UTILIZATION OF REPRODUCTIVE HEALTH SERVICES IN A MOUNTAINOUS AREA IN VIETNAM

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Abstract. This study uses data from two surveys performed in 1991 and 1994 in a mountainous district of northern Vietnam. The aim was to describe the utilization of family planning, antenatal care, delivery and immunization services during a period of rapid structural change in the health services in general and implementation of a primary health care project in the study area. This project was aimed at increasing access to health services and improving the quality of primary health care services. Factors influencing the utilization of reproductive health services were analyzed. The contraceptive prevalence among women aged 15-49 increased significantly from 48% in 1991 to 60% in 1994. The most commonly used contraceptive method was intra-uterine devices. The BCG coverage among children under five years of age increased from 36 to 70%. The proportion of pregnant women receiving three antenatal check-ups, as recommended by the health authorities was low and increased slightly from 15% in 1991 to 20% in 1994. About one third of the pregnant women were delivered in health care institutions during this period. The utilization of family planning, antenatal care and delivery services varied with ethnicity and was positively related to the mother's educational level both in 1991 and 1994. There is a need to strengthen the reproductive health services, especially antenatal care and delivery services, in terms of improving the quality of care and accessibility to women. Efforts should be made to reach women with a low education level as well as those belonging to ethnic minorities.

INTRODUCTION

The health care system in Vietnam was established in the early 1960s providing services from the central to the grassroots level. In order to strengthen equality in health and health care, the government introduced a health care strategy that emphasized preventive services and community-based health delivery systems. The basic health service unit at the grassroots level is the Commune Health Station (CHS), which has the main responsibility for all primary health care activities with special emphasis on maternal and child health in urban, rural and mountainous areas. A CHS should be staffed by three health workers (HWs), one assistant doctor, one nurse and one midwife (MOH, 1994).

A family planning program was launched in 1960 in order to reduce the population growth rate. The growth rate was 3.2% in 1970 and 2.1% in 1989 (General Statistics Office, 1991). Facing heavy population pressure and limited financial resources, the government introduced a population policy in 1988, according to which each couple should only be allowed a maximum of two children. The health protection law approved by Parliament stipulated that both men and women are responsible for family planning. In fact, almost all information on family planning has been directed towards women, and consequently they have carried virtually all responsibility for it (Allman *et al*, 1991; UNICEF, 1994). Although the family planning policy was strictly enforced in the whole country, contraceptive methods such as pills, condoms implants were not widely provided.

The maternal and child health and family planning programs were reinforced from 1985 aiming at providing women at least three antenatal check-ups as well as two anti-tetanus vaccinations during their pregnancies. The program also included immunizations against six infectious diseases for children

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(MOH, 1990). In order to meet these targets, considerable efforts were made to provide training for health workers and to supply equipment, vaccines and contraceptive methods. The mass organizations such as the youth and the women's union and others were actively involved in promoting these programs (MOH, 1990; UNICEF, 1994).

In 1986, Vietnam initiated a change to an open market economy, which also led to changes in the health care system. Health care fees were introduced in the whole country except in very remote areas, and private pharmacies and clinics were gradually established. Some observers have reported that while urban health services have been improved, the number of health workers as well the quality of care in rural and remote areas has been reduced (Valdelin *et al*, 1992). These decreases in the quantity of health services and the quality of care may affect the utilization of health services. Statistical data from the Ministry of Health indicate that annual contacts with health services amounted to 0.3-0.5 per capita in the rural area (MOH, 1994). In another study, we have reported that there was a low attendance at antenatal and delivery care in the Red River Delta (Toan *et al*, 1996).

The Phu Luong district (population 122,000 in 1991) is a mountainous region in northern Vietnam. The inhabitants belong to several ethnic minority groups. The distance from the Vietnamese capital, Hanoi, to the district center is 100 km. The district includes 26 communes and district townships, whose main income derives from the cultivation of tea and rice as well as forestry work. There are two district hospitals offering services to the whole district and one inter-communal clinic in charge of supporting and managing several CHSs. In addition, each commune has a small CHS with three commune health workers on the average. Before 1991, the public health services were short of basic equipment and housing, and most health workers had insufficient training to perform their duties (Allen, 1993). In 1991, a Primary Health Care (PHC) project, supported by Co-operation Internationale pour le Development et la Solidarité (CIDSE) was initiated in the Phu Luong district. Its goal was to increase access to, and improve the quality of PHC services by the following activities: training of health workers, providing equipment, initiating a revolving drug fund, creating a Village Health Volunteer (VHV) network at the village level and promoting vertical preventive health programs. There is a growing awareness that the utilization of reproductive health services in the mountainous area is neglected and that current changes in society may further affect the utilization of these services. However, the real situation is not known. The aim of our study was to describe the changes that had taken place in the use of family planning, antenatal care, delivery care and child immunization services from 1991 to 1994 in this district and to analyze factors influencing the utilization of these services.

MATERIAL AND METHODS

This study is based on two surveys made in one district of the Bac Thai Province. The first survey was performed in the summer of 1991 and the second during the same season in 1994.

The sample was selected through a multi-stage cluster sampling technique. The sampling procedures were identical in both studies. Ten percent of the total population of the district was studied. All 26 communes were included, and half of the villages in each commune was randomly selected. After choosing a random starting point, a member of families, proportional in size to the population of each village, were selected for inclusion in the sample. The sample included all married women aged 15-49 (in 1991 1,756 and in 1994 2,106 women) and their last born child, if she or he was below five years of age. The number of children included was 1,064 in 1991 and 1,151 in 1994.

The women were interviewed in 1991 and 1994 in their homes by 35 and 42 female field workers (with at least secondary school training), respectively. Field workers were trained for 6 days, including one day of field work in order to ensure that the interview was performed in a standardized manner. In the field exercise, they practiced interview techniques and checked Bacillus Calmette-Guerin (BCG) vaccination scars under supervision. The questionnaire had been pre-tested and revised before the study. The women were asked about the current use of family planning methods, the places where they received the services, and any difficulties they might have experienced when using contraception. Place of delivery as well as number of antenatal check-ups during the last pregnancy were recorded. The children were examined with respect

to BCG scars according to WHO criteria. The questionnaire also included information about social background factors. Women's education was classified as formal or non formal education. No formal education included those who were illiterate or who could read and write but had never attended school. Formal education was classified as primary, secondary or higher education. Women's occupation was classified as farmer or non-farmer, the latter including employed workers and others. Ethnicity was divided into three groups: Kinh, the majority group in the country, Tay, the second largest group, and other minorities forming the third group. The quality of housing, as a crude measure of poverty, was determined based on the quality (and cost) of the roof. This was categorized as good or not good.

The quality of data was checked through follow-up interviews by the supervisors. In addition, about five per cent of all mothers were randomly re-interviewed by the supervisors. If the two interview records differed, the interview was repeated. Each supervisor was responsible for 2-4 interviewers. Data were processed and analyzed by use of the Epi-info software (Dean *et al*, 1994).

RESULTS

Current use of contraceptive methods

The proportion of contraceptive use increased significantly from 48% in 1991 to 60% in 1994. IUD was the most common method increasing from 31% to 35%. The number of couples using condoms and female sterilization also increased between 1991 and 1994 (Table 1).

In 1991, 25% of the women reported various kinds of side effects when using IUD, *eg* bleeding, vaginal infection and backpain, compared to 10% in 1994. Most of the women received their modern contraceptive devices free of charge from the public health services.

Women over 25 years of age and formally educated women were more likely to use IUD both in 1991 and 1994 (Table 2). IUD use was also more common among Kinh and Tay women than in the other minority groups. Farming women were less likely to use IUD than non-farming women. In the 1994 survey, IUD use had increased, especially among younger women and women with primary schooling.

Antenatal care and delivery services utilization

About two thirds of all pregnant women had received at least one antenatal check-up both in 1991 and in 1994 but only 15 - 20% of them had received three antenatal check-ups as recommended by the Ministry of Health. There was no change in the utilization of delivery services from 1991 to 1994; only one third of the women delivered at the commune health station or hospital (Fig 1).

Table 1

Current use of contraceptive methods. Data from 1,756 and 2,106 married women aged 15-49 in Phu Luong district in 1991 and 1994 (p-value for statistical comparison between proportion users in the two samples).

Contraceptive method	Users (in 1991)		Users (in 1994)		p-value
	No.	%	No.	%	
IUD	540	30.8	745	35.4	0.002
Pill	10	0.6	22	1.0	0.206
Condom	1	0.1	71	3.4	0.000
Vasectomy	0	-	1	0.1	-
Female sterilization	38	2.2	116	5.5	0.000
Rhythm	182	10.4	188	8.9	0.105
Withdrawal	52	3.0	107	5.1	0.001
Other	15	1.0	36	1.7	0.071
No use	918	52.3	850	40.4	0.000

Table 2

IUD use in relation to selected social background factors of women in 1991 and 1994. Data from 1,756 women and 2,106 married women in Phu Luong district, Bac Thai Province.

Factors	IUD users in 1991		IUD users in 1994	
	No.	%	No.	%
Mother's age				
-24	403	13.2	417	29.1
25+	1,353	39.5	1,689	37.1
Mother's education				
Non formal	132	20.5	91	21.9
Primary	1,385	29.5	1,696	46.2
Secondary and higher	239	41.0	319	47.0
Mother's ethnicity				
Kinh	949	31.5	1,118	47.5
Tay	448	35.5	567	46.7
Minority	359	27.0	421	37.2
Mother's occupation				
Farming	1,430	31.5	1,617	44.4
Non-farming	326	42.6	489	48.2
Housing condition				
Good	504	38.7	768	48.3
Not good	1,248	31.7	1,338	43.5

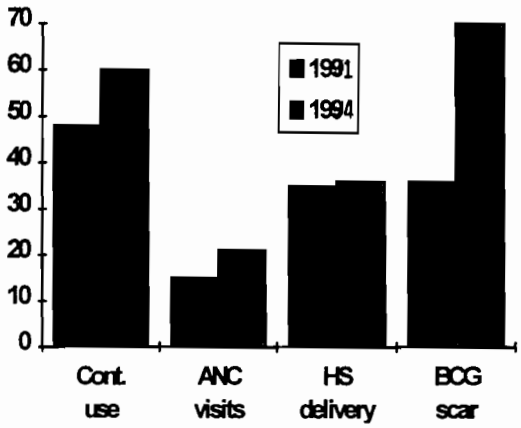

Fig 1–The percentage of utilization of reproductive health and immunization services in 1991 and 1994. Data from 1,064 and 1,151 women with children under 5 years of age in Phu Luong district, Bac Thai Province.
(Cont use: women using contraceptive methods; ANC visits: women with three antenatal check-ups during the last pregnancy, HS delivery: women delivering at health services; BCG: children with BCG scar)

Only 17% of the women with no formal education delivered in health institutions in 1991 compared to 62% of the women with secondary schooling (Table 3). The situation was similar in 1994 but more women with no education delivered in health institutions (30%). Women from ethnic minorities and farming women were less prone of deliver at commune health stations or hospitals both in 1991 and 1994.

BCG scar in children under five years of age

The proportion of children with BCG scars was two times higher in 1994 than in 1991 (70% and 36%, respectively) (Table 4).

The occurrence of BCG scars in children was strongly related to their mother's education in 1991. However, in 1994 about three quarters of the children had been BCG vaccinated in all three educational groups. The occurrence of BCG scar in children was also related to the ethnicity of their mothers in 1991 but not in 1994.

Table 3

Utilization of delivery services in relation to selected social background factors of women in 1991 and 1994. Data from 1,064 and 1,151 women, respectively, with children under 5 years of age in Phu Luong district, Bac Thai Province.

Factors	Delivery in 1991		Delivery in 1994	
	No.	%	No.	%
Mother's age				
-24	275	38.9	280	44.3
25+	789	34.5	871	33.8
Mother's education				
Non formal	58	17.2	37	29.7
Primary	869	33.5	939	31.9
Secondary and higher	137	62.0	175	61.1
Mother's ethnicity				
Kinh	553	43.0	578	43.1
Tay	275	30.7	329	31.6
Minority	236	24.2	244	26.6
Mother's occupation				
Farming	891	31.6	902	31.6
Non-farming	173	56.1	249	53.4
Housing condition				
Good	251	41.8	339	40.1
Not good	813	33.5	812	34.7

DISCUSSION

In the 1991 and 1994 surveys, we used the same methodology, sampling procedure, and questionnaire. Thus, the results from these studies can be compared. The fact that the female interviewers were recruited in different ways should not influence the comparison since they were carefully trained to perform the interviews and were closely supervised on a daily basis.

It should be noted that the use of contraceptives in women and the prevalence of BCG scars in children increased significantly from 1991 to 1994 in the Phu Luong district. The changes could be explained by several events occurring during this period. (i) There were improvements in economic and living conditions between 1991 and 1994, *eg* improved access to food. Two thirds of the households suffered from food shortage in 1991, but only one third in 1994. New consumer items were made available on the market including TV-sets, radios, cassettes, etc. Pharmaceuticals became increasingly available in state and private pharmacies as well as health services (Allen, 1993). (ii) The family planning policy forced couples to limit their number of children and they had to go to health services to receive consultation and contraceptives. In order to respond to the fertility control needs of the couples, increasing support to family planning activities was provided from the end of the 1980s. Health workers were retrained in how to carry out the family planning program in an effective way. Communication material was made available and there were population and family planning education campaigns on the radio and television. The mass organizations were mobilized and inter-sectorial approaches have been actively used in the family planning programs. The family planning was also promoted by giving incentives to contraceptive users and disincentives to couples having

Table 4

Number of children under five years of age with BCG scar in 1991 and 1994 in relation to their mother's social background factors, Data from 1,068 and 1,151 children under 5 years of age in Phu Luong district, Bac Thai Province.

Factors	BCG scar occurrence in 1991		BCG scar occurrence in 1994	
	No.	%	No.	%
BCG scar	1,068	35.8	1,151	69.9
Mother's age				
-24	275	33.1	280	76.1
25+	793	36.0	871	67.9
Mother's education				
Non formal	58	15.5	37	75.7
Primary	873	36.7	939	69.2
Secondary and higher	137	38.7	175	72.0
Mother's ethnicity				
Kinh	556	41.2	578	73.2
Tay	275	30.5	329	63.5
Minority	237	29.1	244	70.5
Mother's occupation				
Farming	895	34.5	902	68.4
Non-farming	173	37.6	249	75.1
Housing condition				
Good	252	33.7	339	72.9
Not good	813	36.3	812	68.6

more than 2 children. (iii) The primary health care project supported by CIDSE in this district emphasized immunization and family planning activities by training of health workers, provision of equipment and creation of a village health volunteer network. This led to an increase in the quality of family planning and immunization services (Allen, 1993).

The contraceptive prevalence in our study was in the same range as the 53% reported in the Demographic and Health Survey in 1988 (NCPFP, 1990). The proportion of contraceptive use in this study was, however lower than the 70% reported from the Red River Delta in 1992 (Toan *et al*, 1996). This can be explained by the high population density in the delta and the fact that family planning programs had been forcefully implemented there.

About two thirds of pregnant women had received some antenatal check-ups but only one fifth of them had undergone the three antenatal check-ups recommended by the health authorities. About one third delivered in health care clinics, both in 1991 and 1994. According to our own observations and those of other researchers (Tipping, 1994; Swensson, 1993) the antenatal care program has not been developed, and the concept of antenatal care was quite weak in rural Vietnam in spite of the recommendations given. This is particularly true for the mountainous areas, even though the norms of antenatal care were recommended several years ago. Commune health workers had not received sufficient training in the field of antenatal and delivery care. The basic equipment for antenatal and delivery care, such as blood pressure manometers, urine strips, weighing scale and essential drugs, was not available at commune health stations which should offer antenatal and delivery care to women in the rural area. In addition, the huge reduction in number of health workers at the com-

mune and village level combined with their low salaries could lead to a reduction in the quality of care. Routine data show that 40% of the commune health stations lacked midwives and that most of them were primary midwives with less than one year of training. Only one third of all midwives in this area were secondary midwives who possessed the skill required to provide antenatal and delivery care (MOH, 1994). Wolffers (1995) claimed that the health care system in Vietnam was available to the people but that its quality was very poor. This situation was confirmed by interviews conducted with women and observations made in commune health stations (Allen, 1993). Lack of equipment, low quality of care, long distance to the CHSs, responsibilities of women within their families, availability of assistance from the mother or mother in law during delivery as well as a lack of recognition of the need for antenatal check-ups were all explanation mentioned as to why women neglected ANC and preferred to deliver at home.

A previous study carried out in the mountainous areas also indicated that the utilization of delivery services was rather low, about half of the deliveries had taken place at home, and that in about two thirds of all births, a nurse or assistant doctor had been present (Allen and Thach, 1989). This low utilization of ANC and delivery services seems to be universal for the country (NCPFP, 1990) and it was also the case in the Red River Delta (Toan *et al*, 1996). Fiedler (1981) found that the use of preventive services, such as family planning, antenatal care and delivery care is more strongly associated with demographic and socio-demographic factors, especially education of women, than with health beliefs. Our findings coincide, since the education of women was found to be strongly related to the utilization of reproductive health services in this area. However, we have few data on their health beliefs. Our results are similar to the results of other studies carried out in low-income countries (Becker, 1991; Shapiro, 1994) as well as in Vietnam (Nhan *et al*, 1990; Swenson, 1993; Thang *et al*, 1992). Education may improve the ability to absorb and use the health education information and give opportunities to benefit from family planning programs provided. In an analysis of demographic and health surveys from 26 developing countries, Martin (1995) pointed out that more educated women not only had much higher contraceptive use but are also more likely to rely on effective methods than uneducated women.

Although health services are available at all levels in Vietnam, and efforts have been made by the government to provide appropriate services for everyone, the utilization of ANC and delivery services was still low, although variations were found between the different groups of women. The programmatic and policy implication of these findings should include special emphasis on the strengthening of reproductive health services, especially ANC and delivery services, and the development of a mechanism aimed at providing more effective services to less educated women and ethnic minority women who are not benefiting from these services today. This study has not provided information about the quality of care and accessibility to health services. More research on these aspects is necessary to gain a better understanding of the relationship between the utilization of the reproductive health services, the quality of care and accessibility to these services.

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