

# Proximity and Other Geographical Factors in Family Planning Clinic Utilization in Pakistan

by

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and

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## I. INTRODUCTION

An understanding of the social and psychological forces effecting the use that people make of existing medical care and health facilities is essential to programme planning and administration. Yet, little is known about these forces as they operate in Pakistan and elsewhere with regard to the utilization of such specialized facilities or services as family planning clinics. This analysis of clinic records from the Karachi Family Planning Association (FPA)<sup>1</sup> explores certain social forces in clinic utilization in terms of their geographical distribution in this urban area of Pakistan. In the last section of this paper we generalize the term "clinic" to include the wide variety of sources or centres of contraceptive supply provided in the Third Five Year Plan (such as village volunteers, *dais*<sup>2</sup>, and shopkeepers) and consider the implications of our findings in terms of this broader concept of clinic.

One of the dilemmas faced by administrators of certain clinic-centred public health and family planning programmes is whether to place their clinics within or very near the residential area of the people for whom the service is mainly intended, or to place the clinic somewhat more distant from this primary target group. The main argument for proximity is that most potential clients or patients will not avail themselves of clinic services unless the services or facilities are

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<sup>1</sup> Other aspects of the Karachi FPA experience are under analysis and much of the data has been reproduced as Research Report No. 34 of the Pakistan Institute of Development Economics [12].

<sup>2</sup> *Dai* is an experienced midwife though not qualified.

highly accessible. Critics of the proximity argument suggest, on the other hand, that a more important concern to many individuals than accessibility is anonymity: that many potential clients would tend to ignore and do nothing about their problem rather than to chance being seen by their neighbours entering, for example, a venereal disease, tuberculosis, leprosy or family planning clinic.

The proximity argument is a case for the dominance of environmental conditions in at least this aspect of health behaviour. The anonymity case, on the other hand, argues the overriding effect of reference group behaviour and other social forces in spite of the geographical situation. They are not diametrically opposed views insofar as both would agree that an awareness of the problem and a drive to do something about it must exist before the individual even considers the location of the clinic. (The proximity argument might be extended, however, to say that the presence of a clinic in the neighbourhood could stimulate awareness, interest and discussion of the health problem.) Both focus on that part of the decision-making continuum between readiness to act (or to change) and the action itself. One holds that the individual will tend to perceive proximity of the clinic at this point as enabling or simplifying action, whereas the other holds that he will tend to perceive proximity as the final barrier to action because it precludes anonymity.

Another way to look at the problem is provided by urban sociologists who treat the utilization of neighbourhood facilities (in preference over corresponding facilities outside the neighbourhood) as one measure of the solidarity, the adherence to village or local-community sentiments, or the resistance to urbanism of the neighbourhood [7; 8]. This approach, although it has not been intended to apply to any such specialized facility as a family planning clinic, does suggest that community behaviour toward a clinic might correlate with certain identifiable characteristics of geographical sub-areas.

The closest pool of comparable data that we can draw upon for background on this problem is that accumulated in the field of public health and medical care. Odin Anderson has summarized the past research on "the utilization of health services", concluding:

Literature on the psychological and sociological aspects of use of health services is not extensive or systematic. It is not possible therefore, to present a detailed or coherent picture of how people behave regarding health services" [2].

The relative weights of the geographical arguments would vary with the specific health problem concerned and with the society, culture or community in which the specific problem may carry different connotations. The dilemma

always exists to a greater or lesser degree, however, and it is of particular relevance to population control in Pakistan today, when clinics are increasing in number and more importance is given to this problem in the Third Five Year Plan [22, p. 27].

## II. PURPOSE

In addition to the analysis of data from the Karachi FPA clinic on these questions, we have reviewed experiences in other parts of Pakistan. We have found proximity of residence to clinic (or other source of contraceptive supply) to be an irregular correlate of clinic utilization. This paper approaches clinic records within a community framework, attempting to explain patterns of clinic behaviour in terms of the social characteristics of clients and their respective sub-communities of residence.

## III. SOURCE AND LIMITATIONS OF THE DATA

Between June 1958 and May 1964, the Karachi FPA received and interviewed 3,422 female family planning clients from all parts of the metropolitan area. Many of these women returned after their first visit and some continued to visit the clinic regularly for additional contraceptive supplies. The record card filled out on each new client was revised about midway through this six-year period to conform more closely to international standards. Although the records from the earlier period included fewer entries and somewhat broader categories on certain variables, they are still comparable with those of the later period. The record cards were of a relatively high clerical standard and there were few apparent omissions or inconsistencies. Particularly encouraging aspect, in this respect, was the continuity of clinic personnel interviewing clients and filling out the record cards over the entire six-year period.

This analysis is concerned primarily with residential data and their relationship with clinic attendance data. Address of the client is almost inevitably recorded in clinic records of any kind. Often in Asian cities, however, no sense can be made of the street address given by many clients without an elaborate street indexing system or an intimate knowledge of the lanes and by-lanes typical of these cities. This problem is compounded in a rapidly growing metropolitan area such as Karachi by the presence of refugees and migrant villagers who set up new *bustees*<sup>2</sup> and settlements [1; 21; 28]. Because of the temporary nature of the housing of these *juggi*<sup>3</sup> settlements, they are often excluded from city maps and street indexes.

Clients sometimes falsify their addresses to avoid the embarrassment of home visits or family planning literature and reminders in the mail. Occasionally, they

<sup>2</sup> *Bustee* is a Persian word, meaning a place where people live.

<sup>3</sup> *Juggi* is a kutchra house, made of mud plaster and bamboo.

will list their place of work other than their own or a fictitious address in a higher class neighbourhood. Experienced clinic workers conscious of these problems might tend to discredit what the client says and carelessly record the address reported.

Although these potential limitations of address validity are not without some standing in the Karachi FPA records, the addresses given by clients in a 1960 cohort were found in connection with a special home-visit follow-up study to have been generally accurate.

Of the 3,422 clients attending the Karachi FPA between 1958 and 1964, only 212 (about 6.2 per cent) gave no address or a fictitious or inadequate address impossible to code. Another 123 clients were from outside Karachi District, probably visiting relatives in the city, although some of these might have been Karachi residents attempting to maintain anonymity.

#### IV. METHOD OF ANALYSIS

In coding the addresses of the 3,422 Karachi FPA clients, we have used a large wall map (16 inches to a mile) containing the boundaries of 102 territorial "chunks" as delimited by the *People of Karachi* study [16; 17]. By classifying the residence of each FPA client in one of the 102 chunks, we are able to analyze many of the demographic, social and economic characteristics of the FPA clients in relation to the Karachi sub-population from which they came.

"Chunk" was a somewhat arbitrary sampling unit based on boundaries of main streets and landmarks within the city and homogeneous communities surrounding the city. These 102 chunks, each with an average of about 4,000 households, are grouped into eight "major divisions". The major divisions form geographically compact units, with the exception of the "Noncontiguous Area" which consists of outlying chunks with special characteristics (*e.g.*, islands, military cantonments and refugee colonies). The designations for the other seven major divisions are descriptive of the main feature or function of the area. (For detailed descriptions of the localities within chunks and major divisions, *see* [16, Appendices E and F, pp. 359-368]).

It should be emphasized that these geographical units are in no way intended to represent ecological units delineated by social area indexes of the Shevky, Williams and Bell type [3; 29; 30], although this would be highly desirable for studies such as the present one [*cf.* 8; 25; 27; 35].

In analyzing the proximity factor specifically, we have used a modification of the original *People of Karachi* map, drawing concentric circles to a scale of successive one mile radii outward from the location of the FPA clinic. The

clinic is somewhat centrally located in the city, so that concentric circles up to 3 miles radius did not extend beyond the city boundaries. By identifying the FPA client and the total populations resident in each chunk (the boundaries of which often overlap the concentric circle lines), we were able to classify their approximate distance from the clinic in miles and to establish clinic user rates for each of the proximity areas.

Again, the geographical units delineated by this methodology must be distinguished from any sociological or ecological implications that might be drawn because of the similarity of the concentric circle approach to that of some sociologists in their study of urban area [e.g., 18 and 29]. Whereas Shaw and McKay, for example, draw their concentric circles outward from the commercial and industrial centres of American cities, ours are simply centred on the FPA clinic, which is outside the commercial and industrial centres of Karachi.

## V. THE RESIDENTIAL DISTRIBUTION OF FPA CLIENTS

### A. FPA Clinic Utilization Rates for Major Divisions

Table I below attempts to define the eligible family planning target populations of the eight major divisions as narrowly as possible, and to distinguish between an "acceptor rate" and "user" or "effective user" rates. By "acceptor" of family planning, we mean simply anyone who has ever attended the clinic for contraceptive supplies, regardless of whether they ever returned to the clinic for additional supplies. It is important to make this distinction at the outset because these terms are used variously in the family planning literature.

### B. Target Populations of the Major Divisions

Having so defined the numerator of the "acceptor rates," we encounter similar problems in arriving at appropriate denominators of "eligible" or "currently eligible" women because of insufficient data on the populations of the major divisions. Berelson, in attempting to arrive at an average target group for national programmes, estimates that in developing countries about half of the married women in reproductive ages will not be available for family planning at any given time because they are pregnant, lactating, sub-fertile or currently practicing some method; and that perhaps one out of five of the remainder actively want another child [4, p. 10]. Having already accounted for the women whose husbands are not present, we could perhaps take 50 per cent as our factor of reduction for the target group. This would mean doubling all of the acceptor rates in Table I, giving a maximum acceptor rate of 3.58 per cent in the commercial area, a minimum of 0.50 per cent in the rural area, and an overall rate of 2.40 per cent.

TABLE I

TOTAL POPULATION, FEMALE POPULATION 15-49, AND TARGET POPULATION IN 1959, AND ALL FPA CLIENTS, 1958-64, BY MAJOR DIVISION OF KARACHI

Major division	Total 1959 population (1)	All women 15-49 years (2)	Married women 15-49 with husband present		All FPA Clients		Acceptor rate (5) ÷ (3) × 100 (7)
			(3)	(4)	(5)	(6)	
			No.	%	No.	%	
Commercial area	376,390	79,101	59,396	20.8	1,064	34.5	1.79
Industrial area	110,347	21,400	18,353	6.4	114	3.7	0.62
Lower residential area	233,924	50,247	40,487	14.2	342	11.1	0.84
Middle residential area	449,270	97,770	77,066	27.0	1,037	33.6	1.35
Upper residential area	184,087	39,272	31,230	10.9	319	10.3	1.02
Noncontiguous area	47,327	7,907	6,867	2.4	50	1.6	0.73
Labour area	249,631	48,775	39,987	14.0	130	4.2	0.32
Rural area	74,549	15,627	12,348	4.3	31	1.0	0.25
Total Karachi	1,725,525	860,099	285,734	100.0	3,087	100.0	1.08
Outside Karachi or not reported	—	—	—	—	335	—	—
Grand total	—	—	285,734	—	3,422	—	1.20

Source: Columns (1), (2) and (3) from unpublished mimeographed Table 2.05 of the *People of Karachi Survey*. (Karachi: Pakistan Institute of Development Economics, 1964).

Applying the same arithmetic used by Berelson and Freedman<sup>4</sup> for arriving at their "currently eligible" and "success" figures for Taichung [5, p. 8], we would start with a base of 2,26,475 married women between the ages of 20 and 39 [16, Table 1.01, pp. 22-23]. We would then take 55 per cent of this figure to obtain an "eligible" population of 1,24,561. If in Karachi, as in Taichung, about half of these are "...women who actively want another child—young wives who have not completed their families or those who want a son" [5, p. 8], then we would have a "currently eligible" target group of 62,280 women in a given recent year in Karachi. With this denominator, the Karachi FPA has obtained an average of less than one per cent of the "currently eligible" population in any of its first six years of operation, and a cumulative total of 5.49 per cent of the currently eligible.

<sup>4</sup> In Taichung, where literacy is very high and the proportion of eligible women now already using an acceptable method of contraception is probably much higher than in Karachi, a base population of 30 per cent of the married women in peak childbearing years, 20-39, is used for calculating programme success figures. Freedman is then able to say of the Taichung programme, "while 'only' 11 per cent of all married women twenty to thirty-nine years old were 'acceptors' up to March 15 of this year [1964, one year after the programme began], the proportion is probably 20 to 40 per cent for properly defined groups of 'eligible' respondents" [10, p. 380].

These figures are not intended for comparison with the Taichung experiment. The Karachi FPA is only one of many sources of contraceptive supply in Karachi, and clinic attendance is a very different numerator than professed family planning in survey interviews. The Taichung experiment has already become a classic example of the results possible from a well planned educational field programme. There has been virtually no field programme in Karachi, a city with approximately six times as many people as Taichung.

### C. Other Clinics and An Overall Karachi Clinic Utilization Rate

It is important, nevertheless, to recognize some of the important factors not accounted for in our "acceptor" rates, as in most family planning data. It is particularly important here because the varying rates for the different major divisions of Karachi may be a function, for example, of differing availability of contraceptives from other sources of supply.

No matter how narrowly we define the target populations from which the Karachi FPA clients are drawn, the net influence of the clinic over the six-year period from 1958 to 1964 was approximately one per cent of the women in reproductive age groups and not more than five or six per cent of the most eligible couples. Assuming that each of the other major family planning clinics in Karachi (notably Jinnah Medical College Hospital, Dow Medical College, Civil Hospital and the Municipal Dispensary) has had equal success and that any client ever visiting one clinic never visited another, we could multiply the FPA rate by the number of Karachi clinics to arrive at a total Karachi clinic user rate somewhere between 10 and 20 per cent.

Neither of the assumptions for arriving at this estimate, however, is very tenable. It is certainly unlikely that most women clients have attended only one clinic. Particularly suspected of "clinic-hopping" are 1,460 clients, nearly half of all FPA clients, who attended the clinic only once. These women either became regular attenders of the other clinics or else never really adopted family planning. In either case, if we assume that the experience of the other clinics in terms of the proportion of clients attending only once is the same as that of the FPA, then the estimate of 10 to 20 per cent should be halved.

The other assumption upon which the tentative clinic user estimate for Karachi is based—that other clinics have been as busy as the FPA—also is subject to doubt. Most government clinics are devoting only part-time to family planning and are heavily burdened with patients requiring treatment not preventive attention. Their waiting rooms are crowded, lacking the privacy that family planning clients demand. Smaller government dispensaries located throughout Karachi District offer family planning supplies, and it may be these to which

most clients eventually turn for continuing supply. Most of the pharmacies within the city now offer contraceptives but at non-subsidized prices. The geographical distribution of family planning adoption and practice in Karachi will be qualified by these considerations, all requiring further investigation.

Other questions that need further study in Karachi before an accurate picture of the geographical distribution of family planning trial, adoption and diffusion can be constructed are: What are the attitudes and practices of private doctors in providing family planning advice and supply? What happens to clients after they attend a clinic? Do they talk to their neighbours about it? Do they quietly move from one clinic or pharmacy to another to avoid being seen twice by anyone, or to avoid disclosing their coital frequency to one clinic worker? What is their impression of the clinics they have attended, and what image of the clinics do they pass on to others they may tell about it?

#### **D. Place of Employment vs. Place of Residence**

Another important geographical variable in clinic utilization that needs further investigation is the place of employment of clients and their spouses. The geographical distribution of clients by place of work might ultimately prove to be more significantly related to clinic attendance than distribution by place of residence. In East Pakistan, for example, the Dacca FPA clinic at Segum Bagicha is located in the shadow of both the Central and Provincial government offices. A casual review of their records revealed numerous male clients attending the Dacca FPA who live in one of several government housing colonies with family planning clinics of their own. In the housing colony clinics, records are found on the same clients or their wives.

In Karachi, 72 per cent of the working men and 57 percent of the working women work outside their immediate neighbourhood (chunk) and the majority of these people work beyond any contiguous chunk [16, Table 3.22, pp. 126-127]. This degree of work-day mobility further indicates the relative unimportance of residential proximity to clinics.

By far the largest proportion of either male or female workers in Karachi, about one out of three, is employed in the commercial area [16, Table 3.21, pp. 124-125] in addition to those working in their own households in the commercial area. Many more have no fixed place of work, probably spending much of their time in the commercial area. These figures may help to explain the overrepresentation of the commercial area in the FPA clinic. Clients do tend to give address of employer instead of their own occasionally in family planning clinics. The same explanation may apply to the overrepresentation of the middle residential area, which employs more than 20 per cent of all Karachi women working outside their own households [16, Table 3.21, pp. 124-125].



Clients may prefer to attend a clinic on their way to or from work for convenience or for anonymity, and/or they may alternate their visits between one clinic and another to avoid becoming salient in either.

#### **E. Continuing Attendance Rates for Major Divisions**

While the data on geographical distribution of clients ever attending the clinic are highly subject to the problems of defining the eligible or target populations, continuing attendance after the first visit attempts to measure the sustained family planning motivation of those ever attending the clinic, independently of census data limitations. The limitations here, however, are those of varying access to other sources of supply as discussed earlier. Still, the continuing attendance of clients is a general indicator of how effectively the FPA programme has satisfied the women ever attending this clinic. Whereas the geographical distribution of clients ever attending the clinic measures how widely the FPA programme has spread its influence in terms of the awareness, interest and trial stages of adoption for those who say they were not previous users of any contraceptive, continuing attendance is one criterion of actual adoption.

The term "continuing attendance" cannot be equated with continuing use, and is used guardedly because of its similarity to several other terms (including, *e.g.*, "acceptor," "active user" and "irregular user") applied variously by different family planning investigators. A more universally consistent term is the negative designation "dropout" but even this is variously defined. International criteria for these terms have not been established and the only efforts to approach agreement on terms for clinic records have been among investigators of clinical effectiveness and use-effectiveness of contraceptive methods [*e.g.*, 33].

In general, evaluations of clinic attendance patterns have used a kind of life-table technique to arrive at real or hypothetical "survival" rates of clients at successive intervals after first attendance. Some publications of clinic data have not gone this far but have presented enough raw data to enable the reader to make the calculations himself. If dropout figures are available, they can be subtracted successively from the balance of active clients after given intervals. Other investigators have not been satisfied with this kind of estimate of continuing use and have therefore interveiwed clients at their homes after a given period. Tietze and Alleyne used both the life-table technique and the follow-up interview in their West Indies study and found that, for diaphragm users at least, the estimate of active users based on clinic records very closely matched the percentage actually observed in follow-up interviews [34].

Table II presents the continuing attendance pattern of clients from each of the major divisions of Karachi. Comparing Table II with earlier findings in Table

I, it is apparent that the two areas with the largest proportions of FPA clients and the highest "acceptor rates", the commercial and middle residential areas, do not have attendance or dropout records that differ significantly from the other areas of Karachi. Although the middle residential area clients have the lowest proportion of dropouts in the first month of attendance, they are exceeded both by industrial area and upper residential area clients in the proportion who continue to attend for more than two years. The commercial area exceeds both the lower and upper areas in proportion of dropouts in the first month and has a lower continuing rate beyond thirty-one months than even the rural area.

It should be emphasized that the clients from the middle residential area are not necessarily middle class, and those from the upper residential area are not necessarily a predominantly upper class group. The extent to which income and other socio-economic factors are disturbing the residential area data will be discussed below. The important thing to note here is that gross clinic attendance figures (all clients ever attending) may bear no relationship to continuing attendance rates or continuing use rates. Thus, it is not to be recommended that generalizations can be made from socio-economic or demographic distributions of all clients to the actual adoption or continuing use of contraceptives by socio-economic or demographic groups. It would have been an error, for example, to conclude from the data in Table I that residents of the commercial area of Karachi are a more highly contracepted population than other areas. Table II contradicts such a conclusion and suggests instead that residents of the com-

TABLE II

DURATION OF CLINIC ATTENDANCE BY MAJOR DIVISION OF RESIDENCE  
KARACHI, FPA, 1958-1964

Duration of attendance	Percentage of clients dropping out by major division of residence							
	Commercial area	Industrial area	Lower residential area	Middle residential area	Upper residential area	Non-contiguous area	Labour area	Rural area
Never returned	53.0	58.9	52.8	45.2	49.2	65.9	62.4	70.0
1 — 6 months	15.9	15.0	16.4	14.7	15.6	9.1	12.8	6.7
7 — 12 months	12.8	6.5	16.1	14.3	13.1	11.4	10.4	3.3
13 — 18 months	6.7	2.8	6.0	10.7	7.7	4.5	8.0	13.2
19 — 24 months	6.2	7.5	4.2	7.5	5.4	2.3	3.2	3.3
25 — 30 months	2.9	2.8	1.5	3.5	4.2	4.5	1.6	0.0
More than 31 months	2.5	6.5	3.0	4.0	4.8	2.3	1.6	3.3

mercial area would be found in a cross-sectional survey to have a higher proportion of sometime users but a lower proportion of effective or continuing users than residents of other areas of Karachi. In other words, the *incidence* of family planning attempts may be higher in the commercial area, but the *prevalence* of family planning practice might well be less at a given time than in other areas.

#### F. Income of Husband by Major Division of Residence

In attempting to explain the differences among acceptor and continuing attendance rates of the major divisions, we have mentioned the possible influence of place of employment and various socio-economic factors operating in the different major divisions. We are unable, however, to establish any consistent co-variation between these variables and the observed clinic attendance patterns of FPA clients. Income of husband, for example, was found to have no consistent relationship with either the duration of attendance or the number of times a woman has attended the Karachi FPA clinic [12, Table 21, p. 84]. Hence, even though mean income may vary among the clients from one major division to another, it is not a relevant clinic attendance variable in itself and therefore would not help to explain attendance pattern differences among the major divisions.

It is interesting to note, however, that the major divisions with the largest numbers of FPA clients and the highest "acceptor rates" had the least differences between the mean incomes of the clients' husbands and those of the Karachi populations of those area. Table III presents these differences in mean income by major division, indicating also that the highest mean incomes were among clients travelling the greatest distances to attend the clinic. It should be recalled, however, that the areas showing least differences in mean incomes and highest "acceptor rates" also had relatively low continuing user rates.

TABLE III

MEAN INCOMES BY MAJOR DIVISION OF RESIDENCE: KARACHI FPA CLIENTS, 1958-64, AND "PEOPLE OF KARACHI", 1959

Major division of residence	Mean income per month		Difference (rupees)	Per cent of all clients
	Karachi FPA. (rupees)	people of Karachi* (rupees)		
Commercial area	350	248	102	34.5
Industrial area	391	177	214	3.7
Lower residential area	294	161	133	11.1
Middle residential area	377	207	170	33.6
Upper residential area	585	227	358	10.3
Other areas, noncontiguous	588	188	400	6.8

\* Calculated from [16, Table 4.40, pp. 202-203], lumping income groups Rs. 1-49, 50-74 and 75-99 into a single midpoint Rs. 50 group to make People of Karachi means comparable with those of FPA.

G. Source of Referral to the Clinic by Major Division

A variable that we have found to be most highly correlated with continuing attendance is the source of referral of clients to the clinic. Women who attended the clinic on the recommendation of a doctor, health visitor or other professional *individual* continued to attend the clinic for an average of only 3.6 months. Those who said they came to the clinic on the recommendation of a friend or relative continued to attend for an average of 5 months. Those who said they were referred by some *institution* such as a hospital or the FPA itself attended for an average of 6.9 months. The most distinguished group were those who said they came merely on hearing of the clinic through the press or radio, attending for an average of 10.7 months. An explanation for these differences is not within the scope of the present analysis [see 12, pp. 62-77]. Suffice it to say here that personal or face-to-face means of communication, education or persuasion are generally more effective in changing attitudes and behaviour but the less personal means such as mass media reach people who are already highly motivated to adopt the practice recommended and who merely need to be told where to go or how to do it. Thus, the FPA clients who said they were referred by the press or radio may be regarded as a group who were generally more individually motivated to adopt family planning and less in need of continuing social support or encouragement from others than were the clients referred by friends, relatives or doctors.

We are concerned here, however, with the extent to which this important variable may have influenced the differences found in the continuing attendance rates for the various major divisions. Table IV shows the geographical distribution of clients in each of the four referral source categories. The absence of any major differences in the relative frequencies indicates that the effect of the source of referral variable is somewhat equitably distributed among the major divisions. In other words, there is virtually no variation between one geographical group and another in their source of referral to the FPA clinic. We may tentatively conclude, therefore, that urban area of residence and source of referral of clients act independently of one another as factors affecting incidence and prevalence of contraceptive practice.

Although no differences are found between major division of Karachi on the sources of referral of clients to the FPA, there may still be geographic differences in terms of proximity of residence to the clinic. This subject is taken up in the following section.

VI. RESULTS OF THE PROXIMITY ANALYSIS

A. Experience in East Pakistan

Looking briefly first at evidence from East Pakistan, which stimulated the Karachi proximity analysis, it was found in Dacca that nearly 60 per cent of the

TABLE IV

## SOURCE OF REFERRAL OF FPA CLIENTS BY THEIR GEOGRAPHICAL AREA OF RESIDENCE, KARACHI, 1958-64

Major division	Doctor, health visitor, med. person		Husband, friend or other FPA client		FPA or other med. institution		Press or radio	
	No.	%	No.	%	No.	%	No.	%
Commercial area	389	35.5	144	32.6	338	31.9	112	34.1
Industrial area	37	3.4	21	4.8	42	4.2	9	2.8
Lower residential area	113	10.3	39	8.8	130	12.2	30	9.2
Middle residential area	341	31.2	131	29.6	339	32.0	111	33.8
Upper residential area	102	9.3	57	12.9	87	8.2	37	11.3
Noncontiguous area	9	0.8	9	2.0	21	2.0	10	3.0
Labour area	41	3.8	24	5.4	46	4.3	9	2.8
Rural area	11	1.0	1	0.2	14	1.3	5	1.5
Outside Karachi	52	4.7	16	3.6	44	4.1	5	1.5
All areas	1095	100.0	442	99.9	1061	100.0	328	100.0
No information	81	—	25	—	54	—	32	—
All cases	1176	—	467	—	1115	—	360	—

first 9 months' clients of four government housing colony clinics (ostensibly set up for residents of the colonies) were from outside the housing colonies. About 20 per cent of the nonresident clients were from rural areas outside the city of Dacca [13]. Moreover, many residents of the housing colonies with clinics of their own are known to be attending the Dacca Family Planning Association clinic several miles away for their contraceptive supplies. Many others are known to be obtaining supplies through commercial or other channels outside the housing colonies, even though they could obtain the supplies more cheaply and more conveniently at the housing colony clinics.

In a study of 204 women receiving sterilization operations in Dacca city, 32 per cent were found to have come from rural areas outside the city or on the periphery of the city [26].

In the early months of a village volunteer programme near Dacca in rural East Pakistan, nearly 40 per cent of the clients were from villages other than that of the volunteer, many with volunteers of their own in their own villages. Of the 869 clients from other villages, 312, or 36 per cent, were females [6], for whom inter-village mobility is generally very limited in this Muslim society.

In another rural area of East Pakistan, nearly 27 per cent of *women* taking contraceptive supplies in ten villages in the first year of the programme were from outside the village in which they obtained their supplies. In the second year, this proportion dropped to 20 per cent [19, p. 3], suggesting a possible change over time in the proximity factor, perhaps as the programme becomes legitimized and a community atmosphere of support develops.

#### **B. Proximity of Karachi FPA Clients**

These data from East Pakistan are striking even in their raw form. They do not account for the population base from which the proximate and distant clients derive, but they do indicate a rather high degree of mobility in clinic attendance. In analyzing the Karachi data, therefore, we have attempted to control to some extent the population from which each group of clients is drawn. Table V below presents the results of the concentric circle analysis of the residential areas of Karachi FPA clients.

There were 1.75 clients per 1000 total population from the area within a one mile radius of the FPA clinic; 2.10 between 1 and 2 miles from the clinic; 2.25 from the area beyond the two-mile circle but within the city limits; and 0.86 from rural and outlying areas. These figures tenuously indicate that within the city itself, the populations living nearest the FPA clinic have made proportionately less use of this clinic service than those living farther away.

#### **C. Seven Contiguous Areas Around the Karachi FPA**

Within a half-mile radius of the clinic, however, another concentric circle demarcated seven geographical "chunks" immediately contiguous to the FPA clinic. Table VI shows that these seven areas surrounding the clinic itself had an overall client rate of 3.69 per 1000 population but a high degree of disparity among them, ranging from less than one client per thousand population to more than 35 per thousand.

Thus, when distance is held relatively constant, a high degree of variability is found from one neighbourhood to another in the proportion of residents utilizing the clinic. This could mean *a*) that some neighbourhoods have a different image of the FPA clinic than others and prefer some other source of supply; *b*) that some neighbourhoods simply have not accepted family planning for unknown social or psychological reasons; or *c*) that there is some kind of social pressure operating in some neighbourhoods to discourage those who have accepted family planning from attending the FPA clinic.

In any case, our data have served to establish that proximity alone is not sufficient to account for the utilization of a family planning clinic. A more practical

TABLE V

**DISTRIBUTION OF FPA CLIENTS 1958-64 AND TOTAL 1959 KARACHI POPULATION  
BY DISTANCE OF GEOGRAPHICAL CHUNKS OF RESIDENCE  
FROM THE FPA MODEL CLINIC, KARACHI**

Chunk of residence in relation to clinic	FPA clients, 1958-64		Total population 1959 <sup>a</sup>		FPA clients per 1000 population
	Number	Per cent	Number	Per cent	
Within 1 mile radius of FPA clinic	875	27.2	498,827	27.7	1.75
Between 1 and 2 miles from clinic	840	26.2	399,465	22.1	2.10
More than 2 but within the city	1161	36.2	516,656	28.6	2.25
Rural and outlying areas <sup>b</sup>	334	10.4	388,227	21.6	0.86
Total reported	3,210	100.0	1,803,175	100.0	1.78

<sup>a</sup>From [22, Table 7.14, pp. 297-301].

<sup>b</sup>Includes labour area, noncontiguous area and rural area, major division and non-Karachi clients.

TABLE VI

**FPA CLIENTS 1958-64, TOTAL 1959 POPULATIONS, CLIENT RATES PER 1000  
POPULATION AND HOUSEHOLD COMPOSITION OF CHUNKS WITHIN ONE-  
HALF MILE OF THE FPA CLINIC, KARACHI**

Chunk No. <sup>1</sup>	Name of chunk <sup>2</sup>	FPA clients, 1958-64		Total population 1959 <sup>3</sup>		Clients per 1000 population	Majority of habitation <sup>3</sup>
		Number	Per cent	Number	Per cent		
1014	Arambagh	96	17.9	30,750	21.1	3.12	<i>Pucca</i>
1029	Jahangir Park	70	13.0	1,980	1.4	35.35	<i>Pucca</i>
1031	Plaza Qrts.	102	19.0	21,025	14.4	4.58	<i>Pucca</i>
1039	Ramswamy	198	36.9	14,550	10.0	13.61	<i>Juggi</i>
4043	Patel Park	14	2.6	21,312	14.6	0.66	<i>Pucca</i>
4044	KGA Ground	1	0.2	19,003	13.1	0.05	<i>Juggi</i>
4045	Jacob Lines	56	10.4	36,972	25.4	1.51	<i>Juggi</i>
All chunks within ½ mile		537	100.0	145,592	100.0	3.69	

<sup>1</sup> The first digit of the chunk number identifies the major division in which the chunk lies: 1 = Commercial area, 4 = Middle residential area. The remaining 3 digits are the chunk reference and may be used to locate the chunks in the frontispiece map of *The People of Karachi* monographs [22, pp. ii-iii; 20, pp. ii-iii].

<sup>2</sup> The chunk name is not necessarily a comprehensive description of the area included, usually identifying only the most prominent part of the chunk [22, Appendix E, pp. 259-366].

<sup>3</sup> from [22, Table 7.14, pp. 297-301].

statement, perhaps, that we can make from these findings is that the location of a clinic should not be regarded as being in one neighbourhood or community, even when considering only a half-mile radius, but rather it is bounded by several neighbourhoods or sub-communities, each distinct in its attitude and behaviour toward the clinic. A geographical analysis of clinic records can help to identify these ecological groupings while other more *a priori* methods could be misleading. For example, in the seven "neighbourhoods" surrounding the Karachi FPA clinic, one might have selected those with the poorest housing in which to conduct an educational field programme. As it turns out, however, Table VI shows that the Patel Park area, which has a majority of *pucca* housing, has one of the lowest clinic attendance rates; and the Ramswamy area, with a majority of *juggi* dwellings, has one of the highest attendance rates.

We still cannot presume to have identified social units with the geographical chunks used in this analysis [8]. Each of the seven chunks surrounding the clinic certainly has several social neighbourhoods of varying solidarity within it, any one or two of which could account for the high or low family planning client rate of the chunk. By narrowing the field in this way, however, it is possible to plan an educational programme or further research more efficiently.

#### D. Income and Proximity

The mean monthly income of clients from the seven contiguous chunks was higher than that for all FPA clients (Rs. 360 and Rs. 292, respectively), and among the seven contiguous chunks, clients from the high client rate areas tended to have higher mean incomes than those from the low client rate areas. Jahangir Park clients had a mean income of Rs. 445, compared with Rs. 262 for Patel Park clients and Rs. 318 for Jacob Lines area clients. There is the vague suggestion in these data that when persons of higher economic status lead the way in attending a family planning clinic in the neighbourhood, others will follow; whereas when persons of lower economic status are the first in their neighbourhood to utilize the clinic, others are discouraged from following (e.g., the one and only case from the 19,000 population of KGA Grounds had Rs. 50 income). This hypothesis is consistent with intuitive reasoning and with research in other fields but deserves further investigation in Pakistan as it relates to family planning and clinic utilization.

#### E. Source of Referral and Proximity

Looking again at the source of referral data for a clue to the differing clinic utilization rates for the contiguous neighbourhoods, Table VII shows striking differences between referral sources for clients from all parts of Karachi and those for clients from the areas immediately surrounding the clinic. There is



virtually no difference, however, between sources of referral for the clients from high client rate areas around the clinic and those for clients from low client rate areas. The main distinction of clients from areas within one-half mile of the clinic is that they are referred to the clinic by a friend, husband or other relative in about 61 per cent of the cases, compared with only 15 per cent of all clients. Hospitals, maternity homes, other clinics, doctors, nurses, health visitors and other institutions or professional workers are much more important sources of referral to the FPA clinic than for those nearby.

A most remarkable exception to this rule, which perhaps will assist in explaining the source of referral differences, is a small geographical chunk in the lower residential area called Chakiwara Police Lines (including New Kumharwara, chunk number 1079). This relatively homogeneous neighbourhood with

TABLE VII

**SOURCE OF REFERRAL TO THE CLINIC OF ALL CLIENTS, OF CLIENTS IN THE SEVEN CONTIGUOUS CHUNKS AROUND THE CLINIC, AND OF CLIENTS IN THE HIGH AND LOW ATTENDANCE RATE CHUNKS\* CONTIGUOUS TO THE FPA CLINIC, KARACHI, 1958-64**

Source of referral to the FPA clinic	All clients 1958-64		Clients from 7 contiguous chunks*		Clients from 5 chunks with <1%*		Clients from 2 chunks >1%*	
	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent
Other FPA client friend or relative	467	15.0	294	60.9	151	62.1	143	59.6
Hospital or other institution	1114	35.7	18	3.7	5	2.1	13	5.4
Doctor, health visitor, other professional person	1177	37.8	146	30.2	74	30.5	72	30.0
Press or radio	360	11.5	25	5.2	13	5.3	12	5.0
All clients reported	3,118	100.0	483	100.0	243	100.0	240	100.0
No information on referral source	304	—	54	—	36	—	18	—
All clients	3,422	—	537	—	279	—	258	—

\* Cf. Table VI.

a population of only 2,960 [16, Table 7.14, p. 299] contributed 227 clients to the FPA clinic in the six years from 1958 to 1964. This represents about 9.3 per cent

of the total population of this area, compared with only 3.5 per cent in the most highly represented contiguous chunk. The majority of habitations in the Chakrawa Police Line area were *juggi* in 1959 [16, Table 7.14, p. 299] and the mean income of FPA clients from this chunk is Rs. 302, only slightly above the Rs. 292 average for all FPA clients and considerably below the Rs. 360 for clients residing in the seven contiguous chunks.

The predominant sources of referral for clients in this chunk were the more personal ones, friends or relatives (57 per cent), and two-thirds of these were former clients of the FPA. Only 5 clients (2.4 per cent) said they were referred by mass media, and only 15 (7.1 per cent) came on the recommendation of an institution such as a hospital or clinic.

## VII. DISCUSSION AND IMPLICATIONS

Neighbourhood or community family planning clinics can only increase in number and importance as the national programme grows and places greater emphasis on new clinical methods such as the intrauterine contraceptive device. Despite the designs of the Third Five Year Plan to "bring family planning to every doorstep" [22, p. 1], this will only be accomplished by establishing some continuing, institutionalized, readily accessible source of supply and family planning advice. Whether this institution is a village *dai* or volunteer, a regularly scheduled visit of a mobile unit, or an "outdoor department" of a hospital or rural health facility, it still takes on the essential characteristics and the problems of a neighbourhood clinic.

The essential characteristic of the community family planning clinic with which we are concerned here is its proximity to various sub-communities or neighbourhoods. The problem of such a clinic with which we are concerned is the utilization of the clinic by certain people of the community. We have observed in rural and urban programmes of East Pakistan and in Karachi, West Pakistan, that a large proportion of the people who utilize the clinic services are from outside the immediate community in which the clinic is located.

In a more controlled look at the Karachi experience, it was observed that the larger numbers of clients from outside the one-mile radius of the clinic were indeed larger *proportions* of the populations of the more distant parts of the city than were the clients of closer neighbourhoods in proportion to their total populations (Table V). In other words, a smaller proportion of the residents within one mile of the FPA clinic had ever used this clinic than residents of more distant areas of the city. Further study of the availability and use of other family planning services within these different areas is necessary before a definitive statement can

be made about the relationship between proximity and clinic utilization. The Karachi data, nevertheless, do go one step beyond the East Pakistan evidence on this question in that the inverse relationship is confirmed when population size and distance are controlled.

In attempting to account for these variations in FPA clinic utilization, we have been limited to those factors for which data was available in the FPA clinic records, the 1959 *People of Karachi* survey, and the 1961 population census. These are the same kinds of data, however, with which most studies on utilization of health services have been done [2], and, again, they are more complete than similar data in other parts of Pakistan.

Investigating regional differences in FPA clinic utilization within the city, the commercial area and the middle residential area together accounted for nearly 7 out of every 10 clients. These were also the most populous of the 8 major divisions of Karachi, but they were still highest in ratio of FPA clients to total population (Table I). When the same areas were compared on continuing attendance or duration of attendance, however, it was found that the industrial and upper residential areas exceeded the commercial and middle residential areas (Table II). A distinction should perhaps be made between high incidence of family planning attempts and high prevalence of continued contraception in different areas. Such a distinction could be very useful in planning educational field and clinic activities. This distinction could be made from survey data as well as from clinic utilization data.

Place of employment, housing standards, mean incomes, and source of referral to the clinic, all have been found somewhat helpful but less than adequate in accounting for regional differences in FPA clinic utilization.

The most fruitful line of investigation has been in comparing clients from neighbourhoods in the immediate half-mile radius of the FPA clinic with those from other areas of Karachi, and comparing the contiguous neighbourhoods themselves. Although the contiguous half-mile area had a slightly higher overall client rate than more distant areas, most of the difference is attributable to just two of the seven contiguous chunks (Table VI). The great variability found between one area and another at this microcommunity level provides a clearer picture of the sociological and psychological forces at work in determining clinic utilization. It is at this level that numerous avenues of very practical further research suggest themselves. It is also at this level that urban behaviour can be seen to have some implications for rural behaviour, whereas the macrocommunity approach to urban data reveals little of relevance to the village situation.

Thus, in Table VII, major differences between the microcommunity near the clinic and the macrocommunity of Karachi on their respective sources of referral to the clinic were found. The main conclusion to be drawn from these data is simply that most FPA clients from nearby communities are referred by friends or relatives, whereas those from more distant communities are referred more by the less personal sources. We cannot infer a causal relationship but it is reasonable to suggest that the co-variation of source of referral and proximity of residence to the clinic is due to one or more of the following conditions: a) Residents of Karachi communities near the FPA clinic have less contact with professional personnel and institutions than residents from more distant communities. b). The informal channels of communication and influence with regard to the FPA clinic are more effective in the communities near the clinic merely because the clinic is a more tangible and accessible object of reference than it is in more distant communities. c) The potential adopters of family planning in communities near the clinic may actively seek out the opinions and attitudes of their friends and relatives in the community to gain psychological support or an indication of social support for attending the clinic.

Any of these three explanations has important implications for programme planning and deserves further research. The second and third are interpretations of the proximity and anonymity problem. The latter relates to the effect of social pressure on the individual and it may be expected to vary with the degree to which the neighbourhood constitutes a primary membership or reference group for the individual. In rural village communities and in close-knit, established urban neighbourhoods with maximum interaction, the effect would be greatest. In highly mobile urban neighbourhoods, the effect would be minimal.

Foster finds that in most, if not all, societies, "... a small social group . . . provides, through concentrated public opinion, the means for discouraging the innovator. . . ." [9, p. 100]. The people with whom, or near whom, an individual lives are such a primary social group if he looks to them for indications of public interpretation of his private acts. He usually looks to them before he acts in an effort to anticipate their reaction and thereby to evaluate the consequences of the action or change in behaviour [20, p. 414, and 11, p. 216].

The power of the local community over the private behaviour of the individual is predicted by many other factors than those mentioned here, but this brief formulation should at least emphasize the importance of a community approach to family planning. It is not enough merely to convince individual couples of their own need for family planning and then to provide them with an accessible source of contraceptives. An atmosphere of social support for their adoption of the practice must be engendered in the community around them, especially among

older people for whom family planning may be too late but to whom the younger couples turn for legitimization of their behaviour. A favourable image of the family planning programme and of the clinic must be provided not only to the potential adopters of family planning, but also to the community around them.

The image of the family planning clinic is a special problem which our data barely touches upon but which could be a most important factor in the regional differences observed in FPA clinic utilization. The idea or perception of a family planning clinic held by people who have never seen one, or had one accurately described to them, may be assumed to be based partly on their concept of family planning (*e.g.*, some think it means abortion); partly on the kind of people they see going to the clinic (*e.g.*, there was higher attendance in areas where the mean income of clients was higher); but mainly on their past experience with, or their perception of, other kinds of out-patient clinics.

There has been no systematic study in Pakistan of the attitudes of the public toward clinics, although most medical care is provided in out-patient clinics in this country. The Dacca Family Growth Study of the Public Health Education Research Project has a wealth of data on attitudes toward government housing colony family planning clinics as expressed by residents of the colonies in home visits. These are still in the process of consolidation, however, and only a few general impressions can be given here. There is a general tendency for people who have not yet been to the family planning clinic to express concern that there would be no privacy to discuss their specific problems with the family planning worker; that the clinic would be crowded and the clinic worker would have no time to give them individual attention; and that their neighbours would see them entering the clinic and gossip about them, or the clinic records would not be kept secret. The same criticisms were expressed of medical outdoor clinics to which they had gone for other problems.

The popular attitude toward "the lot of the outdoor patients" in Pakistan is graphically expressed in a Dacca newspaper editorial series on hospitals:

For an average of about 500 patients that turn up daily there is only one sultry hall.

In the medical outdoor, on the average a doctor has to attend to 100 patients in five hours and the patients naturally cannot get the attention they deserve [15b].

In the female outdoor, quite a few hundred patients are supposed to be looked after by a tiny team of two lady doctors . . . . . After hours of tortuous waiting, the patients have to

stand in the queue at the dispensing counter for another hour or two. There is no arrangement for seats at these counters. . . . [15a].

The figures presented by this account are subject to question and his descriptions may be somewhat journalistically exaggerated, but the important thing here is the attitude toward clinics that he is voicing on behalf of his readers, corroborated in subsequently published letters to the editor, and reiterated by another newspaper, speculating on the consequences of such clinic experiences:

People once undergoing the rigour and uncertainty at the Outdoor understandably would not repeat their experience.

In the case of women patients the problem is most irksome. Considering the women of our country, so purdah-observing as they are, they suffer from the absence of guides . . . . They move about as if in wilderness until sheer luck takes them to the correct place [32].

These excerpts are presented here only as examples of an attitude that might represent the expectations that people have toward family planning clinics without having attended one. If a woman or her husband associated the idea of attending a family planning clinic with "hours of tortuous waiting" in a "sultry hall" and standing for another hour "in the queue at the dispensing counter," they would need to be convinced by a credible source such as a friend or relative that the family planning clinic is not like this before they would be likely to implement their desire to adopt the practice of family planning.

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