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This study is part of a broader project at the Population and Ecology Research Laboratory (PERL) in Nepal that examines the influence of changing social contexts on the timing of marriage, childbearing, and contraceptive use.

PERL was established in 1995 to conduct research on population, social change and the environment; to train scholars in social science research methods; and to create institutional and technical capacity for conducting social science and demographic research in Nepal.

PERL works with Kathmandu University, the Institute for Social and Environmental Research, and the University of Michigan.



## *Voluntary Associations and Fertility Limitation*

HERE WE REPORT ON A STUDY OF THE influence of participation in and exposure to voluntary associations on fertility-limiting behavior in Western Chitwan Valley, Nepal (Barber et al. 2001). The study contributes to the existing research literature in several ways. First, the empirical tests distinguish among different types of voluntary associations, including women's groups, credit groups, and other groups. Second, data on couples are used to examine the influence of both husbands' and wives' participation in voluntary associations on couples' fertility behavior. Third, we use data on the presence of voluntary associations in neighborhoods to examine whether these groups have any influence on the fertility behavior of individuals who are not direct participants in voluntary associations.

### **HYPOTHESES**

The demographic and sociological literatures have suggested multiple mechanisms through which voluntary associations might affect contraceptive behavior.

Group membership usually involves social support, such as providing monetary assistance or instrumental help in achieving some goal, offering advice or information. Group members may share information about the contraceptive options available, increasing use among those who are uninformed. They may also provide advice and support for choosing a particular method, which may increase use among women who need counsel to make a

decision. Groups – particularly credit groups, whose members have joint responsibility for paying back loans – may also influence individuals' goals and preferences. For example, voluntary associations may influence attitudes toward childbearing or contraceptive use indirectly because childbearing and contraceptive use affect the group. Existing research in Nepal suggests that peer pressure to have small families results from this joint liability, with members afraid that large families will prevent other group members from paying back their part of the loan (Axinn 1992). Credit groups may also change the value of women's time, especially when they enable women to start new businesses. Such alternatives raise the opportunity costs (and thus reduce the likelihood) of spending time rearing children. In the opposite direction, credit group participation may provide income-generating activities that increase the affordability and desirability of additional children. Finally, group membership may influence fertility when it leads to collaborative social action that increases members' access to resources, such as health clinics or schools. For example, most of the schools in the study setting were built as a direct consequence of community-based social action.

### **VOLUNTARY ASSOCIATIONS IN NEPAL**

Nepal has an abundant and increasing number of voluntary associations. These vary from small groups of women working to improve social conditions, to youth

soccer teams, to money-pooling/money-lending groups, to agricultural user groups. Voluntary associations are particularly important in rural Nepal, where individuals are unlikely to hold jobs away from home and where communication is mainly achieved via personal contact. Often, social networks are restricted to those people seen frequently, such as co-participants in voluntary associations. We examine four types of groups in this paper: women's groups, credit groups, youth groups, and agricultural groups. These group types are not mutually exclusive; many women's groups have a credit element, many agricultural groups have a credit element, and credit groups are often targeted to specific groups of people such as women or farmers.

Women's groups are, by definition, composed mainly of women. Generally speaking, women's groups are formed to improve living conditions for women and their families, and they may be categorized into four main types: credit or saving groups, labor-pooling groups, cultural groups, and social action groups. Many women's groups involve monetary contributions by members into a common account.

Similar to women's groups, credit groups encompass a wide range of objectives but by definition involve pooling money. For example, five or six work colleagues may pool a small amount of money each month, say 100 rupees each, that is then given as a monthly "loan" to one of the group members. By taking the loan, the member agrees to make his/her contribution each month for the duration of the club. During interviews in the study setting, members of these types of groups reported spending their "loan" (savings) on medical care for a sick child, a wedding party, religious ritual ceremonies, rental of a tractor, the purchase of seeds, treatment for sick livestock, and other needs.

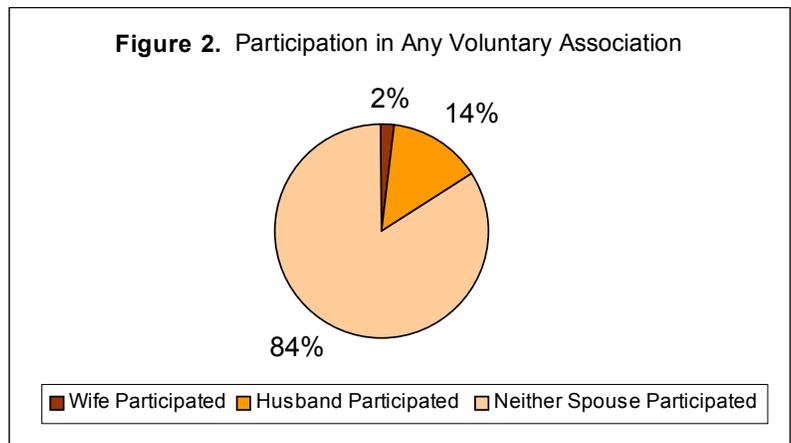
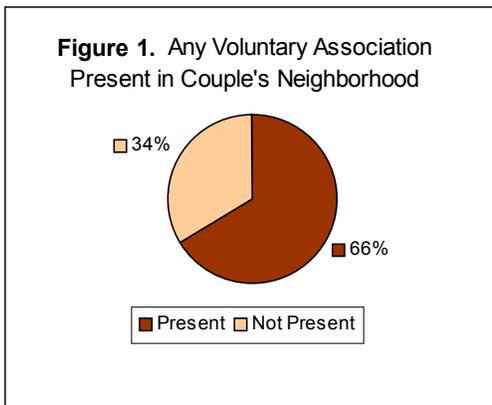
Youth groups are usually formed by young people themselves for entertainment purposes. Some groups are mixed gender; some revolve around a sports team, such as a soccer (football) club; and some have a civic component. For example, one youth group in the study setting raises money through dance performances during religious festivals, and spends that money on local improvements such as replacing burned out light bulbs in local street lamps.

Agricultural groups are comprised of farming credit groups and users' groups. Farming credit groups, such as the Small Farmers' Development Group (SFDP), provide collateral-free loans to poor farmers, allowing them to increase their income through activities such as livestock production, dairy production, grain storage, cloth weaving, mill construction, or aquaculture. A users' group cooperatively manages a common natural resource such as a forest, irrigation system, or common land. Members of these groups are individuals that live nearby and make use of the common resource.

## DATA

The data we use are from the Chitwan Valley Family Study (CVFS). In 1996, the CVFS collected information on residents of a representative sample of 171 neighborhoods in Western Chitwan Valley. Neighborhoods were defined as clusters of approximately 5 to 15 households. The CVFS then interviewed every resident between the ages of 15 and 59 in those 171 neighborhoods, and their spouses, with an overall response rate of 97 percent and 5,271 completed interviews. These individual-level survey data contain retrospective information about participation in specific voluntary associations, as well as the timing of those experiences. The data also contain detailed information about fertility and contraceptive use collected using a modified life history calendar (Axinn, Pearce, and Ghimire 1999). Information about the presence of groups in neighborhoods was collected in 1994 using the neighborhood history calendar method – an integrated application of survey, archival, and ethnographic methods (Axinn, Barber, and Ghimire 1997). Finally, we use data from unstructured, in-depth interviews in 1999 of women's groups, credit groups, and youth groups in the Chitwan Valley.

We use logistic regression to model the hazard of permanent contraceptive use, restricting analyses to couples with at least one child and in which the wife is at least 25 years old. The key measures are: 1) whether any voluntary association was present in the neighborhood in the prior year to predict the hazard of permanent contraceptive use in the current year (this information was collected for each of the prior 43 years – from 1952 through 1994); 2) whether a wife or husband participated



in a voluntary association before the first child was born; and 3) the type of voluntary association. A range of important socio-demographic and neighborhood context variables were also included in the analytical models. The full paper has a detailed description of these measures.

### FINDINGS

Figures 1 - 3 and Table 1 present findings for the key measures included in the analyses. Overall participation levels in voluntary associations are low, and men's participation in voluntary associations is more common than women's: 2 percent of women and 14 percent of men reported ever participating in a voluntary association. Participation in youth groups was the most common experience (24 percent of couples) followed by participation in agricultural and credit groups (13 percent of couples).

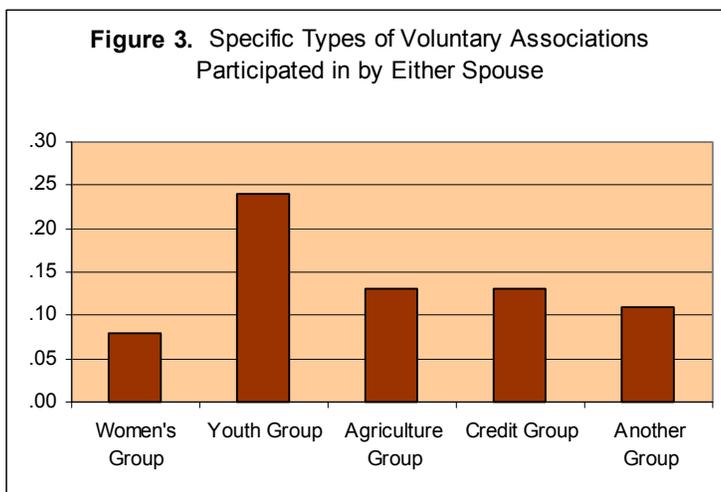
Men who participated in voluntary associations are more likely to limit their family size regardless of whether their

wives participated, and couples where either spouse participated in a voluntary association have 28 percent higher odds of adopting a permanent contraceptive method in any given year. Thus, couples' fertility-limiting behavior appears to be more strongly influenced by husbands' than by wives' participation in voluntary associations in Nepal.

Couples in neighborhoods with voluntary associations have 57 percent higher odds of permanent contraceptive use than couples living in neighborhoods without voluntary associations. A couple's participation does not explain the influence of living near a voluntary association on permanent contraceptive use. Thus, independent of whether couples actually participate in voluntary associations, living in a neighborhood with a voluntary association increases the likelihood of permanent contraceptive use.

Table 1 shows the influence of specific types of voluntary associations on permanent contraceptive use.

Although the relationships between women's groups, youth groups, and permanent contraceptive use appear particularly strong, the relationship between participation and permanent contraceptive use cannot be distinguished statistically among the group types. The direction of the influence is positive for all types (except "other" groups), although the coefficient for agricultural groups is not statistically significant and the coefficient for credit groups is only marginally statistically significant. Thus, the data suggest that all types of voluntary associations may be equally likely to influence permanent contraceptive use.



**Table 1.** Logistic Regression Estimates of the Impact of Participation in Specific Voluntary Association Types on the Hazard of Permanent Contraceptive Use (N = 1,124 couples)

	Model 1	Model 2	Model 3	Model 4	Model 5
Measures of Voluntary Associations					
Either spouse participated in a women's group	.25*				
Either spouse participated in a youth group		.38***			
Either spouse participated in an agriculture group			.07		
Either spouse participated in a credit group				.16 <sup>†</sup>	
Either spouse participated in another type of group					-.04

Note: This is an abbreviated version of Table 4 in the full paper (Barber, Pearce, Chaudhary and Gurung 2001).

† p < .10 \* p < .05 \*\* p < .01 \*\*\* p < .001 (one-tailed tests)

## CONCLUSION

Voluntary associations are strongly associated with increased levels of permanent contraceptive use. Couples where one spouse participated in voluntary associations are more likely to adopt a permanent contraceptive method. In addition, the local presence of a voluntary association increases the odds that couples will adopt a permanent contraceptive method, regardless of whether either spouse actually participates in a voluntary association. This correlation strongly suggests the influence of either social action mechanisms, whereby members work together to alter their surroundings, or diffusion mechanisms, whereby members transmit the effect to their neighbors. Finally, a wide range of voluntary associations with different characteristics are similarly associated with increased odds of permanent contraceptive use. Taken together, these findings suggest that individuals may be more likely to desire smaller families and to implement

their family-size preferences in the presence of a supportive interdependent group.

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