The Influence of Client-Provider Relationships on Teenage Women's Subsequent Use of Contraception

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Abstract: This paper describes the relationships of selected dimensions of nurse-client interaction in county health department family planning clinics to the subsequent contraceptive use of the clinic's unmarried teenage clients. The subjects for the study are the clients and professional staff of 78 clinics: 2,900 eligible clients making their first contraceptive visit and 338 clinic staff nurses. Results of interviews demonstrate that client and staff expectations and interactions are significant predictors of adherence to a contraceptive regimen; under circumstances where clients anticipate, and staff employ, authoritative guidance in helping the clients to select a contraceptive method, clinic mean levels of contraceptive use are substantially increased. Overall, 40 per cent of clinic variation in contraceptive compliance is explained by the interaction dimensions and other aspects of clinic organization addressed in this paper. Implications of these results for the structuring of family planning clinic programs directed toward teenage women are briefly considered. (*Am J Public Health* 1985; 75:33–38.)

Introduction

It is well recognized that the large majority of pregnancies among unmarried teenage women are unintended, and yet are usually the result of no (or irregular) contraceptive use.[1,2] The paradox represented by this apparent contradiction between stated intentions and actual behavior has thus far defied explanation. In a recent report on family planning services in the United States,[3] it was estimated that, in 1979, more than three in 10 of the 4.8 million teenage women at risk of unintended pregnancy were seen in federally subsidized family planning clinics. These clinics are the source of the most medically effective methods for close to half of all adolescent contraceptive users.[4] Our purpose in this paper is to examine the influences on contraceptive outcomes of young women's experiences in the family planning clinics from which they receive contraceptive services.

Family planning clinics may be in a particularly strategic position to influence contraceptive outcomes. Suggestive evidence for this inference comes from a number of studies indicating that the circumstances under which contraceptive services are provided may play a critical role both in clinic attendance and in subsequent contraceptive use.[5–7] Clinic accessibility, special attention to recruitment and follow-up of teenagers, more personalized services, and staff-client rapport have been cited as factors facilitating teenage contraception. However, data concerning the influence of these variables are sparse and sometimes contradictory. For example, a study by Urban and Rural Systems Associates (URSA)[5] found unfavorable treatment by clinic staff to be an important factor in discontinuing clinic use, but results from a more recent survey reported by JWK International Corporation indicated little or no effect of "clinic associated factors" on termination of clinic attendance.[8]

None of the family planning clinic studies reported to date has systematically compared contraceptive outcomes across clinics with different organizational and/or provider characteristics. Family planning clinics are staffed by physicians and nurses and, in their mode of organization and procedures, closely resemble general outpatient care facilities. Research in these latter settings has shown that organizational dimensions such as level of bureaucratization and continuity of care, as well as the quality of interaction between staff and clients, can affect utilization of services, patient satisfaction, and adherence to medical regimens.[9–14] Based on these results, it is reasonable to hypothesize that clinic settings may influence compliance with contraceptive advice in a similar fashion.

The study reported in this paper was based on the premise that quality of interactions between staff and clients is the principal means by which the family planning clinic influences teenage contraceptive behavior. Organizational and provider characteristics are seen as operating through their effects on these interactions. Earlier research[15–22] points to four critical aspects of staff-client interaction:

- the amount of control or direction exercised by clients as compared with practitioners;
- the scope of the interaction (i.e., the range of concerns about the client's life deemed appropriate for discussion);
- the level of trust placed by the client in the practitioner; and
- the degree to which the relationship is characterized by warmth or emotional expression.

For example, in the usual doctor-patient relationship, the physician exercises control based on superior knowledge and skill; the scope of the relationship is narrow; the client is expected to trust the physician's advice; and the relationship is relatively unemotional (the physician does not "become involved").[16,23]

This paper focuses on these four aspects of interaction between family planning clinic nurses and teenage female clients. Our underlying hypothesis is that the clients' subsequent compliance with contraceptive advice will depend both on the specific expectations of staff and clients as to how their relationship should be conducted and on the extent to which these expectations either harmonize or conflict.

Methods

These data were gathered as part of a larger project to investigate contraceptive continuation among teenage women as a function both of their own backgrounds and attitudes

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and of the organizational and staff characteristics of the clinics where these women receive contraceptive services. The subjects were clients and professional staff of 78 Maryland county health department family planning clinics. Eligible clients were defined as all women under age 20 and unmarried who were making their first visit for contraception to one of these clinics between October 1, 1980 and July 1, 1981.

Baseline interviews were completed in the clinics with 2,900 women (about 80 per cent of the eligible population). Clients' expectations for the visit were obtained prior to any significant interaction with clinic staff; when the visit was over, the client was interviewed again to obtain her report of encounters with clinic staff. The client's contraceptive use following the clinic visit was ascertained by six- and 12-month follow-up telephone interviews.

Questionnaires were completed by 338 county health department nurses (86 per cent of all nurses working in the family planning clinics); these questionnaires provided information on nurses' beliefs and expectations about nurse-client interaction along dimensions paralleling the reports obtained from clients.

Finally, data were collected to describe characteristics of the clinics themselves: size, facilities, staff-client ratios, appointment-scheduling procedures, and numbers of clients seen per month.

Interaction Indices

The four interaction dimensions were described earlier: control of the interaction process; scope of interaction; level of trust between client and provider; and warmth of the relationship. In our data, "trust" has been subdivided into two categories: trust in staff's protection of client confidentiality, and trust in staff's advice about the contraceptive method's safety and efficacy. The "warmth" variable was dropped after preliminary analysis revealed it to be unrelated to the contraceptive outcome measures.

Each of the interaction dimensions is represented by a series of statements grouped into three sets of indices: the first two sets reflect desires and expectations that clinic staff and clients bring to the interaction setting; the third set reflects clients' evaluations of what *happened*. A series of statements was constructed for each dimension, with slight differences in wording depending on whether the statements described clients' expectations, staff's expectations, or clients' immediate post-visit evaluations. Statements were followed by Likert-type, five-point response scales, from "strongly agree" (or "exactly what happened") to "strongly disagree" (or "not at all what happened"). Procedures used to select from among these statements (16 for "influence," 15 for "scope," 10 for "trust") those actually used in our analyses are described in the Appendix. For these analyses, all measures are aggregated at the clinic level.

Contraceptive Use

The dependent variable—use of contraception—was operationalized as the proportion of time subsequent to the baseline interview that a respondent at risk of pregnancy (sexually active and not pregnant) was using a medical method of contraception (almost always oral contraceptives). Clients were followed for a median period of 12 months (range = 5.5 to 23 months).

First, each respondent's interval of observation was divided into two-week "time units", and the variable, "time units at risk of pregnancy", was defined as total time units of observation minus time units during which the respondent was not having sex, or was pregnant or married. Next, for each time unit, the respondent's use or nonuse of contraception was recorded. Finally, the outcome measure was constructed, dividing "time units on a medical method of contraception" by "time units at risk of pregnancy" (expressed as a percentage). Thus, the dependent variable reflects the proportion of time over the follow-up period during which an "at risk" client was protected by an effective method of contraception.*

Average level of protection was calculated for all clients attending each study clinic. The median of these averages was 80 per cent—that is, in half the clinics, the average level of protection achieved was less than 80 per cent of follow-up time "at risk" (clinic averages ranged from 25 to 100 per cent).

Results

Table 1 shows the percentages of total respondents who gave affirmative answers to selected statements (slightly paraphrased in the Table) representing the major interaction dimensions. The largest discrepancy between client and nurse expectations, and also between client expectations and their reports of actual clinic experience, is on the dimension of staff influence. Nurses' expectations reflect the non-directive, "counseling" orientation of family work—the client is encouraged to make "her own choice" of contraceptive method—and clinic reality (as perceived by the clients) is much closer to the model espoused by nurses than to clients' preferences for a more-directive approach.

Differences between nurses and clients with respect to indices of expected scope of the relationship (staff attention to clients' personal and family life) are less marked, although clients are almost 50 per cent more likely than nurses to believe that staff should "learn about clients' family life and personal problems"; furthermore, clients are more likely to expect attention to be given to personal problems than to report having received it. Finally, although there are virtually no differences in either expectations or reports of trust in the confidentiality of the clinic visit, nurses are considerably more skeptical than clients that their contraceptive advice will be fully trusted and, indeed, client trust does drop somewhat subsequent to the clinic visit.

The findings shown in Table 1 can be summarized by saying that the expectations of these teenage contraceptive clients correspond most closely to what, in an earlier paper,[19] we have called the "parental" model of staff-client interaction: a relationship characterized by a substantial imbalance of control or authority between the participants, by a broad definition of what may legitimately be discussed, and by high client trust of the practitioner. Given this set of client expectations, our hypothesis leads us to predict that the closer a clinic's characteristic pattern of staff-client interaction corresponds to the "parental" model, the higher will be the average levels of contraceptive use achieved by that clinic. The study results provide strong support for this prediction.

*The theoretical possibility exists that subtraction of "time units pregnant" from the denominator could artificially raise a clinic's continuation rate if that clinic had an unusual concentration of pregnancies. However, both the relatively small total number of pregnancies observed (164) and the distribution of pregnancies across clinics makes this unlikely. The mean number of pregnancies per clinic was 2.1 (range = 0 – 13). The great majority of clinics (77 per cent) had no more than two pregnancies, and the few with larger numbers (only three had more than 10) were also very large clinics.

TABLE 1—Interaction Expectations of Nurses and of Teenage Female Contraceptive Clients, and Clients' Post-visit Reports

Interaction Dimension*	Nurses' Expectations (% "agree")	Clients' Expectations (% "agree")	Clients' Report (% "what happened")
Influence			
Nurse tells teenager what birth control method to get	33.8	74.9	32.6
Nurses sometimes persuade teenager to accept particular method	52.2	[1]	[1]
Scope			
Nurses talk to teenage clients about clients' personal problems	51.2	45.7	30.7
Clinic staff should learn about clients' family life and personal problems	42.2	61.6	[2]
Trust			
Client will trust confidentiality of visit	90.7	92.3	91.5
Client will trust contraceptive advice	65.9	97.5	89.9

[1]Question asked of nurses only.
[2]Question not repeated at post-visit interview.
*Client-staff interaction was measured by a series of statements describing what should happen or what did happen in the encounter, as perceived by nurses, e.g., "Nurses expect to tell clients what birth control methods they should get," and by clients, e.g., "I expect the nurse will tell me what birth control method I should get", "The nurse told me what birth control method I should get."

The zero-order correlation of each interaction index with clinic mean contraceptive use is presented as the bottom row of Table 2. While all six items are significantly associated with the dependent variable—contraceptive use—the pattern of these correlations deserves additional attention. Both influence indices are positively associated with contraceptive use; in clinics where clients want the nurse to tell them what birth control method to get and where nurses admit that they sometimes use persuasion to get a client to accept a particular method, subsequent adherence to the contraceptive regimen is substantially higher. However, clients' desire to be told what to do is by far the stronger predictor.

In contrast to the two influence indices, nurse and client preferences for the scope of interaction have opposing effects on contraceptive use. Clients' belief that staff should learn about the patient's family life and personal problems is positively associated with clinic mean contraceptive use; but, in clinics where nurses want to talk about personal problems, contraceptive use is lower. Finally, the two indices of client trust included in this Table (trust in confidentiality before the visit, and trust in nurses' statements about method effectiveness as reported at the visit's close) are, unexpectedly, both negatively associated with the measure of contraceptive use.** Interpretation of these unexpected findings regarding "scope" and "trust" is deferred until the discussion section of the paper.

Two dimensions of clinic organization were correlated with clinic levels of contraceptive use, and might also be expected to influence patterns of staff-client interaction.*** These dimensions are: a two-item scale measuring nurses perception that the clinic organization allows them sufficient time and adequate opportunity to learn as much as they need to know about their clients; and the number of levels of health department hierarchy above the clinic nurse's (patient-contact) level. The former variable is positively, and the latter variable negatively, correlated with contraceptive use. The third control variable introduced into the analysis is the average age of a clinic's clients. Clinics with younger clients are, again somewhat unexpectedly, likely to have higher levels of contraceptive compliance—and again, it is reasonable to expect that clients' age will affect modes of staff-client interaction.

The upper portion of Table 2 reports the correlations obtained among the selected interaction indices and the control variables. We will return to these data in the discussion of our findings.

Table 3 presents the results of a stepwise regression analysis in which the six interaction indices were entered first, then the two indices of clinic organization, and finally, mean age of clients. The first data column gives the contribution of each independent variable to total variance explained by all variables in the analysis; the second column shows the relative effect of each independent variable on the dependent variable when every other independent variable is controlled.

Three clear patterns emerge from these findings. First, this set of variables is able to account for 40 per cent of the variation in clinic levels of contraceptive use. Second, almost all of the explained variation is seen to be due to characteristics of staff-client interaction. Third, the influence dimension is far and away the most important component of interaction in explaining contraceptive use after the client leaves the clinic. In clinics where clients want the nurse to act in an authoritative fashion and where nurses are prepared to act authoritatively, contraceptive compliance is proportionately increased.

It is important to emphasize that these results are not an

**The negative association is not confined to these two items. All but one of the indices of client trust employed in this study (two tapping pre-visit expectations and six tapping post-visit reports) were negatively associated with subsequent contraceptive use at the clinic level, and the correlation coefficient of the single positively-correlated "trust" item was only .01.

***Relationships between contraceptive use and a wide range of other organizational and clinic characteristics (e.g., size; staff-client ratio; scheduling procedures) were examined. None of these relationships was significant.

TABLE 2—Zero-order Correlation Matrix of Selected Interaction Indices and Control Variables with Clinic Mean Contraceptive Use

	Interaction Indices								
	Influence		Scope		Trust		Controls		
	CRNTELL	NPERS	NTALK	CLEARN	CTCONF	CTTRUTH	TIME	BUR	AGE
NPERS	.02								
NTALK	−.20	.19*							
CLEARN	.72***	−.22*	−.10						
CTCONF	−.09	−.09	.21*	.11					
CTTRUTH	−.08	−.24*	.24*	.04	.16				
TIME	.23*	.06	.11	.16	−.07	.03			
BUR	−.12	−.24*	.01	−.08	.14	.17	−.05		
AGE	−.39***	.05	.06	−.34**	.16	.11	−.28**	−.10	
CONTR USE	.50***	.27**	−.19*	.34**	−.23**	−.24*	.25*	−.20*	−.26*

*p ≤ .05 **p ≤ .01 ***p ≤ .001

Variable definitions:

CRNTELL	Client wants nurse to tell her birth control method to get.
NPERS	Nurses sometimes persuade clients to accept a particular method.
NTALK	Nurse wants to talk to teenagers about personal problems.
CLEARN	Client believes staff should learn about family life and personal problems.
CTCONF	Client expects to trust staff protection of visit confidentiality.
CTTRUTH	Client reports that nurses "told truth" about method effectiveness.
TIME	Clinic organization allows sufficient time and opportunity to learn about clients.
BUR	Number of levels in health department hierarchy above clinic nurse.
AGE	Mean age of clients.
CONTR USE	(See explanation in text.)

artifact of the particular items selected to represent the influence variable. All but one of the 13 influence items from which these two were selected are significantly associated with clinic mean levels of contraceptive use. Furthermore, the influence measures obtained not only from clients but from nurses as well are highly intercorrelated, suggesting that these measures are tapping a very general dimension of clinic-level variation in orientation toward the use of authority in provider-client interactions. When influence indices are held constant by the regression procedure, no other variables in the equation produce significant effects on contraceptive use.

Discussion

These results provide strong support for the hypothesis that the quality of interaction between a family planning clinic's staff and clients does make a difference in the level of contraceptive use over time achieved by that clinic's teenage clients. While the conviction that quality of provider-client interaction is an important variable in achieving positive treatment outcomes or compliance with medical advice is clearly reflected in the literature on health-care delivery,[22,27–28] few studies have provided such a clear demonstration of the impact of this variable on clients' subsequent behavior.

Equally important, these results indicate that the overall attitude climate in a family planning clinic exerts an influence that is independent of any one individual's clinic experience—that is, our data describe a structural effect on an aggregate outcome, rather than an individual effect on an individual outcome. Under circumstances where staff and clients perceive their roles as, respectively, giving and receiving authoritative guidance about contraceptive methods, all clients benefit (by the criteria of subsequent contraceptive use).

Although other significant zero-order relationships with contraceptive use reported in Table 2 were overwhelmed in multivariate analysis by the influence indices, it is useful to discuss some of these relationships briefly to try to account for their disappearance in the final analysis. Beginning with the three control variables, TIME (the perception of nurses that clinic organization allows them adequate opportunity to learn about clients), BUR (number of levels of health department hierarchy), and AGE (mean age of clinic's clients), examination of the first two columns of Table 2 reveals that all three of these variables are significantly associated with one or the other of the two influence indices. In clinics where

TABLE 3—Step-wise Regression of Clinic Mean Contraceptive Use on Selected Interaction Indices and Controls

Variable Description	Contribution to Explained Variance	Standardized Coefficient (Beta)
I. Interaction Indices		
CRNTELL	.25	.29**
NPERS	.07	.26**
CTCONF	.03	−.12
CTTRUTH	.01	−.09
CLEARN	.01	.16
NTALK	.01	−.13
R^2 (subtotal)	.38	
II. Clinic Organization		
TIME	.02	.14
BUR	.004	−.06
R^2 (subtotal)	.02	
III. Clients' Mean Age	.0004	−.02
R^2 (total)	.40	

**p ≤ .01

Variable definitions:

CRNTELL	Client wants nurse to tell her birth control method to get.
NPERS	Nurses sometimes persuade clients to accept a particular method.
NTALK	Nurse wants to talk to teenagers about personal problems.
CLEARN	Client believes staff should learn about family life and personal problems.
CTCONF	Client expects to trust staff protection of visit confidentiality.
CTTRUTH	Client reports that nurses "told truth" about method effectiveness.
TIME	Clinic organization allows sufficient time and opportunity to learn about clients.
BUR	Number of levels in health department hierarchy above clinic nurse.

clients want the nurses to tell them what method to get, nurses have more time and clients are younger on the average [our data also show (column 7) that nurses have more time in clinics with younger clients]. Report by nurses that they sometimes persuade clients to accept a particular method is associated with fewer levels of hierarchy. From these data, a composite picture can be formed of the type of clinic in which authoritative guidance is the prevailing mode of nurse-client interaction: it is a clinic operated along relatively nonbureaucratic lines, where nurses have plenty of time for their clients, and where clients are relatively young. However, our multivariate analysis (Table 3) demonstrates that these characteristics are important *only* because of their association with the exercise of staff authority.

In the presentation of results, it was noted that nurses' desire to talk to clients about their personal problems was, contrary to expectations, negatively correlated with subsequent contraceptive use. Looking at the first column of Table 2, we find that this variable is also negatively correlated with clients' wish for influence. These data suggest that when clients want authoritative guidance about contraceptive methods, too much attention to their personal problems may be perceived as a distraction and may, indeed, undermine the nurse's authority. (Davis offers a similar interpretation of the absence of an anticipated association between physicians' "friendliness" and patients' subsequent compliance with the physician's advice.[29])

Among our most unexpected zero-order findings were the negative relationships obtained between both indices of trust (expected trust in visit confidentiality, and reported trust in nurses' statements about method effectiveness) and later contraceptive use. In clinics where clients are less trusting, the level of subsequent contraceptive use was higher. However, these results are not unique. In a study of compliance with a medication regimen for asthmatic children, Becker, *et al,* found that mothers' compliance was positively associated with their skepticism about medical care: "It was the compliant mother who more frequently doubted what the physician told her."[30] At the same time, compliant mothers were more dependent on professional medical care, turning quickly to the doctor for help even before their own efforts had failed to relieve their asthmatic child's symptoms. Becker and his colleagues account for their findings by suggesting that compliers "are relatively more realistic and knowledgeable about the value of medical intervention, understanding both the limitations and the worth of the physician's involvement."[30] Both these data and their interpretation are consistent with results reported in this paper.

Clinic philosophy, as reported to us by clinic nurses—and as reflected in training literature for family planning nurses and counselors[24,25,31]—is consciously directed toward fostering contraceptive clients' independence and freedom of choice in method selection, and, although advocates of this counseling orientation are not, perhaps, primarily concerned with whether or not their approach is "effective" in fostering continued contraceptive use, exhortatory support for the hypothesis that client "control" over decisions about medical treatment does promote client adherence to treatment regimens is not difficult to find in the professional literature (cf. Rodin and Janis[32]). There is, nevertheless, no hard evidence for the existence of such a relationship. Indeed, studies of compliance with medical regimens in which measures have been employed that tap the dimension of provider authoritativeness versus provider noninvolvement or permissiveness[29,33,34] uniformly report authoritativeness to be associated with higher levels of compliance. Perhaps this finding should not be seen as counter-intuitive. If the provider's authority is not accepted by the client, or if the provider acts in such a way that his or her authority is undermined, then the probability of the client's subsequently following the provider's advice, particularly when other and contrary influences intervene, may be correspondingly reduced.

This argument is particularly pertinent to the population of young contraceptive users under study. We suspect that the importance both of client receptivity to staff direction and of the employment of directive counseling strategies by clinic nurses derives at least in part from the difficulties encountered by inexperienced young women in managing the complexities of an oral contraceptive regimen and responding to both the regimen's real and rumored side effects. In clinics where a reputation for authoritative guidance has been established and is accepted by clients, such guidance will be respected initially and, perhaps more important, will again be resorted to when problems later arise.

The findings reported in this paper are important because they suggest approaches to increasing the contraceptive method compliance of teenage clients that are (unlike clients' social backgrounds or individual attitudes) under the direct control of clinic directors and clinic staff. The implications that are drawn from these findings will depend to some degree on the philosophical perspective adopted toward contraceptive use by teenage women. If the primary goal of clinic education and counseling programs is to foster independent decision making, irrespective of the decisional outcome, then perhaps no modifications in current modes of client-provider interaction are called for (although it can be argued that "independent" decision making in the case of a young teenager may simply mean decision making influenced by peers rather than professionals). On the other hand, if the goal is to foster effective contraceptive use (a goal to which the young woman herself has made at least provisional commitment by presenting herself at the family planning clinic), our results provide a clear indication of ways in which the probability of achieving that goal might be increased. In the sensitive area of contraceptive behavior, steering the wisest course between too little guidance and too much represents a major challenge to family planning professionals. Nevertheless, meeting this challenge by careful reexamination of currently accepted counseling approaches, with the objective of increasing staff willingness and ability to provide clear direction to teenage clients, holds the promise of producing substantial benefits in contraceptive compliance and the prevention of unwanted pregnancy.

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APPENDIX
Method of Selecting Interaction Items for Analyses

A series of analytic steps were employed to select the "best" set of items (statements) within each interaction dimension. In the body of the paper only the final step is shown in tabular form (Table 2). The preceding steps are briefly described here. As indicated in the text, each interaction dimension was represented by a series of statements grouped into three sets of indices (nurses' expectations, clients' expectations, and clients' reports). The initial step in the analysis subjected all statements representing each interaction dimension to factor analytic procedures. These procedures permitted selection of specific items within each dimension that best reflected nurses' expectations, clients' expectations, and clients' reports. Next, the zero-order correlations between these three reduced sets of items (one set for each interaction dimension) and clinic mean contraceptive use were examined. All items within each dimension that correlated with mean contraceptive use at a significant level of .05 or less were entered into a regression equation (a separate equation was estimated for each dimension). Finally, the two items in each equation which yielded the largest standardized regression coefficients (beta weights) were chosen to represent the interaction indices in the remaining steps of the analysis.