald V. Euler [17, 20] attempted to asses the impact of the campaign on the adoption of family planning. The Campaign was designed in a way that the various media supported each other. The preliminary report from this experiment shows that both males and females in experimental areas of West Pakistan had, in general, a significantly higher knowledge of the concept and benefits of family planning than the control areas, particularly in the rural settings.[2] Exposure to the mass communication programme, however, did not lead to any noticeable gain in knowledge of specific methods, in generating positive attitudes and in contraceptive use in the experimental areas. This lack of differential is perhaps a result of the seemingly heavy emphasis, in the experiment on printed media in a largely illiterate pupulation. Contrary to Von Euler's findings, Khan and Choldin [11] showed that in East Pakistan educational programmes induced even the poorest and the least educated to adopt family planning methods.[3]

Fayyaz [5] showed in a semi-experimental study of three villages near Lahore that noticeable changes in knowledge and practice could be achieved by intensive campaigns. The experiment used both mass media and interpersonal channels by recruiting professional motivators and local volunteers of both sexes. The campaign efforts resulted in 37 percent increase of those who possessed the knowledge of the concept of family planning, 48 percent increase of those who knew of family planning techniques and a 15 percent increase of those who accepted IUD or other contraception. The author expressed doubts about longitudinal campaigning and concluded that in a traditional society, such a campaign could make a social innovation acceptable without

[1]Furthermore, the various categories of media exposure examined by the author were not mutually exclusive. A respondent could be exposed to more than one media, and indeed many were. The study was therefore unable to make an assessment of the net effect of each media.

[2]There seems to be a second report on findings but it could not be obtained.

[3]These findings are based on data obtained from a pilot project which used an intensive promotional effort with local villagers as teacher-agents, using non-medical methods of contraception.

effecting a change in people's outlook.[4] He suggested that continuing campaigning beyond the saturation point is not at all rewarding. In his discussion related to drawing causal inferences from such a study, the author stated that his design was semi-experimental because he could not control for many of the extraneous factors which could have resulted in producing changes in the knowledge, attitude and practice (KAP) independent of the experiment. He stated that "multicausal" approach was used in the study implying that one effect was produced by several causes. It might be noted that in this study the effect of various media was not considered independently. Thus, it merely analysed a 'before' and 'after' (the experiment) situation, without being able to show clearly what proportion of the change occurred because of the experiment.

In another study conducted on behalf of the Family Planning Association of Pakistan, three Punjabi villages were studied by using a "before-after" experimental design. The study was intended to isolate the effect of a mass media campaign which had employed two alternative strategies [3]. The campaign used western oriented communication methods in one village, indigenous ones in another and no methods in the third.[5] The conclusion was that the western-oriented campaign was more successful in disseminating knowledge and in recruiting additional acceptors of family planning. These conclusions become highly dubious if one re-examines the data in the report even casually. First, the control village and the two experimental villages were not matched on any of the characteristics which could exert independent influences on KAP. Second, the gross (percentage) changes in the 'before' and 'after' phases were generally not very different for the three villages. The control village registered as much, or sometimes even greater, change than the experimental villages. Under these circumstances, the inference drawn in this study about the greater 'effectiveness' of the western-oriented media is highly questionable.

In another experimental study, the Family Planning Association of Pakistan [4] attempted to examine the effect of a low-tone motivational campaign organized through a clinic that was established in a Punjabi village. This motivational campaign which covered 250 couples was quite effective in creating awareness of the concept as well as specific methods of family planning. Practice of contraception also increased considerably—41 males and 55 females reported use in the post-survey compared to 17 males and 17 females in the pre-survey. Again, it is not possible to establish on the basis of this study a clear association between the establishment of a clinic and increase in the contraceptive use.

It should be noted that none of the experimental studies conducted to date have established the clear-cut direction of the relationship between the media exposure and the KAP. It is simply assumed that the change, if any, is a result of the media campaign. Erroneous conclusions may be drawn if this assumption is not valid.

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[4]This is partially supported by some of the data given in the study. In the presurvey interview of both husbands and wives, 90 percent of the husbands and 97 percent of the wives stated that they had not discussed about family planning with any other person.

[5]*Western Oriented Methods* included family planning Information Centres, flash cards, mobiles, give aways, bill boards and exhibition. *Indigenous Media* included singers, puppet shows, push carts, wall slogans, informal group meetings, local leaders and midwives.

In addition to the evaluative efforts made by the experimental studies discussed above, a series of studies were conducted in order to assess the impact of radio messages on family planning attitudes and behaviour. Studies for East Pakistan (now Bangladesh) are summarized in Khan *et al.*, [12]. In Hyderabad, West Pakistan, an intensive radio campaign was found to be fairly effective in generating family planning communication as well as action in terms of use [9]. Some other studies have examined the role played by field functionaries in the adoption of contraceptive methods.[6] As these studies, though relevant, are not directly related to this paper they have not been reviewed here.[7]

ASSESSMENT OF COMMUNICATION STRATEGIES

Given these efforts that have been made to assess the importance of various communication media in changing family planning behaviour, there are still many issues that remain to be resolved. First, is the replication of the experiments on a larger scale. Not only is it difficult to repeat 'the treatment' in an exact manner but such replication is also very expensive, in most cases. Findings of controlled experiments, therefore, must be supplemented by other studies such as feasibility studies and field surveys. Reliable information relevant to actual field operations are needed by the programme authorities when it comes to the application of successful experiments in the planning of communication activities at the national level.

Second, findings of many of such experimental studies need to be updated, following changes in the strategies and organization of the programme.

Third, more indepth studies are needed on a national basis for various cross-sections of the population. There is a need to assess which communication strategies are most effective for special subsections within the target population, what intensity and frequency of various exposures would yield effective and efficient results, given the available resources. It might be noted that the intensity of exposure to communication media and its effect on behaviour has not been analysed in any of the studies reviewed above.

Measures of Media Exposure

The present paper is an attempt to answer in a partial and limited sense the first and the third questions raised above. That is, to supplement the findings of some of the experimental studies that have been conducted to data, and to carry out an indepth analysis at the national level for various cross sections of the population. As mentioned earlier, further analysis which would help in the updating of results is underway from the PFS, 1975.[8]

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[6]See for example, Gardezi [6]; Zaidi [23]; WEPREC [21] Cobb [2] and Kantner [8]. For additional exposition of the initial programme and the restructured programme see Osborne [13] and Wajihuddin [1].

[7]Some studies which are relevant but not so directly related to the central concern of this paper pertain to analyses of interpersonal communication between husbands, wives and others once family planning knowledge has been imparted. Examples of such studies are Syed [18] and Shah [16].

[8]The objective of the proposed analysis would be not only to update the findings of the present study but also to attempt to answer some of the questions raised and to test some of the hypotheses which could not be tested.

The present study attempts to assess the fertility 'response' in terms of attitudes and behaviour when currently married women were exposed to different types and numbers of media. The two dimensions of media exposure that have been explored consist of (i) the nature of media from which the women first heard about family planning methods; and (ii) the intensity of exposure measured by the number of media from which the women had heard about family planning methods. Fertility response was measured in terms of positive attitudes towards family planning, ever-use of any contraceptive method and children ever-born.

The reason why the source of first knowledge and not current knowledge per se was chosen was that selection of this variable enabled us to measure fertility responses to sources that were mutually exclusive. Also, assuming that the source that was remembered as a 'first' source has 'primacy' in the thinking of a large number of respondents, it can be meaningfully used as a predictor. Our second measure of media exposure, namely the number of media from which respondents had heard of family planning, combined different types of media. Different kinds of interpersonal and mass media channels have been assumed to carry equal weight. The total number of sources to which the respondent was exposed was simply added up.

Based on the findings of the past studies in the field, the following hypotheses were formulated. First, mass media sources would be atleast as effective as interpersonal sources of communication in terms of positive fertility response. In other words, those exposed to either type of media would have positive attitudes towards family planning and would have used contraceptive methods.

Second, the effect of exposure on children ever-born might not be significantly different for various sources, (except for the subgroup of urban educated) for the following reasons. The respondents had been exposed to the family planning messages for a very short time and use of contraception could not have prevented a large enough number of children to effect completed family sizes on the average. Also, the higher parity women are usually the first ones to adopt family planning and have a uniformly high parity.

Third, intensity of exposure to mass media was expected to have a positive association with favourable attitudes and contraceptive use. It has been found internationally that combining various mass media and interpersonal channels of communication produces better results than exposure to any one type of media [15]. It has been suggested that to achieve higher returns in the family planning programme in Pakistan, communication should be based on a multimedia and multi-disciplinary approach [14]. It is because of these types of findings that we feel that respondents who reported that they had heard of family planning methods from a larger number of sources would also have a more positive attitudinal and behavioural response.

It must be pointed out here that the causal direction among these relationships is not conceptually clear or unidirectional. Those who had initially positive attitudes might have been active knowledge-seekers. Also, those who had tried a method might have then sought out more information from a greater number of channels. If the additional channels provided reinforcing messages,

together with additional information, this might have promoted continuous use. It is not possible to test these hypotheses in the present study, given the nature of the data.

Theoretically, the type of communication media or the intensity of exposure to media constitute intervening variables which mediate between certain 'given' characteristics of an individual and the attitudes or behaviour being studied. In this study we have defined these background variables to consist of: Age, educational and employment status of wife; number of living children of the couple; educational level of the husband; type of family; economic status of the family measured by the number of durable items owned, whether the house is *kutcha* or *pucca* and has electricity or not.[9] A higher degree of confidence can be placed in any relationships that are found after some of these basic variables have been controlled. These particular variables were selected because they have been shown to be significant explanatory variables in predicting contraceptive behaviour in earlier studies on Pakistan [16, 24].

DATA AND ANALYSIS

As mentioned above, the present study has used data from the National Impact Survey of 1968-69. Data for the rural and urban samples of currently married women have been analysed in this paper. One of the main objectives of the Impact Survey was to provide an evaluation of the official national family planning programme that had been started in 1965 by looking into the knowledge, attitudes and contraceptive adoption by couples. Sufficiently detailed data were collected on the respondent's socio-economic status, fertility history and family planning knowledge and practice. There was very little emphasis on collecting attitudinal data. Other relevant areas on which data were collected were the respondent's exposure to mass media of communication, in general, and with reference to family planning in particular. A stratified random sample of 1730 rural and 1180 currently married women was drawn to represent Pakistan.[10] Data for these women have been used for the following analysis.

In the analysis of the fertility behaviour as it is affected by the type and intensity of media exposure, first the sources which were reported to have imparted the family planning message have been examined. Next, an attempt has been made to analyse the effect of exposure to different types and varying numbers of media on attitudes, ever use and children ever-born (CEB). This is done after controlling for the various background factors listed above and then looking at the relationship between media exposure and fertility response by using multiple regression analysis. The analysis has been done separately for rural and urban areas of Pakistan.

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[9] Other important background variables like family income and migration history could not be included due to lack of data. Also, data on other relevant psycho-sociological variables e.g., community attitudes towards family planning, the value placed on having children etc., were not available.

[10] For details of the Impact Survey, see [19].

Sources of Exposure and Characteristics of Respondents

Table 1 presents data on women who said they had received information about family planning methods from the various sources that were read out to them by the interviewer.[11] A very large proportion—93 percent of both rural and urban women (who had heard of family planning methods) reported that friends and relatives had been a source of information for them. Family planning personnel were reported to be the next most important source for rural women, while mass media channels were reported by many of the urban women. Of the urban women, 57 percent reported radio or television and 52 percent reported posters and pamphlets to be a source of family planning information. One other noticeable finding from Table 1 is that husbands were a source of information for over half of the urban and one-third of the rural wives.

Table 1

*Percentage of Wives Who Had Heard of Family Planning Methods by Different Sources of Communication**

	Urban N = (996)*	Rural N = (1295)	Total**
Newspaper	27.3%	5.5%	12.1%
Religious Leaders	5.1%	3.5%	4.0%
Husbands	52.7%	32.3%	38.5%
Friends or relatives	93.1%	93.2%	93.1%
Family Planning Personnel	35.7%	44.5%	41.8%
Doctor	21.2%	5.3%	10.1%
Hakim	0.8%	0.6%	0.7%
Radio or Television	57.0%	28.4%	37.1%
Mass Meetings	3.8%	2.4%	2.8%
Posters and Pamphlets	52.1%	16.8%	27.5%
Singing and Drama, Parties, *Mushairah*	3.7%	0.9%	1.8%
Cinema	11.2%	2.2%	5.0%
Others	2.2%	1.6%	1.8%

* Excluding cases where respondent had not heard of any method to delay or prevent pregnancy.
**The percentages for the total were calculated on the basis of weighted date.

[11] A list of 13 different media from which the respondent could have heard was read out to her. The respondent could therefore have heard of family planning from a number of different combinations of media. It was not feasible to analyse the data in terms of these many possible combinations, given the coding scheme.

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Table 2 presents the mean values and the standard deviations for the dependent and explanatory variables used in the regression analysis. Definitions of the variables are given in Appendix A. It might be noted that the urban women were slightly older and had somewhat larger mean numbers of ever-born and living children. As expected, the economic status and educational levels were much higher in urban as compared to rural areas. Urban respondents had exposure to about one additional media of family planning communication than the rural respondents (3.8 and 2.9 respectively). Also, about one-third of the respondents in rural areas reported family planning personnel to be their first source of information compared with about one-fifth of the urban respondents. Thus, it seems that the family planning programme had been relatively successful in getting the message across to rural wives (looking at those who admitted having heard of family planning).

Table 2

Means and Standard Deviations for the Variables Used in the Regression Analysis, Rural and Urban Pakistan

Variables	URBAN		RURAL	
	Mean	S.D.	Mean	S.D.
Positive Attitudes	0.52	0.68	0.50	0.50
Ever-Used	0.25	0.43	0.17	0.38
CEB	4.54	2.99	4.32	2.99
CEB 65-69	0.72	0.72	0.73	0.66
House pucca	0.67	0.47	0.16	0.36
Has electricity	0.61	0.49	0.14	0.34
No. durable items owned	3.35	2.65	1.72	2.12
Age of wife	30.79	8.18	30.39	8.06
No. of Living Children	3.63	2.46	3.32	2.33
No. of media of exposure	3.82	2.03	2.91	1.71
Non-nuclear families	0.55	0.50	0.55	0.50
Education Wife 1	0.09	0.29	0.03	0.17
2	0.02	0.13	0.01	0.08
3	0.08	0.27	0.04	0.18
4	0.07	0.25	0.02	0.13
5	0.05	0.21	0.01	0.06
Education Hus. 1	0.08	0.27	0.04	0.19
2	0.01	0.11	0.01	0.06
3	0.14	0.35	0.11	0.31
4	0.19	0.39	0.16	0.37
5	0.24	0.43	0.12	0.32
Heard from friends, relatives	0.67	0.47	0.60	0.49
Heard from mass media	0.14	0.35	0.08	0.27

Results from the Regression Analysis

Two types of regression specifications were used in the analysis, in order to answer the questions raised so far. The specifications were based on the following line of reasoning: the number of living children has generally been found to be a significant variable in determining attitudes and behaviour with regard to family planning. Also, there is some evidence that a certain amount of interaction exists between the exposure variables and number of living children. Family Planning studies in many developing countries have shown that one of the reasons for contraceptive practice is higher-than-expected number of children that the user women have. It follows that such women are more active knowledge seekers and hence expose themselves to media of communication. Interaction terms between the following variables were therefore included in the regressions in order to control for the possible interaction effects: (i) intensity of exposure and number of living children; and (ii) type of media of first exposure and number of living children.

Results of the regression analysis are presented in Tables 3—5 with attitudes, contraceptive use and CEB as dependent variables. For the sake of brevity, these tables contain only the coefficients obtained for the exposure variables in relation to the dependent variables. The complete regressions, which are available from the author on request, contain, in addition to the variables specified in Tables 3—5, the following measures of the woman's and family's characteristics: housing type (0/1); electricity (0/1); wife's age in years; number of certain consumption items owned; a measure of the wife's education level; a measure of the husband's education level; and a measure of whether the family in which the woman resides is nuclear (0/1). These additional variables are included in the regressions to control for differences in socio-economic characteristics among families in the sample, especially differences in family wealth, tastes, and the costs associated with having and raising children. Detailed definitions of all variables used in this analysis are given in the appendix.

Some of the salient findings from the complete regression equations might be pointed out here. None of the predictors except intensity of exposure had a statistically significant effect on attitudes toward family planning. When contraceptive use was treated as the dependent variable, several explanatory variables were found to have significant effects on it. For example, age of wife had a positive (though declining) effect on contraceptive use. Also, contraceptive use was significantly higher among the relatively more affluent women and the women with ten or more grades of education, particularly in the urban areas. Age of wife had the expected positive effect on both children ever-born and children born during the previous five years. High education of both husband and wife exerted significant negative effects on children ever-born, within the urban respondent. Electrification of the house, within urban areas, also had a significant negative effect on children ever-born. Electrification can be treated as an indicator of a higher cocio-economic status. Thus, it was found that the women with relatively high socio-economic status reported greater use of contraception and a relatively smaller number of children ever-born. This finding was particularly true in urban areas.

Table 3
*Regression Results for Selected Explanatory Variables with Positive Attitudes as Dependent Variable**

Explanatory Variables	URBAN			
	Equation			
	1	2	3	4
No. of living children	0.02 (0.97)	−0.02 (1.16)		
Intensity of Exposure	0.09 (3.60)		0.05 (3.80)	
Intensity × No. living children	−0.01 (1.68)			
Media 1 = Friends, relatives	—	−0.12 (1.06)		−0.04 (0.63)
Media 2 = Mass Media		−0.07 (0.46)		0.07 (0.84)
Media 1 × No. living children		0.02 (0.84)		
Media 2 × No. living children		0.03 (1.15)		
Intercept	0.323	0.710	0.510	0.692
R^2	0.073	0.057	0.069	0.054
F	3.13	2.14	3.29	2.41
N	773	773	773	773
	RURAL			
No. of living children	−0.01 (0.30)	0.01 (0.38)		
Intensity of Exposure × 10-1	0.02 (0.68)		0.03 (1.78)	
Intensity x No. of living children	0.00 (0.48)			
Media 1 = Friends, relatives		−0.05 (0.57)		−0.06 (1.21)
Media 2 = Mass Media		0.12 (0.88)		0.10 (1.10)
Media 1 × No. living children		−0.03 (0.14)		
Media 2 × No. living children		−0.01 (0.21)		
Intercept	0.43	0.48	0.40	0.45
R^2	0.045	0.046	0.044	0.046
F	1.14	1.06	1.26	1.24
N	485	485	485	485

t-ratios in parentheses.

*Table 3—5 presents the results only for communication variables. The complete regression may be obtained from the authors. For a discussion of the regression results of other variables see p. 412

Table 4

Regression Results for Selected Explanatory Variables with Ever-Use as Dependent Variables

Explanatory Variables	URBAN Equation			
	1	2	3	4
No. of living children	0.01 (0.69)	0.07 (5.25)		
Intensity of Exposure	0.01 (0.47)		0.05 (5.87)	
Intensity x No. living children	0.01 (3.54)			
Media 1 — Friends, relatives		0.02 (0.26)		—0.09 (2.33)
Media 2 — Mass Media		—0.01 (0.05)		0.06 (1.10)
Media 1 x No. living children		—0.03 (2.11)		
Media 2 x No. living children		0.01 (0.70)		
Intercept	—0.48	—0.47	—1.01	—0.78
R^2	0.253	0.233	0.196	0.174
F	13.44	10.9	10.8	8.83
N	773	773	773	773
	RURAL			
No. of living children	0.01 (0.77)	0.08 (5.46)		
Intensity of Exposure	0.02 (1.24)		0.06 (5.76)	
Intensity x No. living children	0.01 (2.60)			
Media 1 = Friends, relatives		0.02 (0.26)		—0.13 (3.43)
Media 2 = Mass Media		—0.01 (0.10)		—0.11 (1.55)
Media 1 x No. living children		—0.04 (2.76)		
Media 2 x No. living children		—0.03 (1.02)		
Intercept	0.03	0.037	0.34	—0.23
R^2	0.19	0.16	0.14	0.10
F	5.70	4.27	4.34	2.82
N	485	485	485	485

t-ratios in parentheses.

Table 5

Regression Results for Selected Explanatory Variables with CEB and CEB 65-69 as Dependent Variables

Explanatory Variables	URBAN			
	CEB		CEB 65-69	
	EQ 1	EQ 2	EQ 1	EQ 2
Intensity of Exposure	0.04 (0.94)		—0.01 (0.49)	
Media 1 = Friends, relatives		0.02 (0.09)		—0.01 (0.11)
Media 2 = Mass Media		0.02 (0.06)		—0.17 (2.06)
Intercept	—7.69	—7.61	—0.08	—0.08
R^2	0.53	0.53	0.19	0.19
F	50.5	47.53	10.2	10.0
N	773	773	773	773
	RURAL			
Intensity of Exposure	0.09 (1.33)		—0.01 (0.35)	
Media 1 = Friends, relatives		0.18 (0.83)		0.05 (0.77)
Media 2 = Mass Media		—0.60 (1.47)		—0.15 (1.33)
Intercept	—9.11		—1.39	—1.43
R^2	0.49	0.49	0.20	0.20
F	26.59	25.31	6.76	6.59
N	485	485	485	485

t-ratios in parentheses.

Exposure and Positive Attitudes

The net impact that exposure to different types of media had on attitudes towards family planning does not seem to be very large. Intensity of exposure was the only variable which showed a significant and positive effect on attitudes favourable towards family planning. This was true in urban areas only (Table 3). This statistically significant relationship between intensity of exposure and positive attitudes does not tell us anything about the possible causal relationship between these variables. It could be that as women became exposed to a large number of media, they developed positive attitudes, perhaps because of the mutually reinforcing messages. It is, however, equally logical to argue that only those women who had positive attitudes exposed themselves to many communication channels—because they were seeking such information.

The interaction term-intensity by number of living children had an unexpected (though statistically insignificant) negative effect on favourable attitudes. This means that among those women who had a large number of children, the effect of intensity of exposure on attitudes was less positive (or negative). We find it difficult to explain this relationship, at this stage.

The type of media from which the respondent had initially acquired knowledge did not have a significant effect on attitudes towards family planning. The signs of the coefficients are, however, worth noting. Exposure to mass media seemed to have a generally positive effect while exposure to friends and relatives seemed to have a negative effect on attitudes. These findings are elaborated upon in the next section.

In general, the equations explained a rather small amount (between 4 to 7 percent) of the total variance in positive attitudes, in both rural and urban areas. None of the variables (except intensity of exposure, in urban areas) had t-ratios which came up to the conventional statistical significance levels. It is perhaps more meaningful to investigate how actual behaviour was effected by the selected explanatory variables. This is done in the following section.

Exposure and Ever-Use

Intensity of exposure had a strong, positive effect on contraceptive use, in both rural and urban areas (Table 4). The interaction between intensity of exposure and number of living children also had the expected positive effect on use. That is, with the increase in the number of living children, intensity of exposure to communication media contributed positively towards adoption of contraceptive methods. The reader might be reminded here that the stated relationships were found after controlling for several socio-economic and demographic variables.[12] The question pertaining to the possible causal sequence among these variables is again crucial for any policy implications. It is tempting to conclude on the basis of this strong positive relationship that more users can be recruited by 'pushing' multi-media campaigns. This is a dubious conclusion, however, since the knowledge gathering effort might have

[12]Other explanatory variables which had significant effects on contraceptive use in urban areas were age of wife, wealth (as measured by number of durable items owned) and high (matric+) educational level of wife. Age of wife had a positive though declining effect on contraception. Wealth and education both had significant positive effects on contraceptive use for all the regressions sets.

followed, and not preceded the adoption itself. Persons who started using (as a result of some media exposure, of course) were probably more keen to gather additional information. They, therefore, sought such information. Furthermore, they probably had a better recall, in terms of the sources, while reporting.

In terms of exposure to the type of media from which the respondent had initially heard, the findings were less clear. Exposure to friends and relatives as a channel had a significant 'negative' effect on contraceptive use, in both rural and urban areas. This finding, to a large extent, seems to have resulted from our inadequate definition of the variable. For the subgroup of women who had heard only from friends and relatives, it would be almost impossible to use any (modern) method, since friends and relatives are usually not the suppliers of contraceptive devices. On the other hand, family planning personnel and doctors can (and do) convey both the message and the contraceptive device. Thus, there is by definition a negative relationship between obtaining initial knowledge from friends and relatives and contraceptive use. It might be noted that about 30 percent of the urban and 44 percent of the rural (non-user) respondents who had heard first from friends or relatives had heard from no other source but this.

We expected that exposure to mass media would have a positive effect on use. This was found to be true in urban Pakistan, although the coefficient was not statistically significant at the 5 percent level. In the rural areas there was a large negative (but insignificant) effect of exposure to mass media on contraceptive use. It might be pointed out here that the economic status and education variables had a positive effect on use only in the urban areas. These variables had no effect on use in the rural areas. One possibility is that the conservative, anti-family planning forces were still strongly at work among the relatively affluent and educated segments of the rural population. These segments have the largest probability of being exposed to mass media channels. Therefore, the observed negative relationship between exposure to these channels and contraceptive use is perhaps a manifestation of the generally conservative attitudes of this affluent, educated subgroup in the rural areas.

The variables taken together explained a noticeably larger proportion of the variance in ever-use in urban than in rural areas (see Table 4). In general, a larger amount of the variance was explained when the number of living children and the interaction variables were included.

Exposure and Children Ever-Born

Achieving attitudinal and behavioural change, in terms of contraceptive use, constitute intermediate objectives in most family planning programmes. The final objective in these programmes generally consists of achieving lower fertility, by averting or preventing a certain number of births. We have used two measures of fertility in order to estimate the impact, if any, that exposure to various types and numbers of media might have made on children ever-born to the women in our sample. The total number of children ever-born (CEB) and the total number of children born during the five years prior to interview (CEB 65-69) were used as dependent variables. The latter variable was used because it represented the time period since the government programme had

been put in place. We, therefore, expected to pick up any possible changes in fertility that might have occurred in recent fertility of any subgroup, perhaps (partly) as a result of the programme.

Neither the intensity of exposure nor the type of media to which the women were exposed had a significant impact on the CEB of women. When CEB 65-69 was used as the dependent variable, however, exposure to mass media channels was found to have a significant negative effect on fertility, atleast in the urban areas. The coefficient for rural areas was negative and about as large, but was not statistically significant. These findings seem to be somewhat in contradiction to our earlier finding about the relationship between exposure to mass media and reported contraceptive use. Such exposure had a small positive effect on use in urban and a negative effect on use in rural areas.[13] In order to further explore the role that contraceptive use might have been playing in causing the observed negative effect on fertility, we ran a regression using CEB 65-69 as the dependent variables and ever-use as one of the explanatory variables.[14] Ever-use did not have a significant effect on CEB 65-69 in either urban or rural areas. This means that the observed negative relationship between exposure to mass media channels and CEB 65-69 was the result of some intervening factor other than the ones we had controlled for. As discussed above, we had taken into account variables relating to the educational levels of husbands and wives, their economic status and their demographic characteristics like age of wife. Given these controls, what other factors could be important enough to produce the negative association between exposure to mass media channels and children born in the previous five years?

There could be certain social-psychological factors, which had not been measured in our study, that were responsible for the negative effect on fertility among those who had first heard of family planning from mass media sources. It could be that this subgroup of women had acquired lower fertility values through some mechanism of modernity we had not controlled for in this study. They had therefore managed to lower their fertility, perhaps through methods which were not accounted for in the survey.[15] Whatever the possible reason for this negative impact on fertility might be, it is nevertheless interesting to note, for future research, that even after all the controls, women who had initially heard of family planning from mass media channels were able to decrease their fertility during the five years that the programme had been in operation.

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[13]Both coefficients were insignificant at the conventional level, the t-ratios being 1.1 and 1.5 respectively.

[14]The intensity of exposure and type of media was excluded from the list of explanatory variables for this run.

[15]Our measurement of ever-use consisted of all programme methods (like pill, IUD, condoms) as well as non-programme methods like abstinence, withdrawal and breast-feeding. Roughly 40% of the total reported use consisted of non-programme methods like these. Even when the analysis was restricted to the users of modern, programme methods, we found no signicant association between exposure to mass media and contraceptive use, or between contraceptive use and recent fertility.

CONCLUSIONS

The most notable findings from the foregoing analysis are that:

(*i*) There was a positive (significant) association between intensity of exposure to communication media and favourable attitudes towards family planning and contraceptive use. The causal directions inherent in this apparent relationship are however not clear.

(*ii*) Intensity of exposure did not have any effect on the children ever-born, or children born during the previous five years.

(*iii*) obtaining initial knowledge of family planning from friends and relatives had an unexpected negative effect on contraceptive use. It has been argued in the paper that this effect is most likely a result of definitional problems and probably does not represent a true effect.

(*iv*) Finally, exposure to mass media channels (as the initial information source) seems to have had a significant negative effect on recent fertility, particularly in the urban areas, but this effect does not work through contraception.

Before we begin to draw any policy conclusions on the basis of these findings, we must examine once again the possible causal sequence that seems to be inherent in these relationships. Our results indicate quite clearly that parity and age of the wife were in themselves two of the most crucial variables which could have had a large influence on the information seeking behaviour of women. One strong indicator of this is that both age of wife and number of children living had strong positive effects on contraceptive use in urban as well as rural areas. Those women who had a generally large number of living children, it appears, perceived the need for contraceptive use more than the others. Such perception motivated them to seek information which could provide them knowledge about contraception. Therefore, they exposed themselves to the many channels which had been put in the field by the family planning programme. They thus obtained the supplies and started using them. Once they started using any method(s) it is likely that in the due course of time the women came to gain knowledge of additional sources which provided information related to family planning. Since the women would have, by this time, become involved in the process and their motivation (to adopt or continue adoption) would be higher, they would have remembered these additional sources supplying information, and reported them more accurately.

Thus, if the causation flows from higher age and parity to the perceived need for seeking contraceptive information, then the roles of alternative media and intensity of media exposure have to be carefully evaluated. This can best be done through especially designed, preferably experimental, studies. Also, if we believe that age and parity are the basic causal variables in this sequence, then communication programmes have to be designed in order to meet the needs of this specific subgroup. Finally, attempts have to be made in the overall communication effort to 'shift' the causal sequence backward so that younger women with fewer children start using contraceptive methods for both spacing and limitation of births.

Appendix

VARIABLE DEFINITIONS

1. HOUSE TYPE	0—If house type is *Katcha*. 1—If house type is *Pucca*.
2. ELECTRICITY	0—If house has no electricity. 1—If house has electricity.
3. AGE OF WIFE	10-65 years. Wife's age at the time of the survey.
4. NUMBER OF ITEMS OWNED	0-8+items. Items owned by respondent. 0—If no items owned. (Items included Bicycle; Radio/Transister; Clock; Sewing Machine; Kerosens, gas or Electric Stove; Iron; Water or tea set; Torch; Patromax; Motor/ Scooter; Dressing Table with mirror).
5. EDUCATION OF WIFE	0—Does not read or write (Omitted Category). 1—Can read but does not write. 2—Can read and write, education 0-1 grades. 3—Can read and write, education 2-5 grades. 4—Can read and write, education 6-9 grades. 5—Can read and write, education Matric 10+grades.
6. EDUCATION OF HUSBAND	See wife's education.
7. TYPE OF FAMILY	0—If nuclear type of family. 1—If non-nuclear type of family.
8. NUMBER OF LIVING CHILDREN	Total number of living children of respondent. 0—If no living children.
9. TYPE OF MEDIA OF FIRST EXPOSURE	Media 1-Friends/relatives.* Media 2-Mass Media.**
10. INTENSITY OF EXPOSURE	1-8+number of media (Number of media to which a respondent is exposed).
11. INTEX	Intensity of Exposure x Number of Living Children.
12. MED 1 CHL	Media 1 x Number of Living Children.
13. MED 2 CHL	Media 2 x Number of Living Children.

Continued—

* Friends, Relatives, Neighbours, Husbands etc.

** Radio, T.V., Films, Newspapers, Magazine, Posters, Mass Meetings, Singing and drama. The omitted category was that of Medical and Family Planning Personnel including Doctors, Hakims, Lady Health Visitors, Nurse, Dai, Family Planning Officers, Family Planning Assistants and Lady Family Planning Visitors.

Appendix—Continued

14.	POSITIVE ATTITUDES	0—for Negative Attitudes. 1—for Positive Attitudes.
15.	EVER USE	0—Never Used. 1—Ever Used.
16.	CEB	0-16 Total number of live births of respondent. 0—If no live birth of respondent.
17.	CEB 65-69	Total number of live births during 1965 to 1969.

REFERENCES

1. Ahmed, Wajihuddin. "Field Structures in Family Planning". *Studies in Family Planning*. Vol. 2, No. 1. 1971.

2. Cobb, J.C. and Harry M. Raulet. "The Medical Social Research Project at Lulliani". *Studies in Family Planning*. No. 8. 1965.

3. Family Planning Association of Pakistan. *Before and After Mass Media Experiment: Impact of Two Alternative Motivational Campaigns on Knowledge, Opion and Practice of Family Planning*. 1973.

4. ———— *The Effect of Low-Tone Motivational Campaign on Knowledge, Opinion and Practice of Family Planning*. 1974.

5. Fayyaz, Mohammad. *Niaz Baig Survey: The Impact of Motivational Campaign of Family Planning Knowledge, Attitude and Practice*. West Pakistan Family Planning Association, Lahore. 1971.

6. Gardezi, Hassan Nawaz and Attiya Inayatullah. *The Dai Study*. A research monograph of the West Pakistan Family Planning Association. 1969.

7. Jafarey, S.A., J.G. Hardee and A.P. Satterthwaite. "Use of Medical-Para-Medical Personnel and Traditional Midwives in the Pakistan Family Planning Program". *Demography*. Vol. 5, No. 2. 1968.

8. Kantner, John F. "Pakistan: The Medical Social Research Project at Lulliani". *Studies in Family Planing*. Number 4. 1964.

9. Karlin, Barry and S.M. Mushtaq Ali. "The Use of Radio in Support of the Family Planning in Hyderabad, West Pakistan". *Pakistan Journal of Family Planning*. Volume 2, Number 2. 1969.

10. Kaul, S. Jabeen. "A Comparison of Field Performance of Medical Versus Para-Medical Personnel in the IUD Programme in Mymensingh and Lahore". *Pakistan Journal of Family Planning*. National Research Institute of Family Planning. Vol. 3, No. 2. 1969.

11. Khan, Majeed A. and Harvey M. Choldin. "New Family Planners in Rural East Pakistan". *Demography*. Vol. 2. 1965.

12. Khad, N.I., R. Reynolds, S. Jahangeer Haider. "Implication of Selected Studies Conducted by East Pakistan Research and Evaluation Centre 1965-70". *Paper presented at the First National Family Planning Seminar of the People's Republic of Bangla Desh, Dacca, November* 1972

13. Osborne, Richard Warren. "The Sialkot Experience". *Studies in Family Planning*. Vol. 4, No. 4. 1974.

14. Rafe-uz-Zaman. "Mass Communication and Family Planning: Developing Approaches in Pakistan". *A paper prepared for the Interregional Seminar-cum-workshop on integrated Use of Folk media and Mass Media in Family Planning Communication Programmes, held at Delhi,* 7-16 *October*. 1974.

15. Ross, John A., Adrienne Germain, Jacqueline E. Forrest and Jeroen Van Ginneken. "Findings from Family Planning Research". *Reports on Population/Family Planning*. No. 12. 1972.

16. Shah, Nasra M. "The Role of Interspousal Communication and the Adoption of Family Planning Methods: A couple approach". *The Pakistan Development Review*. Vol. XIII, No. 4. Winter 1974.

17. Swedish Pakistan Family Welfare Project. "Mass Communication Experiment: Preliminary Report". *Proceedings of Fifth Biannual Seminar on Research in Family Planning*. National Research Institute of Family Planning, Lahore. 1968.

18. Syed, J. Iqbal. "Interspousal Authority and Communication Patterns in Tribal Families". *Pakistan Journal of Family Planning*. Vol. 3, No. 2. 1969.

19. Training Research and Evaluation Centre. n.d. *National Inpact Survey*. Pakistan Population Council.

20. Von Euler, Ronald. "Mass Communication Experiment-Some Preliminary Findings". *Pakistan Journal of Family Planning*. Vol. 2, No. 1. 1969.

21. West Pakistan Research and Evaluation Centre. "Urban Dai Organizers: Performance and Attitudes". *Pakistan Journal of Family Planning*. Vol. 2, No. 1. 1968.

22. Zaidi, Wiqar H. "Effectiveness of Communication Strategy for Family Planning Information in West Pakistan". *Pakistan Journal of Family Planning*. Vol. 3, No. 1. 1969.

23. ———— "Characteristics and Performance of Family Planning Organizers in West Pakistan". *Pakistan Journal of Family Planning*. Vol. 3, No. 2. 1969.

24. Zurayk, Huda C. "Demand for Contraception in Pakistan: Dialogue Between Data and Theory". Unpublished Ph.D. dissertation, Baltimore, Johns Hopkins University. 1974.