J. biosoc. Sci. (2003) **35**, 527–543
© 2003 Cambridge University Press Printed in the United Kingdom
DOI: 10.1017/S0021932003005923

CHANGES IN CONTRACEPTIVE USE IN VIETNAM

NGUYEN MINH THANG* AND VU THU HUONG†

**Carolina Population Centre, University of North Carolina at Chapel Hill, USA and †Population Research Consultants (POPCON), Vietnam*

Summary. This analysis used data, primarily from the 1997 Vietnamese Demographic and Health Survey (VN-DHS 1997), to determine the changes in contraceptive use in Vietnam. A descriptive analysis of individual, household and community characteristics was made to obtain a general description of contraceptive use. Multinomial logistic regression analyses were also performed on the currently married in (a) a sample of all women and (b) only those women who live in rural areas, to identify the strength of association that each variable has with the use of modern contraceptives. The use of any contraceptive method and the use of modern methods increased from 1988 to 1997. The primary contraceptive method utilized is the IUD and its use has increased substantially from 1988 to 1997. Younger women (aged 15–24) were less likely to use any contraceptive method. Women not desiring additional children were significantly more likely to use contraceptive methods than those desiring more children. Education has a clear impact on both contraceptive knowledge and use by women, with higher educated women being more likely to use a contraceptive method. Illiterate women with no formal education were significantly less likely to use modern methods of contraception. Differentials in contraceptive use exist regarding place of residence. Urban women are more likely than rural women to use contraception, but the difference is not large. Women living in mountainous areas are less likely to use contraception, compared with women living in the lowlands. Living standards, especially the availability of electricity in the community, have a large effect on the methods of contraception adopted by women. Religion is not strongly related to the contraceptive behaviour of women. There were significant differences in the use of contraceptives in communities with good quality of care, with increased contraceptive use corresponding to the increase in availability of family planning workers at communes, provision of counselling services at health facilities, and the volume of mass media family planning messages.

https://doi.org/10.1017/S0021932003005923 Published online by Cambridge University Press

Introduction

Contraceptive practices in developing countries have been influenced by the availability of contraception methods and information, as well as by a myriad of cultural, societal and economic characteristics (Askew & Khan, 1990; Chamrathrithirong, Kamnuansilpa & Knodel, 1986; Koenig *et al*., 1987; Friedman, 1990; Ntozi & Kabera, 1990). Variations in current contraceptive use have not previously been consistently correlated with family size preferences, child loss, and ethnic, religious and urban–rural differences; however, differences correlated with the age of the woman, number of living children, and woman's education have been universally observed (Vllassoff, 1990; Radloff *et al.*, l989; Moreno & Goldman, 1991; Ballweg, Pagtolun-an & Baez, 1989; DeSilva, 1991).

Population and family planning programmes have been used in Vietnam since the early 1960s; support for family planning activities has been provided from the United Nations Fund for Population (UNFPA) since 1978. Voluntary family planning to reduce the rate of population growth is deemed essential for improvements in maternal and child health, women's status and economic development (Lam, 1987; National Committee for Population and Family Planning (NCPFP), 1990; Pham Song, 1990; NCPFP, 2000).

The Vietnam National Committee for Population and Family Planning (NCPFP), ministries and the people's committees of the provinces and municipalities are charged with the responsibility of monitoring and supporting measures to control population growth. At the beginning of the programme, desired norms were set for the mother's age at first birth, total number of children and the spacing of children. Since the 1990s, the programme has focused more on reducing the number of third and subsequent births (NCPFP, 1990, 2000).

Findings from the Vietnam Demographic and Health Survey 1988 (VN-DHS 1988; NCPFP, 1990), the Intercensal Demographic Survey 1994 (ICDS 1994; General Statistical Office (GSO), 1995), and the earlier analysis of VN-DHS 1997 (NCPFP, 1999) documented that more than 94% of the women interviewed knew of at least one modern contraceptive method, but fewer than 56% had used any. In Vietnam, the then-current use of contraception was more prevalent among more highly educated, urban women over the age of 25 who already had two or more children (Nguyen Minh Thang *et al*., 1992; NCPFP, 2000).

Among modern contraceptives, the intrauterine device (IUD) has been the most universally available and most frequently used modern contraception method in Vietnam from the early days of the family planning programme. Although a strong campaign for sterilization was introduced from 1993 to 1995 and rates of female and male sterilization have doubled for the last 10 years, it has been used only to a limited extent (NCPFP, 1999).

The VN-DHS 1997 was the second survey conducted in Vietnam to provide information needed by the population and family planning policy-makers and programme administrators (NCPFP, 1999). The survey included data on population and family planning such as household characteristics, fertility, fertility regulation, fertility preference, breast-feeding, and so forth. The 1997 survey also provided the baseline for subsequent surveys to provide current population data for Vietnam and

https://doi.org/10.1017/S0021932003005923 Published online by Cambridge University Press

to study world trends in population dynamics. Concurrent with the VN-DHS 1997, the National Strategy on Population and Family Planning for 2000–2010 was issued by the government. This strategy provides both long- and short-term goals to reinforce and strengthen measures to continue reducing the fertility rate, and to ensure that adequate family planning methods are both available and utilized by the population (NCPFP, 2000).

The purpose of this analysis was to determine (a) how selected individual characteristics of the women (including age, education, religion and total number of living children), (b) certain development characteristics of the community (regional differences, availability of electricity, asset ownership, etc.), and (c) the family planning services available to the women influenced the then-current use of modern methods of contraception.

Data

The 1997 Vietnam Demographic and Health Survey (VN-DHS 1997) was used as the major source of data for this analysis; data from the Vietnam Demographic and Health Survey 1988 (VN-DHS 1988), the Intercensal Demographic Survey 1994 (ICDS 1994) and the Living Standard Survey 1997–98 (VNLSS 1998) were also used as supplemental sources. The sample data of the VN-DHS 1997 is a sub-sample of the 1996 Multi-Round Demographic Survey (1996 MRS). The MRS sample households were located in 1590 sample areas called enumeration districts (EDs), spread throughout Vietnam's 53 provinces. An average ED is composed of about 150 households. For VN-DHS 1997, a sub-sample of 205 EDs were selected, and 26 households from each urban ED and 39 households from each rural ED were chosen. The sample households were selected from a list of households compiled as part of the 1996 MRS, which occurred approximately 9 months prior to the fieldwork for VN-DHS 1997. From a total of 7150 households selected in the sample, 7031 households were occupied at the time of the interview, and 7001 interviews were successfully conducted. A total of 5664 women were successfully interviewed from the 5704 ever-married women identified in these households.

For the analysis of contraceptive prevalence, only 5331 currently married among 5664 ever-married women were included.

Questionnaires

Three types of questionnaires were used in the VN-DHS 1997 survey: (a) the Household Questionnaire, (b) the Individual Questionnaire, and (c) the Community/Health Facility Questionnaire.

The Household Questionnaire was used to enumerate all usual members of, and visitors to, a selected household, and to collect information on their age, sex, education, marital status and relationship to the head of household. The main purpose of the Household Questionnaire was to identify women eligible for the individual interview (those women aged 15–49 who had been, or currently are, married). In addition, it collected information on the characteristics of the dwelling

https://doi.org/10.1017/S0021932003005923 Published online by Cambridge University Press

unit, such as the source of water, type of toilet facilities, material used for the floor and roof, and ownership of various durable goods.

The Individual Questionnaire was used to collect information from all ever-married women aged 15–49 in a surveyed household. These women were asked questions on background characteristics (age, education, residential history, etc.), reproductive history, contraceptive knowledge and use, antenatal and delivery care, infant feeding practices, child immunization and health, fertility preferences and attitudes about family planning, husband's background characteristics, woman's work information, and knowledge of AIDS.

The Community/Health Facility Questionnaire was used to collect information on all communes, in which the interviewed women lived, and on services offered at the nearest health facilities. The questionnaire consisted of four sections. The first two sections collected information from community informants on characteristics such as the major economic activity of residents, distance to civic services, the location of the nearest sources of health care, and the availability of family planning services in the community. The last two sections collected data while the women visited the nearest commune health centre and inter-commune health centre, if such facilities were located within 30 km of a sample cluster. For each facility visited, information was collected on factors such as the type of services offered (including family planning counselling services), the type, number and training of the staff, and the equipment and medicines available at the time of the facility visit.

Methods

Analysis methods

A descriptive analysis was used to provide a general representation of contraceptive use, derived from individual and community characteristics. Regression procedures were used to identify the strength of association that each variable has on the use of modern contraceptives. The multinomial logistic regression models were estimated and compared for two groups of currently married women using contraceptives: the first included all women, both urban and rural, and the second model included women who lived in rural areas. In both models, other explanatory variables included the women's age, education, religion, number of living children, child mortality, desire for more children, type of residence, regional residence, availability of electricity in the community, possession of valuable assets, local visits of family planning workers, whether contraceptive users are told of family planning at health facilities, and whether they had received family planning messages via the mass media.

Outcome variable

The outcome variable, *current use of contraception*, refers to the use of any contraceptive method and of a modern method of contraception, such as the IUD, oral contraceptives, condom, or depot medroxyprogesterone acetate injection (DMPA), at the time of the survey. The emphasis was on the current use for

https://doi.org/10.1017/S0021932003005923 Published online by Cambridge University Press

pregnancy spacing, rather than for the termination of childbearing. Therefore, women who had been sterilized or whose partners had been sterilized were not included. The sample size for the multinomial logic regression analysis, therefore, is 4868 cases.

Independent variables

There are three groups of independent variables used in this study: (a) individual, (b) household and community, and (c) family planning.

Individual variables. The *age of the mother* was categorized as between (a) 15–24, (b) 25–29, (c) 30–34, (d) 35–39, or (e) 40–49 years. *Education* was categorized according to whether a woman (a) had no education, (b) had some primary education (grades 1–4), (c) completed primary grades (grades 5–8), (d) completed lower secondary grades (grades 9–11), or (e) completed secondary grades and above (grade 12 and any higher degree). *Religion* as a factor of contraceptive use was categorized by whether a woman (a) did not follow any religion, (b) followed the Buddhist religion, (c) followed Catholic, Protestant, Cao Dai, Hoa Hao and other religions. Since Vietnam is overwhelmingly a Buddhist country, all other religions (i.e. Catholic, Protestant, Cao Dai, Hoa Hao, and others) are a very small proportion in population distribution and can be combined into one group. The *number of living children* at the time of the survey was categorized by whether a woman had (a) no children, (b) one or two children, or (c) more than two children. The *child mortality* variable was categorized by whether a woman had (a) at least one child who had died and (b) no children who had died. The desire for more children was used to determine differences between women who (a) desired more children and (b) those who did not desire more children.

Household and community variables

The impact of social and economic development on contraceptive use was examined through the differences in (a) geography, (b) socioeconomic situation of the community, and (c) household living conditions.

Regions. Before 1975, regional differentials between the north and south of Vietnam were clearly observed because of the distinct political, social and economic systems of the two regions. Due to the heavy destructive bombing by the United States in the northern part of the country, living conditions were very difficult everywhere in the Northern Upland, Red River Delta and North Central regions. The south of Vietnam was a little different. Because of the tremendous support of USAID, Saigon and other cities in the south were busier, with much trade and consumption, despite there not being a large industrial base. In contrast, the rural areas – especially the Central Coast, Central Highland and Mekong River Delta – were very poor. In terms of population and family planning activities, these have been concentrated in the North since the 1960s. After reunification in 1975, and especially from 1986 – after the government launched a reformed policy known as *Doi Moi* – the living standard of people all over the country has noticeably improved. The percentage of

https://doi.org/10.1017/S0021932003005923 Published online by Cambridge University Press

the population that is poor has fallen, from 75% in the mid-1980s to 37% in 1998 (Bhushan *et al.*, 2001). Despite these impressive achievements, the disturbing fact is that the gains have not been equally shared. The Red River Delta and South-east have become the most developed regions of the country. North Central and Mekong River Delta are about average, while Northern Upland and Central Highland, which are located in mountainous areas, and Central Coast region are considered the poorest areas. Fertility also differs from region to region: 1·87 in the South-east vs 4·28 children per woman in Central Highland (GSO, 2000). The government poverty reduction, social development and health services programmes, are, therefore, focused on these regions. Based on differences in geography and socioeconomic development, the government of Vietnam has divided the country into seven regions: (a) Northern Uplands, (b) Red River Delta (including Hanoi and Hai Phong City), (c) North Central, (d) Central Coast, (e) Central Highlands, (f) South-east (including Ho Chi Minh City), and (g) the Mekong River Delta. The above-listed order is geographically arranged: north to south and east to west. Given the fact that socioeconomic conditions and fertility vary greatly from region to region, and the goals and investment for population and family planning activities are differently allocated by the government for each region (NCPFP, 2000), in this study, current regional differentials in the use of contraceptive are expected.

Type of residence. The differences between rural and urban areas were examined by (a) whether the woman lived in an urban area (b) whether she lived in a rural area.

Availability of electricity. The availability of electricity in the community was examined since it is considered important as it can influence living conditions and can also facilitate education and communication means for family planning programmes.

Assets. These are treated in this study as variables that reflect the impact of household living conditions on contraceptive use. Since household income was not included in the VN-DHS 1997 survey, asset variables were used as a proxy of household income. These asset variables were categorized into two groups: (a) women who reported that her household has at least two of following: radio, television, refrigerator, bicycle, motorbike, car, flush toilet or a house with a concrete/tile/fibro/asbestos roof and (b) women whose households have none or only one of these assets.

Family planning variables

Three variables were examined as a proxy for quality of service: (a) whether or not a *family planning worker visited a locality*, (b) whether *counselling services were provided at family planning centres* (when a woman came to visit) within the last 12 months, and (c) whether a woman *received family planning messages* from at least two types of mass media in the last month, i.e. radio, television, newspaper, poster or brochures. Although quality of service was not directly included in the survey, information and counselling – the major aspects of quality of services – can be examined through these three variables.

https://doi.org/10.1017/S0021932003005923 Published online by Cambridge University Press

Table 1. Percentage of women who have ever used and currently use contraceptive methods among all ever-married and currently married women aged 15–49 in 1988, 1994 and 1997

	Ever-married women who have ever used (%)			Currently married women currently using (%)		
Method	1988	1994	1997	1988	1994	1997
Any modern method	**47**	**56·9**	**68·3**	**37·7**	**43·8**	**55·8**
IUD	40·3	48·4	56	33·1	33·3	38·5
Condom	4·2	8·5	12·3	1·2	4	5·9
Pill	3·1	6·1	9·7	0·4	2·1	4·3
Injection	0	0·7	0·9	0	0·2	0·2
Female sterilization	2·4	3·8	6·1	2·7	3·9	6·3
Male sterilization	0·5	0·2	0·5	0·3	0·2	0·5
Other	0·7	0·6	0·5	0·4	0·2	0·3
Any traditional method	**34·6**	**46·5**	**41·8**	**15·5**	**21·2**	**19·2**
Withdrawal	17·7	25·5	24·9	7·4	11·4	11·9
Periodic abstinence	16·9	21	16·9	8·1	9·8	7·3
Any method	**59·9**	**72·8**	**81·6**	**53·2**	**65**	**75·0**

Sources: VN-DHS 1998, ICDS 1994 and VN-DHS 1997.

Results

Descriptive analysis

Contraceptive methods. Table 1 shows the trends and changes of contraceptive use in Vietnam from 1988 to 1997. The data presented define the proportion of ever-married women who had used each of the contraceptive methods they knew about and the proportion of currently married women who were using the methods at the time of the VN-DHS 1988, ICDS 1994 and VN-DHS 1997 surveys.

Overall, the majority of ever- and currently married women in Vietnam use contraceptives, and this use has increased in the period between 1988 and 1997. Almost 60% of ever-married women reported having practised some form of contraception in 1988; this rose to 73% by 1994 and to 82% by 1997. Current contraceptive use among currently married women increased from 53% in 1988, to 65% in 1994, and to 75% in 1997. Interestingly, the increase in the current use of contraceptive methods between 1994 and 1997 was only ten percentage points, whilst the proportion of current users of modern contraceptive methods for this period increased by twelve percentage points. This means, therefore, that the proportion of users who employ traditional methods decreased between 1994 and 1997.

Two features of the mix of contraceptive methods in Vietnam that stand out are (a) the dominance of the IUD among modern methods and (b) the relatively high share of overall use that is attributable to either periodic abstinence or withdrawal. By far, the most commonly used method reported in each of the 1988, 1994 and 1997

https://doi.org/10.1017/S0021932003005923 Published online by Cambridge University Press

surveys was the IUD. By 1997, more than half (56%) of Vietnamese ever-married women of reproductive age reported having used an IUD at some time. Although there was an approximately eight-percentage-point increase between the 1994 and 1997 surveys in the proportion who indicated they had ever used the IUD, the current levels of use increased more slowly, by only five percentage points. Virtually all twelve-percentage-point increase in the use of modern methods is the result of an increase in methods other than the IUD – particularly the pill, condoms and female sterilization. Nevertheless, the IUD still accounted for 68% of the current modern method use in 1997. (This was a decrease from 76% in 1994 and 88% in 1988.)

The practice of periodic abstinence and withdrawal was widespread by 1997; 7% of currently married women reported that they practised periodic abstinence and 12% reported using withdrawal as their method.

Table 1 shows that, despite the trend, the current use of oral contraceptives is still very low; the pill is used by only 4% of currently married women. Similarly, the use of condoms and female sterilization has increased, but remains at the low level of 6%. Among the remaining modern methods, the current use of injection and male sterilization are negligible.

The extensive practice of using traditional methods suggests that although there is a considerable demand for family planning services among the Vietnamese population, this demand has not been fully met by the current family planning programme.

Individual characteristics. The data in Table 2 show the relationship between a woman's age and her use of contraceptives or contraceptive prevalence rate (CPR). Older women are more likely to use a contraceptive method. The highest prevalence (for any method) is among women aged between 35 and 39 (88·0%), with lower prevalent use by women between the ages of 30 and 34 (84·5%). However, with 27·6% of women using traditional methods, the group of women between the ages of 35 and 39 has the highest rate of traditional method use in the contraceptive mix. The use of modern methods by younger age groups constitutes a large amount of overall use. For the first three age groups (15–24, 25–29, 30–34), the use of traditional methods as a percentage of overall use is only 21·2–22·4%, while for the last two age groups (35–39 and 40–49), the rate is 29·4–31·3%.

The education level of women has a relationship with contraceptive use. Typically, women with less education are less likely to use family planning than are women with higher levels of education. Only 52·9% of women with no education were current users of family planning methods compared with 82·2% of women with the highest levels of education (completed high school or above). The data show the same trend for the use of modern methods, but the differences are smaller (42·1% compared with 62·3%). This is due to a relatively high proportion of more educated women using traditional methods (10·7% compared with 22·4%). More highly educated women are likely to have access to information that allows them to use traditional methods, such as periodic abstinence, successfully.

Even though there is not a large difference in the use of any contraceptive method among women affiliated with Buddhist or Catholic/other religions, and those not affiliated with any religion, differentials in modern contraceptive use by religion are as expected. Women who reported that they followed Buddhist or Catholic/other

https://doi.org/10.1017/S0021932003005923 Published online by Cambridge University Press

Table 2. Distribution of currently married women, by contraceptive method currently used, according to selected individual background characteristics

	Not using any method	Any method (CPR)	Modern methods	Traditional methods	Traditional methods (% of CPR)	*N*
Age						
15–24	50·5	49·5	39·0	10·5	21·2	843
25–29	26·6	73·4	57·0	16·5	22·4	986
30–34	15·5	84·5	66·0	18·5	21·9	1151
35–39	12·0	88·0	60·4	27·6	31·3	1066
40–49	25·1	74·9	52·9	22·0	29·4	1285
Education level						
No education	47·1	52·9	42·1	10·7	20·3	254
Lower primary	31·3	68·7	50·5	18·3	26·6	987
Completed primary	27·8	72·2	52·1	20·1	27·8	1573
Completed secondary	17·9	82·1	62·3	19·8	24·1	1761
Completed high school and above	17·8	82·2	59·8	22·4	27·3	756
Religion						
None	23·9	76·1	57·6	18·5	24·4	4046
Buddhist	27·6	72·4	49·2	23·2	32·0	821
Catholic and others	26·5	73·5	51·9	21·6	29·3	464
Number of living children						
Two and below	30·4	69·6	50·8	18·8	27·0	2869
Three and above	18·1	81·9	61·6	20·4	24·9	2462
Child mortality						
At least 1 child died	28·1	71·9	55·5	16·5	22·9	686
No child died	24·2	75·8	55·8	20·0	26·3	4645
Birth preference						
Want to have another child	41·8	58·2	42·3	15·9	27·4	1354
Want no more children	18·9	81·1	60·4	20·7	25·6	3977

religions have, respectively, a 8·4 and 5·7 percentage point lower use of modern methods than those with no religious affiliation (49·2% and 51·9% vs 57·6%).

Women who have three or more children are more than ten percentage points higher in both using any contraceptive or using modern contraceptive methods than women with fewer children. There are some differentials in using any contraceptive by child mortality. Women who have at least one child that died are about four percentage points less likely to use any contraceptive than women with no child that died. There is virtually no difference in the use of modern contraceptives among these two group of women. Most women who want to conceive do not want to use any method of contraception, and their usage rate of contraceptives is 58·2%, while the

https://doi.org/10.1017/S0021932003005923 Published online by Cambridge University Press

Table 3. Distribution of currently married women, by contraceptive method currently used, according to selected community/household background characteristics

	Not using any method	Any method (CPR)	Modern methods	Traditional methods	Traditional methods (% of CPR)	*N*
Type of residence						
Urban	20·7	79·3	54·0	25·3	32·0	995
Rural	25·6	74·4	56·2	18·2	24·4	4336
Region						
Northern Uplands	29·0	71·0	51·7	19·3	27·2	1108
Red River Delta	16·7	83·3	66·3	17·0	20·4	1195
North Central	19·9	80·1	63·4	16·7	20·9	645
Central Coast	29·9	70·1	54·4	15·6	22·3	556
Central Highlands	36·4	63·6	43·8	19·8	31·1	170
South-east	25·4	74·6	52·9	21·7	29·1	641
Mekong River Delta	27·2	72·8	47·6	25·2	34·7	1016
Access to electricity						
Yes	22·2	77·8	58·4	19·4	25·0	4155
No	33·6	66·4	46·6	19·8	29·9	1176
Assets						
Has 3 or more valuable assets	21·3	78·7	57·1	21·6	27·5	3222
Has fewer than 3 valuable assets	29·9	70·1	53·8	16·3	23·3	2109

level of contraceptive use among women who do not want to give birth to another child is 81·1%.

Household/community characteristics. As shown in Table 3, the CPR is higher among urban than rural women. The contraceptive prevalence in urban areas is 79·3%, five percentage points higher than in rural areas (74·4%). However, a substantial share of the urban-to-rural difference in prevalence is accounted for by the higher use by urban women of non-modern methods.

Substantial regional variation in current contraceptive use is evident. Overall, contraceptive prevalence ranges from 63·6% of women in the Central Highlands to 83·3% of currently married women in the Red River Delta region. The same two regions mark the extremes of regional differences in modern method use; the level in the Red River Delta is slightly more than one and half times that of the Central Highlands (66·3% and 43·8%, respectively). In every region, the use of traditional methods constitutes a substantial amount (20·4–34·7%) of any use, although the use of such methods is noticeably higher in the three southernmost regions (Central Highlands, South-east and Mekong River Delta) than in the central and northern areas. South-east, which includes Ho Chi Minh City, does not show a high prevalence

https://doi.org/10.1017/S0021932003005923 Published online by Cambridge University Press

Table 4. Distribution of currently married women, by contraceptive method currently used, according to selected family planning background characteristics

	Not using any method	Any method (CPR)	Modern methods	Traditional methods	Traditional methods (% of CPR)	*N*
FP worker visits locality						
Yes	18·8	81·2	59·2	22·1	27·2	1381
No	26·8	73·2	54·6	18·6	25·4	3950
At health facility, told of FP*						
Yes	23·5	76·5	60·8	15·7	20·5	1213
No	34·4	65·6	46·8	18·7	28·6	672
Received FP messages on mass media						
At least two sources	20·9	79·1	58·6	20·5	26·0	4022
No message or only from one source	36·5	63·5	47·1	16·4	25·8	1309

*For only 1885 women who visited a family planning centre during the last 12 months.

in either any method or modern contraceptive use, as expected. Distinctly lower levels of modern method use (47·6%) and higher levels of traditional method use (25·2%) characterize the Mekong River Delta region. The fact that family planning programmes existed in the north earlier than in the south (started in the early 1960s, about 15–20 years earlier) might be a contributing factor to this situation.

Levels of contraceptive use by other socioeconomic characteristics are also presented in Table 3. An association between contraceptive use, access to electricity and household asset ownership is revealed by the data. Women who live in a community with electricity or in a household with more than three valuable assets are more likely to use contraceptive methods. This indicates that development programmes and poverty reduction might affect the outcome of national family planning programmes.

Family planning characteristics. VN-DHS 1997 also studied the contraceptive behaviour of women according to their family planning programme activities. Data in Table 4 show that family planning activities have a marked effect on contraceptive practices. For instance, the proportion of contraceptive use in locations where family planning workers had visited is higher than in places without visits (81·2% vs 73·2%). The quality of service that can be observed via family planning counselling shows an important role in promoting contraceptive use, especially modern contraceptives. Women who had visited a family planning centre in the previous 12 months and were told about family planning report about ten percentage points higher in the use of any

https://doi.org/10.1017/S0021932003005923 Published online by Cambridge University Press

Table 5. Multinomial logistic regression model (exp(*B*)) of the current use of any and modern methods of contraception by currently married women, aged 15–49

	Whole country (*N* = 4868)		Rural area (*N* = 3945)	
	Not using any method	Only modern methods	Not using any method	Only modern methods
Age				
15–24	2·8630***	2·5923***	2·1499**	2·1687***
25–29	1·2732	2·2396***	1·1493	2·2243***
30–34	0·7856	1·9163***	0·6987	1·7654***
35–39	0·4224***	1·0800	0·4160***	1·0263
Education level				
No education	3·0035***	1·3493	2·9169**	1·3676
Lower primary	1·7789**	1·0802	1·8390*	1·1134
Completed primary	1·2647	0·9403	1·1174	0·8470
Completed secondary	0·9116	0·9798	0·8538	0·9287
Religion				
Buddhist	1·0267	0·8122	0·9374	0·7520
Catholic and others	0·7938	0·6934*	0·8143	0·7012
Number of living children				
Two and below	1·1272	0·7734*	1·2669	0·8215
Child mortality				
At least 1 child died	1·6117***	1·2296	1·6975**	1·3420
Birth preference				
Want to have another child	1·8851***	0·8742	2·1985***	0·9247
Type of residence				
Urban	0·8079	0·8974	NA	NA
Region				
Red River Delta	0·9346	1·7398***	0·8671	1·8016***
North Central	0·8636	1·3997*	0·7986	1·3677
Central Coast	1·1768	1·4305	1·1227	1·3650
Central Highlands	1·0417	0·9598	1·1580	1·2075
South-east	1·0395	1·1072	0·6617	0·8548
Mekong River Delta	0·6297**	0·8624	0·5596**	0·7876
Access to electricity				
Yes	1·0511	1·4474**	1·1043	1·4924**
Assets				
Has 3 or more valuable assets	0·8025	0·7475*	0·7441*	0·7039**
FP worker visits locality				
Yes	0·6875**	0·9158	0·6215***	0·8830

https://doi.org/10.1017/S0021932003005923 Published online by Cambridge University Press

Table 5. *Continued*

	Whole country ($N=4868$)		Rural area ($N=3945$)	
	Not using any method	Only modern methods	Not using any method	Only modern methods
At health facility, told of FP				
Yes	0·5542**	1·4939***	0·7634***	1·6799***
Received FP messages				
Yes	0·6470**	0·9976	0·6364***	0·9741

*$p<0·01$; **$p<0·001$; ***$p<0·0001$.
Reference groups: Age 40–49, Completed high school and above, No religion, Have 3 children and above, Has no child died, Want no more children, Rural areas, Mekong River Delta region, Have no electricity, Has fewer than 3 valuable assets, FP workers had not visited locality in last 12 months, Women not visited FP facilities and have no FP counselling, and received no/little FP messages.

contraceptive method than those who made no visits; the outcome is even higher (fourteen percentage points) for modern contraceptive use. Similarly, messages on family planning from mass media are also very important to promote contraceptive use (increased any use by sixteen percentage points).

Regression analysis

As mentioned earlier, two multinomial logistic regression procedures were used to identify the strength of association that each variable has on currently married women using any contraceptives and modern contraceptives. The first included all currently married women (the first two columns of Table 5); and the second model was applied only to currently married women who live in rural areas (the last two columns of Table 5).

Currently married women in the entire country. Similar to the descriptive analysis, the logistic models show significant differences in non-use of any contraceptive between women aged 15–24 and 25–29. The younger women are less likely to use any contraceptive method. However, the logistic models also show significant differences in the use of modern contraceptives between women aged 15–24 and 25–29. The level of modern contraceptive use among women over age 35 is the lowest of any age group. This finding suggests that, at this age, some women might have shifted to traditional contraceptive methods as they approach menopause, and other women may have reached menopause, and therefore do not feel they need to use contraception.

Education, especially low levels of education, has a strong impact on the non-use of any contraceptive (odds ratio of 3·0 for no education vs 1·7, 1·2 and 0·9 for those

https://doi.org/10.1017/S0021932003005923 Published online by Cambridge University Press

groups with some level of education). However, women with a lower education are also more likely to use a modern contraceptive, when they decide to use a method. The use of modern contraceptives tended to decrease as education level increased; however, the differences are not statistically significant.

Religion was found to have a larger influence on modern contraceptive use than it had on using any (vs none) contraceptive method. Some religions oppose the use of contraceptives to control reproduction: for instance, IUD use is not accepted widely among Catholic and related religions. This analysis found that those women who have a Catholic or other religious affiliation are less likely to use modern contraceptives than women who have no religious affiliation; this difference is just about statistically significant. With its odd ratio of 1·0, the Buddhist religion has no influence on the use of any contraceptive method. However, those with Buddhist affiliation are also less likely to use modern contraceptives, but this difference is not statistically significant. In fact, Buddhism has no injunction against the use of fertility regulation other than abortion.

As expected, child mortality and birth preference have a significant influence on contraceptive use for any methods. Women who have at least one child that had died or want to have another child are more likely not to use any method.

Table 5 also shows that the current number of living children has only a small impact on the use of contraceptives. Contraceptive use increases as the number of living children increases. Modern contraceptive use is more influenced by the number living children; however, this coefficient is only just statistically significant.

The model also shows several statistically significant relationships between the use of modern contraceptives and a number of other variables. These include type of residence, regions and family planning efforts.

The difference between urban and rural areas was examined and determined not to be statistically significant. There are several differences in contraceptive use between regions. Interestingly, the model shows a significant influence of residence in the Mekong River Delta on the use of any contraceptive method. Two regions – the Red River Delta and the North Central – have statistically significant levels of modern contraceptive use.

The availability of electricity in a community also has a positive impact, especially on modern contraceptive use. Women living in a community with electricity are more likely to use modern contraceptives than are women living in a community that does not have electricity. The possession of valuable assets shows a positive association with the use of any method (negative association with non-use) but a negative association (odds ratio less than one) with the use of modern contraceptives.

Family planning efforts have a significant impact on the use of any contraceptive and modern contraceptive use. Women visited by family planning (FP) motivators are more likely to use a contraceptive, but only modern contraceptives. The tendency is about the same for the variable 'received family planning messages'. However, in a community where counselling is available at a family planning centre, the situation is completely different. The availability of counselling services improves both the use of any method and modern contraceptives. This is strong evidence that actively providing information on contraception is a decisive factor in contraceptive acceptance behaviour.

https://doi.org/10.1017/S0021932003005923 Published online by Cambridge University Press

Currently married women in rural areas. The last two columns of Table 5 present the regression model data for women living in rural areas. In general, the tendency is not changed. However, there are some specific differences between currently married women in urban and rural areas that should be discussed. First, young women in rural areas are more likely not to use a contraceptive method. Second, even though the women in the Red River Delta significantly prefer modern contraceptive methods, rural women in this region are significantly less likely to use them. Third, family planning counselling services at health facilities have more impact on contraceptive use in rural areas. Other variables – the availability of electricity and the possession of valuable assets – do not result in any statistically significant differences in the use of contraception between currently married women in rural and urban areas.

Discussion

There has been a substantial increase in the awareness and the extent of use of contraceptive methods, especially the pill, condom and sterilization, among Vietnamese women from 1988 to 1997. These changes provide evidence that the population and family planning programme has made progress in achieving the goals set by the government.

One of the features of the mix of contraceptive methods in Vietnam is the dominance of the IUD among modern methods (Table 1). The practice of traditional methods – periodic abstinence and withdrawal – is also widespread in Vietnam. The high level of use of these less effective methods of contraception might suggest that there is still a considerable demand for family planning services.

Women younger than 30 years are more likely not to use a contraceptive method. However, they significantly prefer modern methods, once they decide to use a method. The most striking difference in the prevalence of contraceptive use was between women who had no formal education (low use rates) and those who had a primary, or higher level, of education (high use rates). The fact that the majority of women in Vietnam have at least a primary education may, therefore, indicate support for family planning efforts. The almost universal literacy rate among women makes it more likely that women can benefit from health education materials discussing the benefits of family planning (to space pregnancies as well as the economic benefits of smaller families).

In general, a religious following is significantly related to the contraceptive behaviour of women or to the use of any method. Therefore, both information and family planning services to promote modern contraceptives should be strengthened in communities where a large number of women with religious affiliation – especially Catholic and related religions – live.

Living standards have only a limited effect on the adoption of contraceptive methods. In a country where the diffusion of contraceptive use arguably plays an important role, and where strong government influence plays a significant role in bringing about the rapid pace of fertility decline, socioeconomic development may became a lesser determinant. Low modern contraceptive prevalences among women

https://doi.org/10.1017/S0021932003005923 Published online by Cambridge University Press

with a high education, living in an urban area, and who possess valuable assets, might be evidence of this condition in Vietnam.

Family planning efforts have a significant influence on contraceptive use. However, the influence of family planning counselling over the existence of family planning workers in a community, shows the importance of improving the quality of care. The comprehensive combination of the three family planning effort variables (visits, told about family planning, and mass media messages) clearly shows that even when family planning workers visited communities and family planning messages were carried on the mass media, it only provided general information of the usage of family planning programmes. More direct counselling about family planning is needed in communities to provide enough knowledge of each contraceptive method for women to make a free choice; this will provide a stable base to promote the use of modern methods.

The significantly higher contraceptive use of women from the Red River Delta and North Central areas compared with women in the highlands and most-southern regions suggests some variation among geographic area: lowland and mountainous areas as well as north and south. An adequate investment to strengthen reproductive health care for remote and poor areas should be the focus of the government.

Although rural women are less likely to use contraception compared with urban women, the difference is not significant. The difference between rural and urban contraceptive use significantly occurs between women of different age groups, between a few regions of the north, and in the variables of receiving counselling services. In addition, an analysis of the fertility transition in Vietnam showed that the total fertility rate of the rural population is fairly high (fertility rate difference of one) compared with that of the urban population (Nguyen Minh Thang *et al*., 1999). Thus, the inconsistency in the trend of differentials between urban and rural women on contraceptive use and fertility suggested that, in rural areas, even though the number of women who were currently using contraception was as high as the national average, fertility was not reduced accordingly. This, then, raises the question: If modern contraceptive prevalence is lower in urban areas, why is its fertility not high accordingly? Clearly, abortion may play a significant part in this difference. However, even though the ICDS 1994 agrees with this conclusion – the general abortion rate in the 1994 survey is 19·6 and 14·4 per thousand, in urban and rural areas respectively – the VN-DHS 1997 does not agree (Nguyen Minh Thang *et al*., 1999). While the bias of data collection for both surveys may be examined further, the findings clearly emphasize the role of the quality of family planning services in Vietnam, especially when the country reaches a high level of contraceptive prevalence. Quality of services, and the depth of effort of family planning programmes, such as providing adequate information to the users, should be taken into account.

References

Askew, I. & Khan, A. (1990) Community participation in national family planning programs: some organisational issues. *Stud. Fam. Plann.* **21**(3), 127–142.

Ballweg, J. A., Pagtolun-an, I. G. & Baez, L. A. (1989) A field study in the Dominican Republic: fertility behaviour response to child loss. *Int. J. contemp. Sociol.* **26**(l–2), 107–122.

https://doi.org/10.1017/S0021932003005923 Published online by Cambridge University Press

Bhushan, I., Bloom, E., Nguyen Minh Thang & Nguyen Hai Huu (2001) *Human Capital for the Poor in Vietnam: Situation and Policy Options*. Labor Publishing House, Hanoi.

Chamrathrithirong, A., Kamnuansilpa, P. & Knodel, J. (1986) Contraceptive practice and fertility in Thailand: results of the Third Contraceptive Prevalence Survey. *Stud. Fam. Plann.* **17**(6), 278–287.

DeSilva, W. I. (1991) Consistency between reproductive preferences and behaviour: the Sri Lankan experience. *Stud. Fam. Plann.* **22**(3), 188–197.

Friedman, R. (1990) Family planning programs in the third world. *Ann. Am. Acad. polit. social Sci.* **510**, 33–43.

Koenig, M. A., Phillips, J. F., Simmons, R. S. & Khan, M. A. (1987) Trends in family size preferences and contraceptive use in Matlab, Bangladesh. *Stud. Fam. Plann.* **18**(3), 117–127.

Lam, T. L. (1987) Family planning in Vietnam. *Population* **42**(2), 321–336.

Moreno, L. & Goldman, N. (1991) Contraceptive failure rates in developing countries: evidence from the demographic and health surveys. *Int. Fam. Plann. Perspect.* **17**(2), 44–49.

General Statistical Office (GSO) (1995) *Major Findings, Vietnam's Intercensal Demographic Survey 1994*. Statistical Publishing House, Hanoi.

General Statistical Office (GSO) (2000) *Vietnam Living Standard Survey, 1997–1998*. Statistical Publishing House, Hanoi.

National Committee for Population and Family Planning (NCPFP) (1990) *Vietnam Demographic and Health Survey, 1988*. Hanoi.

National Committee for Population and Family Planning (NCPFP) (1999) *Demographic and Health Survey 1997*. Statistical Publishing House, Hanoi.

National Committee for Population and Family Planning (NCPFP) (2000) *Population and Family Planning Strategy 2000–2010*. Hanoi.

Nguyen Minh Thang, Dang Nguyen Anh, Nguyen Van Phai, Nguyen Dinh Loan & Nguyen Quoc Anh (1999) *Demographic and Health Survey 1997: In-depth Analysis for Population and Family Health Baseline Values*. Statistical Publishing House, Hanoi.

Nguyen Minh Thang, Swenson, I. E., Vu Duy Man & Phan Trinh (1992) Contraceptive use in Vietnam: the effect of individual and community characteristics. *Contraception* **45**, 409–427.

Ntozi, J. & Kabera, J. B. (1990) Family planning in rural Uganda: knowledge and use of modern and traditional methods in Ankole. *Stud. Fam. Plann.* **27**(2), 104–109.

Pham Song (1990) Vietnam's population and family planning program in country studies on strategic management in population programs. *Int. Council Management Popul Prog.* **8**, 128–132.

Radloff, S. R., Seligman, B. H., Seltzer, J. R. & Corneilius, R. N. (1989) Reproductive risks and intentions in six countries in sub-Saharan Africa. *Int. Fam. Plann. Perspect.* **15**(4), 136–143.

Vlassoff, C. (1990) Fertility intentions and subsequent behavior: A longitudinal study in rural India. *Stud. Fam. Plann.* **21**(4), 216–225.

https://doi.org/10.1017/S0021932003005923 Published online by Cambridge University Press