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Increasing the Effectiveness of Community Workers Through Training of Spouses: A Family Planning Experiment in Guatemala

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SYNOPSIS

As community-based distribution (CBD) systems for the delivery of contraceptive methods are implemented in developing countries around the world, there is growing interest in making these programs more effective. Previous research on the CBD program in Guatemala indicated the importance of the role of the spouse: those community volunteers (called "distributors") who received assistance from their spouses were more effective in selling contraceptives than those who did not. The current experiment was designed to test the effect of providing the spouses of distributors with a formal 3-day training course on family planning and contraceptives. "Effect" was operationally measured in terms of the level of contraceptive sales. To this end sales data were compared for the experimental group (33 distributors whose spouses received the training) and the control group (33 distributors whose spouses wanted to attend the training but could not because their primary occupation did not allow them to be absent) for periods of 6 months prior to and 6 months following the training. The results indicate that sales among the experimental group increased significantly, whereas no such increase was found among the controls. This suggests a strategy for increasing the effectiveness of community volunteer workers that has received relatively little attention in the literature to date.

During the 1970s the community-based distribution (CBD) of contraceptives emerged as an important alternative or supplement to the clinic-based delivery of family planning (FP) services in many developing countries. The basic objective of CBD programs is to make contraceptive services more readily accessible to the target population on a low-cost basis (*1*).

While there are variations by country, CBD programs generally operate through a network of community volunteers (male or female). These individuals, selected by the community, receive a short training course regarding FP, contraceptives, contraindications, and so forth. Subsequently they are supplied with contraceptives (pills, condoms, and vaginal spermicidals) which they sell at nominal cost or distribute free of charge from their homes or shops to members of the community. The work of the distributors is supervised periodically (often on a monthly basis) by program personnel. In most pro-

'Sales among distributors whose spouses received the training . . . increased significantly in the 6-month period following the training, whereas no such increase was found among distributors whose spouses assisted them in the sales but did not attend the training. . .'

grams the distributors receive either a small salary for their work or a percentage of the money taken from the sales of contraceptives.

As CBD programs gain increasing acceptance in many developing countries in the world, there is a growing interest, on the part of governments, FP associations, and donor agencies, in increasing the effectiveness of these programs. A number of operations research projects have been carried out in different countries to identify the most successful approaches for delivery of FP services at the community level (*2,3*).

In Guatemala, the CBD program of the Asociación ProBienestar de la Familia (APROFAM) has been in operation since 1976 and currently includes more than 500 distributors. Several different studies of the program have been carried out, and two of them pointed to a fact that has received relatively little attention in the FP literature to date: distributors who receive assistance from their spouses in the sale of contraceptives tend to be more effective than those who do not (*4,5*). A third study of FP service delivery in Guatemala also recommended the use of husband-wife teams in future FP service delivery (*6*).

The conclusions from these studies were based on correlational data, which can demonstrate an association but do not provide definitive evidence of cause and effect. However, the fact that several previous studies yielded this same conclusion prompted APROFAM to conduct a field experiment, designed to test the hypothesis that training the distributor's spouse results in increased contraceptive sales, a key objective of CBD programs. Funds for this experiment were provided by the International Committee for Applied Research in Population—Latin America (ICARPAL). If this hypothesis were supported by the findings, it would have valuable programmatic implications for the Guatemala program as well as for others.

Methodology

In the APROFAM CBD program, the distributor is the male or female volunteer who provides family planning information and contraceptive supplies at the community level. Since these persons often have little or no previous training in health or family planning, they are given a 3-day training course and periodic refresher courses to prepare them for this task.

The content of the training course includes the philosophy of family planning; basic concepts of reproductive physiology; available contraceptive methods, including contraindications and side effects; the price scale for selling the contraceptives; forms used to record sales; and other information related to the task of distribution.

In the past, only one person per distribution post (private household, small store, or other location) has been trained to be a distributor for APROFAM, although it is not uncommon to find spouses who assist the distributor, especially when he or she is away from the post. In this case, the distributor has the primary responsibility for receiving clients, explaining the different methods, selling the products, handling the bookkeeping, and referring clients to the local health centers if side effects occur. The spouse or helper would tend to receive clients as well as sell products to those who were familiar customers, but would usually defer to the primary distributor for any new cases or problems.

The goal of this study was to determine the effect of providing the spouses with the same type of training that the distributors had received. To this end, a controlled field experiment was carried out, in which sales data for an experimental and a control group were compared before and after the training of the spouses took place. Only distributors whose spouses already assisted them in the sale of contraceptives were included in the study.

The distributors in the study were selected from three different regions of the country: the Southeast (including the towns of Barberena, Santa Rosa de Lima, Asunción Mita, and Jutiapa), the Central Region (Guatemala City and Chimaltenango), and the Southwest (San Marcos and Malacatan). The selection process was as follows.

A CBD supervisor in each region and one member of APROFAM's Evaluation Unit visited all the distributors in the area known (from enrollment cards) to be married or living in consensual union. In each case where the spouse did assist the distributor, the spouse was invited to participate in a 3-day family-

planning training course. Those distributors whose spouses accepted became the experimental group for this study. Those whose spouses expressed interest but were unable to attend because their regular occupation did not permit them to be away for 3 days served as the pool from which to select the control group. (Those who were not interested at all were excluded from the study, in order to reduce "self-selection" bias.) Thus, the study design is quasi-experimental, since it was not feasible to assign distributors randomly to the two groups.

The number of spouses who were unable to attend was larger than the number that accepted. To obtain an equal number in each group, each experimental case (distributor whose spouse accepted) was later matched with a control case (distributor whose spouse was interested but unable to attend) from the same region. If the primary distributor was female, a control case was selected in which the primary distributor was also female. In addition, the control in each case was selected from the same geographic area, to ensure comparability in place of residence (and socioeconomic status to a certain degree). A total of 43 experimental and 43 control cases were thus obtained.

While 43 persons from the experimental group attended a 3-day training course carried out by APROFAM's Training Unit, only 33 are included in this analysis. Ten cases from both the experimental and the control group had to be excluded when the CBD program was suspended in certain regions, for reasons of political instability, before the experiment had run the full 6 months after the training took place. The sociodemographic characteristics of the remaining distributors are presented in the table.

Data on the level of contraceptive sales for all distributors were obtained from routinely collected service statistics for a 6-month period prior to the training and a 6-month period following it. These statistics are generally very reliable because the distributor must account to his or her supervisor for the proceeds of all sales during a monthly supervisory visit.

Since the distributors offer five different products (contraceptive pills, condoms, cream, foam, and vaginal tablets), it was necessary to convert the quantity of sales of the different products into a single figure that would allow for comparisons between the two groups before and after the training. One such measure, commonly used in the evaluation of FP programs, is couple months of protection (CMP) sold in a given month (7). For example, to calculate the protection given by a cycle of pills, it is estimated that each cycle covers 28 days, or 0.92 month ($28 \div (365 \div 12) = 0.92$). Estimates of CMP for the other methods were based on the estimated frequency of intercourse: 3 times per week, or 12 times per month. Thus, one package of three condoms would be sufficient for 1 week, or 0.25 month; the 20 applications per container of vaginal contraceptives would protect a couple for 1.67 months. Thus it was possible to combine the sales figures for all contraceptives into a single summary figure, CMP, that is the indicator of program performance used herein.

Sociodemographic characteristics of the experimental and control groups

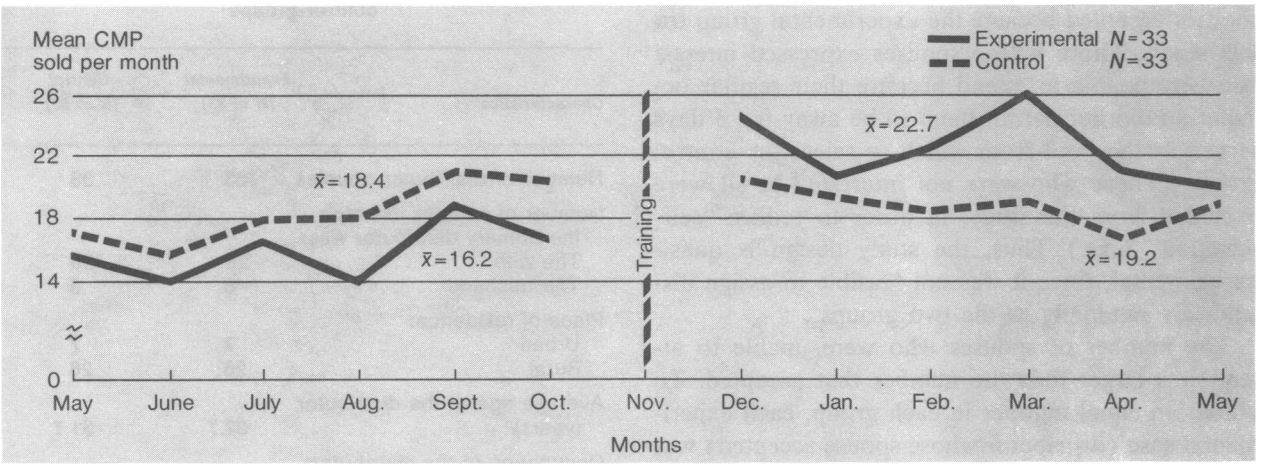
Characteristics	*Experimental (N = 33)*	*Control (N = 33)*
Number of distributor couples	33	33
Number of couples in which the primary distributor was:		
The wife	28	28
The husband	5	5
Place of residence:		
Urban	7	7
Rural	26	26
Average age of the distributor (years)	32.7	31.7
Occupation of the distributor:		
Women:		
Household duties	20	25
Vendors	5	0
Shopkeepers	3	3
Men:		
Agricultural workers	4	5
Tailor	1	0

The analysis that follows is based on a series of *t* tests. Specifically, a *t* test for independent samples was used to establish the comparability of the experimental group and the control group prior to the training. A paired *t* test served to measure change before and after the training within each group. To test whether the change found among the experimental group was greater than that for the control group, the difference in average monthly sales for each distributor before and after the training was calculated and the *t* test for independent samples was used.

Results

The findings of this study support the hypothesis that training of distributors' spouses in CBD programs results in increased contraceptive sales.

Number of couple months of protection (CMP) sold before and after training



As shown in the chart, distributors in the experimental and control groups had similar levels of sales in the 6-month period prior to the training. The monthly averages were 16.2 CMP for the experimental group and 18.4 CMP for the control group—not a statistically significant difference ($P = .60$). That is, if all sales had been for the pills (and the majority were), distributors in the experimental group would have sold an average of about 18 cycles of pills per month, compared with an average of about 20 cycles of pills per month for distributors in the control group.

Among the experimental group, the average monthly level of sales rose from 16.2 CMP before the training to 22.7 CMP in the 6-month period after the training. The difference of 6.5 CMP represents a 29 percent increase in sales for those distributors whose spouses received training and is statistically significant ($P < .001$).

Among the control group, the average monthly level of sales increased from 18.4 to 19.2 CMP. This increase of 0.8 CMP is only 4 percent higher than the pretraining level of sales and is not statistically significant ($P = .53$).

The fact that sales increased significantly for the experimental group but not for the control group was further confirmed by the t test of the average *difference* in sales, which was statistically significant ($P < .005$).

'. . . distributors who receive assistance from their spouses in the sale of contraceptives tend to be more effective than those who do not.'

Moreover, the chart suggests that the increase in sales was not a temporary phenomenon, but rather was a trend that was sustained throughout the 6-month period after the training. Although there was a drop in the final 2 months, the level of sales was still higher than it had been at any point in the 6 months before the training.

In summary, average monthly sales were similar for the two groups prior to the training. Sales among distributors whose spouses received the training (experimental group) increased significantly in the 6-month period following the training, whereas no such increase was found among distributors whose spouses assisted them in sales but did not attend the training (control group).

Discussion

The findings of this study have direct programmatic implications. By training the spouses of distributors in CBD programs to make them more effective assistants, one can expect to increase contraceptive sales. It could also be argued from an ethical standpoint that if spouses do assist in the sale of contraceptives (as has been found to occur at many of the CBD posts), it is desirable that they receive this basic training course to upgrade the quality of service they render.

While these findings suggest the benefit of training the spouses of distributors, they should not be interpreted to mean that individuals who do not have spouses should be excluded as potential distributors. Findings of a previous distributor study (*5*) showed

no significant differences in the level of contraceptive sales by marital status in either the urban or the rural program. Rather, the important variable was the *assistance* of the distributor's spouse in the sale of contraceptives, which was shown to be the single strongest correlate of contraceptive sales among distributors in the rural program. In short, the advantage came *not* from the mere existence of a spouse but rather from the fact that he or she assisted with sales. The findings presented here suggest that this advantage can be further enhanced by training of the spouse in contraceptive distribution.

One question that is not addressed in the current study is the cost effectiveness of this type of training. It would be of interest in future research to determine whether it is more cost effective to train the spouses of existing distributors or to identify, recruit, and train new distributors, thus increasing the total number of distribution posts. In addition, it would be of interest to follow distributor performance after training for a longer period, to determine whether the effects of this training are sustained beyond the 6 months studied in this experiment.

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An Example of Record Linkage Methods to Monitor Mortality and Cancer Incidence

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The staffs of the Department of Motor Vehicles, Bureau of Health Statistics, and the Cancer Registry of New York State assisted in the study by supplying data.

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SYNOPSIS

Linkage of New York State record systems was the key strategy in a restrospective cohort study with a 24–34 year followup interval. Parents of children with anencephaly or spina bifida and matched control parents were traced to determine the parents' cancer and death experience. Birth certificates for Upstate New York for 1945–55 were the source of the study groups. This report describes the methodology employed. The New York State Health Department's Cancer Registry and vital records, the State motor vehicle license files, and city and phone directories were searched for the most recent record indicating residence in Upstate New York, cancer incidence, or death.

Among the parents of the 1,152 index children were 18,571 person-years of followup for mothers and 21,675 person-years for fathers. Among the 1,152 controls, there were 19,682 person-years of followup for mothers and 22,596 person-years for fathers. Although losses were larger than the optimal, a large proportion of the maximum possible person-years were obtained, regardless of the birth year of the index child. Patterns of loss to followup were similar for cases and controls.