

Report on the Situation of Women, Children and Households

Between Census Household Information, Monitoring and Evaluation System (BCHIMES)

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His Majesty's Government of Nepal
National Planning Commission Secretariat
Central Bureau of Statistics

In Collaboration with UNICEF Nepal
September 2001



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FOREWORD

The development of children and women is an integral part of the all-round development of the country. His Majesty's Government of Nepal has shown its commitment to the development of children and women through various conventions.

His Majesty's Government has prepared a 10-year National Programme of Action for Children and Women for the 1990s especially in response to the 1990 Declaration of the World Summit for Children. Similarly, the Gender Equality and Women Empowerment National Work Plan 1997 has been incorporated based on the International Women's Conference held in Beijing in 1995.

Between Census Household Information, Monitoring and Evaluation System (BCHIMES) will provide necessary indicators especially on children and women as well as on the basic facilities available in different sub-regions of the country at the beginning of the millennium. It is expected that this will be of great value for planners, policymakers, researchers and implementing agencies for the evaluation and monitoring of plans and programmes.

The National Planning Commission expresses its sincere appreciation to members of the BCHIMES Steering Committee and of the Technical Committee for their valuable contribution and to CBS for conducting fieldwork, data entry, cleaning, and verification and processing. It is also appreciated that different writers were involved in the analysis of the findings. We also extend our sincere appreciation to UNICEF/Nepal for its professional facilitation as well as financial support.

September 2001



**Prithvi Raj Ligal
Vice Chairman
National Planning Commission
Singh Durbar**

A FEW WORDS

Accurate and reliable data are needed for effective national and local planning as well as for monitoring and evaluating progress and establishing trends. Between Census Household Information, Monitoring and Evaluation System (BCHIMES) provides a wide range of social data especially related to children and women. This survey is conducted once year except in the population census year and covers a wide range of social information for the year 2000.

The priority issues are collectively defined by a steering committee representing heads of most of the relevant line ministries and agencies that interact and supervise the design of the questionnaire and collection of data.

This information will be useful for the end-decade assessment of woman and child related programmes as well as to provide baseline data for the next programme cycle.

I wish to express my appreciation to the members of the BCHIMES Steering Committee and of the Technical Committee for their valuable contribution and to the Central Bureau of Statistics for conducting fieldwork, data entry, editing, validation and processing. Similarly, the scholars who were involved in producing this report deserve our special thanks.

September 2001



**Dr. Nirmal Prasad Pandey
Member, National Planning Commission &
Chairperson of BCHIMES Steering Committee**

PREFACE

I am very pleased to present this survey report on **Between Census Household Information, Monitoring and Evaluation System (BCHIMES)**. Topics covered in the survey were **education, household facilities, vital registration, water, sanitation, iodised salt, immunisation, vitamin 'A', anti natal care, post natal care, child health, family planning, breastfeeding, information, education and communication and HIV/AIDS**. The sample households are representative of the country, with three ecological zones, 13 sub-regions, and urban and rural areas of the country. This survey is the continuation and improvement recommended by the evaluation committee on **Nepal Multiple Indicator Surveillance (NMIS)**, which completed its sixth cycle during 1995-1998. The fieldwork of this survey was conducted March to May 2000. To encourage use data, additional data analysis of the **BCHIMES findings**, electronic data files are available to interested researchers from **CBS**.

BCHIMES highlights the current situation of the above mentioned subjects and also suggests some measures that can be undertaken to improve the situation in the country. It provides a detailed analysis of polio and vitamin 'A' coverage during National Polio Immunisation/Vitamin 'A' days, and literacy by its source.

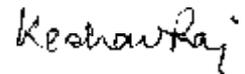
It is believed that findings from this report will be of great value to planners, policymakers, researchers and service providers involved in these areas for the effective monitoring and evaluation of plans and programmes.

The Bureau would like to express its gratitude to members of the BCHIMES Steering Committee. The committee was guided in this undertaking by representatives from the National Planning Commission; Ministry of Health; Education and Sports; Agriculture; Women, Children and Social Welfare; Housing and Physical Planning; Local Development; Association of District Development Committees; and the National Social Co-ordination Committee.

Contributions by members of the Technical Committee in preparing the questionnaire design and instructions are especially acknowledged. The Bureau also sincerely appreciates the professional facilitation and financial support of UNICEF.

Acknowledgements are also due to the authors who contributed valuable time in analysing and finalising this report. Finally, I express my sincere thanks to all the members of the BCHIMES team who worked in the field as well as in data entry, cleaning, processing and the analysis phase of the survey.

September 2001



**Keshav Raj Sharma
Director General
Central Bureau of Statistics
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EXECUTIVE SUMMARY

1. Methodology

- **BCHIMES was a national survey carried out by the CBS during the year 2000.**
- **The main objective of the survey was to provide social indicators on issues related to women and children. The findings were used for Nepal's national end decade report on progress made during the 1990s in the World Summit for Children Goals.**
- **The sample was selected by PPS-method. The total number of clusters selected for the survey was 208 (181 rural and 27 urban) covering a total of 69 districts.**
- **The targeted number of sampled households was 10,295, of which 10,269 households were successfully interviewed indicating a very low non-response rate.**
- **The survey report presents data at national level, for rural and urban areas, three ecological belts and 13 sub-regions. To present data in greater detail, figures for Central Hills with and without Kathmandu Valley were also given.**

2. Household characteristics

- **The population living in the sampled households was 56,488. The household size was 5.5, sex ratio 101.6, and masculinity proportion of 50.4.**
- **The child woman ratio was 0.532, which was lower than 0.615 per woman found in 1991 Census.**
- **The Population distribution by broad age groups indicated that 38.9% were aged 0-14 years, 53.9% were 15-59 years, and 7.2% were in the 60 years and above age group, giving a dependency ratio of 85.6. The dependency ratio was higher in the 1991 Census at 93.1, indicating a decline in fertility and mortality.**
- **Of the total household heads, only 9.1% of the household heads were female.**
- **Slightly more than half (52.4%) of the household heads were literate, the rate for female heads (19.2%) being much lower than that (55.6%) for male heads.**
- **The religion of a huge majority of household heads was 88% (88.3% male and 85.4% female) was Hinduism, that of 7.5% (7.1% male and 11.5% female) household heads was Buddhism, and only 2.9% (3.1% male and 1.2% female) household heads were Muslims.**
- **It was found that 34.0% (34.6% boys and 33.3% girls) of children surviving below 5 years of age were registered in the vital registration system, and there was no significant difference in the birth registration of male and female children.**
- **Major causes of not registering the birth of children were: due to lack of time (39%), followed by lack of knowledge about vital registration (30%) and lack of knowledge on its necessity (20%).**
- **Of the household amenities in Nepal, 24.6% of households had electricity, 49.7% had radio, 13.9% television 3.4% telephone, 24.7% bicycle, 2.1% motorcycle, 0.8% motor vehicle, and 1.4% had refrigerator. These figures indicate a continuous improvement in these facilities as compared to 1991 and 1996.**
- **85.5% of all households used traditional ovens for cooking, 11.3% used gas/kerosene, and 2.2% households used smokeless ovens. The majority of households in Kathmandu Valley and urban areas were found using gas/kerosene ovens for cooking.**
- **On average, 38.4% of households had only one bedroom, whereas 26.4% had three or more bedrooms.**

3. Education

- **The literacy rate of the population aged 6 years and above was 57.6% (70% for male and 44.9% for female). The literacy rate was 39.6% (54.5% for male and 25% for female) in 1991 and 52.6% (68.0% for male and 37.8% for female) in 1997.**

- **The overall literacy rate of 57.6% was attributed 51.3% (63.1% for male and 39.2% for female) from formal education and 6.3% (6.9% for male and 5.7% for female) from informal education.**
- **Percentage breakdown of the overall contribution in literacy by the formal and informal sectors were 89.1% (90.2% for male and 87.3% for female), and 10.9% (9.8 % for male and 12.7% for female) respectively. The contribution of the informal sector was higher for elderly age groups people, especially of those 16 years and above.**
- **On examining literacy by age groups, it was highest for the age group 11-13 years, which was recorded as 83.9% (88.8% for male and 78.5% for female) and lowest for the population 50 years of age and above as 21.7% (37.9 % for male and 5.3 % for female).**
- **Overall literacy rate was higher for both male (82.2 %) and female (62.8 %) in the urban areas as compared to that in the rural areas (68.3 % for male and 42.4 % for female).**
- **Of the sub-regions, the literacy rate of population aged 6 and over in Kathmandu Valley was highest 76.9 % (89.2 % for male and 64.6 % for female) and the same in the Central Terai was lowest 40.1 % (51.0 % for male and 27.6 % for female).**
- **The adult literacy of the population aged 15 and above at the national level was found to be 50.7% (65.8% for male and 35.4% for female). The corresponding figure in 1991 was 32.7% (48.9% for male and 17.2% for female).**
- **The Gross Enrolment Rate (GER) figures based on children aged 6-15 years, were found decreased with the advancement of levels of education. For example, it was 102.0 % at the primary level, 41.6% at the lower secondary level and 9.5% at the secondary level. The gender gaps at the lower secondary and secondary levels were very high.**
- **This survey showed that 34.2 % of children aged 6-10 years of age, are out of the school system. It showed the Net Enrolment Rate (NER) as 65.8 % (71.1 % for male and 60.0% for female) at the primary level. The highest NER in primary level was found in the Hills and the lowest in the Terai. The biggest gap between male and female enrolment was found in the Mountain region.**
- **The dropout rates for primary, lower secondary and secondary level were 3.5 %, 1.3 % and 9.6 %, respectively. The major reasons for dropping out from any level of education were children's involvement in household chores (43.3%) followed by children's unwillingness to go to school (38.9%).**
- **Children's school attendance in any level of education was not found to be a major problem, with 83% of currently school going children, attending school in the 3 days prior to the survey date. There was no significant difference between male and female children's attendance. 92.5% of children in urban areas and 88.0% of children in rural areas were found to be attending school regularly at the time of survey**
- **At the national level, 95% of currently school going children at primary level, 88% at lower secondary level, and 85% at secondary level were within one hour's walking distance to and from school. In the Eastern Hills, only 84% of children in primary level were within an hour's distance.**

4. Water Supply

- **Encouraging progress has been made in the water supply sector in the 1990s. The proportion of households in the country, who have access to safe drinking water, was 79.9% (92.3% urban and 78.1% rural).**
- **The survey found that 48.3% of all Nepalese households used piped water, 31.6% used tube well/bore hole, 16.9% used dug well/spring, and 3.2% used other sources for drinking water.**
- **Piped water and water from tubewell/bore hole is defined as safe drinking water.**

- **90.9% of all households reported that available drinking water is sufficient to them but the proportion of households in Kathmandu Valley reporting sufficient drinking water was 73.7%.**
- **About 43% of all households required less than 5 minutes for a trip to fetch drinking water. Of these 34% had water in their household compound. 35% of households required 5 to 10 minutes, and the rest needed 11 or more minutes.**
- **Households fetching water 3 or more trips were 78%. The average time to fetch a trip of water was 9.7 minutes. The average trip made by household was 4.3. The mean time to fetch water in a day was found 41.3 minutes.**
- **Fetching water by women is very common in Nepal. In 95% of households, women make one or more trips a day for water. In 43% of households, men make one or more trips and in 25% of households, children fetch water.**
- **In 60% of households, water vessels were covered to protect the water for contamination. This was the most common method of water protection/purification reported.**
- **About 16% of all households reported incidences of diarrhoea in their community during the month preceding the survey.**

5. Sanitation

- **Unlike the drinking water supply coverage rate, the national rate for sanitation coverage is still very low.**
- **In Nepal, the proportion of households with any type of toilets was 33.2% but the proportion with safe toilets was only 29.4%.**
- **Of the total households with toilets, the most common type was (40.5%) a pan connected to drainage while only 8.1% of them had a flush system.**
- **Nationally, toilets in 98.4% of all households were found to be in working condition and toilets in 69.1% households were clean.**
- **A large proportion of households (66.8%) did not have toilets. The major reasons for not having toilets were: cannot afford (51.5%), followed by no habit (16.7%).**
- **Most households disposed their household garbage in dung disposal pits (37.9%) followed by garbage pits (19.1%) and corner of household yard (16.1%).**
- **Slightly less than 90% of the households have their disposal sites in the vicinity of households or within 50 feet distance from their household.**
- **In, 61.9% of households, leftover food was found to be covered.**

6. Salt iodisation

- **At the national level, 62.6% of all households were found using adequately iodised salt, i.e., salt with iodine content greater than 15ppm, while 9.3% of households were using salt with no iodine at all.**
- **The use of adequately iodised salt was slightly higher in female-headed (64.2%) households than in male-headed households (62.4%).**
- **About 65% of households headed by a literate person were found using adequately iodised salt, while adequately iodised salt was used by only 60% of households headed by an illiterate person.**
- **The type of salt most commonly used by Nepalese households (51.8%) was crystal Foda.**
- **About 97% of the total sample of branded salt had iodine content greater than 15 PPM.**
- **The proportion of households using adequately iodised salt has increased from 55.2 % (Micronutrient Status Survey, 1998) to 62.6 % (BCHIMES, 2000).**

7. Family planning

- **Knowledge of family planning in Nepal among currently married Nepalese women of reproductive age is very high. According to BCHIMES, 99.7% of currently married women of reproductive age have heard of contraception. This figure was 98.4% in the Family Health Survey, 1996.**

- **The most commonly known method of contraception is female sterilisation (94.2%), followed by vasectomy (79.6%), Depo-Provera (78.1%), pills (69.3%), and condom (53.4%).**
- **The most common source of information on family planning for women is radio. According to the survey, the proportion of women, who received information on family planning from radio, friends and health workers were approximately 47%, 31% and 25% respectively.**
- **The survey showed the rate of ever-use of contraception by currently married women was 57.9%. A strong positive association between the educational and literacy level of women and ever use of contraception was observed. Urban women had a higher ever use rate of contraception than rural women.**
- **The most common method of contraception ever-used was Depo-Provera (44%), followed by female sterilisation (24%), and pills (22%). Ever-use of condoms in this survey was 17 %.**
- **Current use of contraception among currently married non-pregnant women was found to be 37.3%. Among literate and educated women it was more than 45%. A strong positive association between the educational and literacy level of women and current use of contraception was observed. Urban women had a higher current use rate of contraception than rural women.**
- **The most common method of contraception currently used was female sterilisation (38.9%), followed by Depo-Provera (28.4%), and vasectomy (20.6%), pills (6.5%), and condom (3.7%).**
- **Nearly 10% of sterilized women reported that they or their spouse did not sign a consent form before sterilisation.**
- **About 6% of women of sterilized couples expressed regret for having undergone the sterilization procedure. The main reasons for sterilisation regret were the side effects of sterilisation (38.2%) followed by desire for more children (38%), and death of children (12%),**

8. ANC services

- **Of the total currently married women of reproductive age, who had delivered children in last five years or are currently pregnant, 39.8 % of them had at least one ANC check-up during their last pregnancy.**
- **The mean number of ANC check-ups is 3.4 against the minimum of 4 recommended by the Safer Motherhood Programme.**
- **A high proportion (97.8%) of pregnant women received their ANC services from health institutions (either public or private). Virtually all women, received ANC services from trained health staff.**
- **The most commonly discussed subject during the ANC visit was tetanus toxoid vaccination (78.7%), followed by breastfeeding (71%) and sanitation (64.6%).**
- **Even after the establishment of at least one health institution in each VDC in accordance with government policy, 66.7% of women said it took one hour or more to reach the health institution to receive ANC services.**
- **A little over one-third of pregnant women made their first ANC visit before the third month of their pregnancy. Another 38.6% made their first ANC visit between 4-5 months of their pregnancy.**
- **Almost all 93% of pregnant women who received ANC services during their last pregnancy reported that they had a T.T. shot. 88.9% had at least two shots of T.T. vaccination.**
- **Although the distribution of iron and folic tablets are an integral part of ANC services its coverage is still a low 48.8 %. In addition, only 30% of women receiving iron and folic tablets take them for 2-3 months.**
- **Almost one-fifth of pregnant women experienced some health problems during pregnancy. The most cited problem was high blood pressure, followed by severe abdominal pain and oedema.**

- **One in 5 (20.7%) pregnant women said they smoked during their last pregnancy and 16.3% said they drank alcohol during pregnancy.**
- **About 11% of pregnant women reported that they were suffering from night blindness, which is an indication of vitamin A deficiency.**
- **Only 13.3% of pregnant women increased their food intake during pregnancy, whereas 50.5% of them decreased their food intake.**

9. Delivery and post natal care

- **Nearly 88% of currently married women of reproductive age, who had given birth to at least one child, had delivered their last baby at home, including the cowshed (2.5%).**
- **Only 1 out of 9 (11.1%) of women had delivered their babies at a health institution. However, more than two-thirds of deliveries (69.2%) in Kathmandu Valley took place in health institutions.**
- **About 13% of deliveries took place under the guidance of medically trained persons.**
- **Although MCHWs have been extensively posted in sub-health-posts, the proportion of deliveries conducted by them is still very low (0.5%).**
- **Almost 15% of deliveries were assisted by TBAs (trained 7.2% and untrained 7.5%).**
- **More than half the deliveries (52.6%) were assisted by friends and relatives, while more than 12% of women delivered on their own without any assistance.**
- **Nearly one out of 10 women (10.6%) who delivered their last baby in places other than health institution used the Home Delivery Kit (HDK) in their delivery.**
- **For nearly one-quarter (25.3%) of women who did not deliver in a health institution, the umbilical cord was cut by an instrument that was not sterilised.**
- **In 39.4% of deliveries, the umbilical cord was not treated at all. Only in 5.4% of deliveries, the umbilical cord was treated with anti-septic. Oil and ghee were used in 21.8% of deliveries.**
- **One in 5 babies (20.9%) of women were reported to be small or very small.**
- **Only 7% of women received a post-partum check-up after the delivery of their last child.**
- **Nearly 1 in 3 women experienced major problems in delivering their last child, i.e., prolonged labour, excessive bleeding and convulsion. Most of these women (69.3%) did not go for treatment.**

10. Information, Education and Communication

- **Among currently married and literate women of the 15-49 age group, the proportion of women not exposed to the print media was 66.5%. Educated women and women residing in urban areas were more likely to be exposed to print media.**
- **More women from Terai and Hill zones tended to be exposed to the print media than their Mountain counterparts.**
- **About 44% of currently married women of the 15-49 years age group listened to the radio at least once a day. Among literate women, 71.2% listen to the radio whereas only 31.8% of illiterate women listen to the radio at least once a day. More urban women (62.5%) tend to listen to the radio than their rural counterparts (41.2%).**
- **About 19% of currently married women of reproductive age watch TV at least once a week. Urban and literate women are more likely to watch TV than rural and illiterate women.**
- **Slightly less than 29% of currently married women aged 15-49 years have listened to a radio programme providing information on health issues "Ghanti Heri Haad Nilnu". About 43% of urban women as compared to 27% of rural women have listened to the programme. Among literate women the propor-**

tion who have listened this programme was 53.8%, while it was only 18.2% among illiterate women.

11. STD and HIV/AIDS

- **Among currently married women aged 15-49 years, 30% had heard of STD, 39% had heard of AIDS.**
- **A larger proportion of younger women (less than 25 years of age) have heard of STD and AIDS than such older women.**
- **Knowledge of STD and AIDS among urban women was nearly twice that of their rural counterparts.**
- **9% of currently married women aged 15-49 years, who had heard of HIV/AIDS, know where they can have an HIV-test.**
- **Overall 0.6% of currently married women aged 15-49 years, have ever been tested for HIV.**
- **Overall 60% of currently married women aged 15-49 who had heard of HIV/AIDS are aware that a healthy-looking person can be infected with HIV.**
- **31% of women in 1996 cited the use of condoms as an effective means of preventing transmission of HIV/AIDS as compared to 82% in the current survey.**
- **The three most common media for such women as sources of information about STD and HIV/AIDS were radio (79%), television (39%), and friends/relatives (39%).**

12. Breastfeeding

- **Breastfeeding, among currently married women of reproductive age who had at least one child under five year of age was almost universal (98%) in Nepal and there were very minor differentials among such mothers of various backgrounds.**
- **About 17% of children, under 5 years of age, were breastfed within one hour after birth and 45% were breastfed between 1 and 2 hours of birth.**
- **Mothers, who are literate, were found more likely to breastfeed sooner after birth than their illiterate counterparts.**
- **It was found that 76.9% of children were fed colostrum at national level. In Kathmandu Valley almost all children were fed colostrum.**
- **More literate and urban mothers fed colostrum to infants as compared to their illiterate and rural counterparts.**
- **Breastfeeding was stopped for 4.6% of children at less than 12 months and 5.3% of children at 12 to 15 months.**
- **Drinking water was given to 2.2% of children at the age less than 1 month, 28.0% of children at the age 1 to 3 months, and 52.9% at the age 4 to 6 months.**
- **Other baby food was given to 11% of children before 4 months and 23% at 4 to 5 months of age.**
- **Exclusively breastfeeding for children less than 4 months was 72%. For those 4 to 6 months old was 57.4%..**
- **The survey confirmed that bottle-feeding was rare (2.2%) in Nepal.**

13. Child Health

- **The prevalence of acute respiratory infections (ARI) among under five children of currently married women of reproductive age, in the two weeks prior to the survey was 29.1 %.**
- **Only a marginal gender difference was found in the prevalence of ARI, and children in the rural areas suffered slightly more from ARI as compared to those in urban areas.**
- **Children in the Mountains have suffered more from cough and cold as compared to those in the Hills or the Terai.**

- Children of illiterate mothers are reported to have suffered less from ARI as compared to those of literate mothers. Most common symptoms in ARI, as reported, were coughing (90%), blocked/running nose (73%), and fever (65%).
- On average, a child in Nepal was found to suffer 1.2 episodes of ARI in a year.
- The prevalence of diarrhoea among children under 5 years of age, in the last two weeks of the survey was 16.2%. More children in the rural areas suffered from diarrhoea than their urban counterparts.
- Prevalence of diarrhoea was lower among children of literate mothers. Among children who suffered from diarrhoea, 24.8% had the presence of blood in their stool.
- Among children who suffered from diarrhoea, 39% were taken to a health care provider.
- Most children (44.1%) were given less food than usual whereas very few children (7.4%) were given more food than usual when they were suffering from diarrhoea.
- Children of urban areas were given more fluid and food during bouts of diarrhoea than are their rural counterparts.
- Similarly children of the Hill zone were given more fluid and food as compared to those in Mountainous and Terai zones during bouts of diarrhoea.
- The mean number of episodes of diarrhoea among children below 5 years was found to be 1.7 per year.

14. Vitamin A

- Nine out of 10 children (89.5%) aged 6-59 months were fed vitamin A capsules, during six months prior to the survey date.
- Due to the impact of the National Vitamin A (NVAP) Programme, more rural children have received vitamin A capsules as compared to urban children (90.3% versus 82.1%). Similarly, children from the Hills were less likely to be given vitamin A capsules than children from the Terai and the Mountains (86.3% in the Hills versus 92.1% in the Terai and Mountains).
- Lowest proportion of children in Kathmandu Valley were given vitamin A capsules (45.7%) than children from any other sub-regions. The low coverage in Kathmandu Valley is explained by the fact that no vitamin A programme was launched in Kathmandu Valley before the survey date.
- It was noticed that the literacy status of mothers did not affect the vitamin A supplementation to children reflecting the fact that the main focus of the programme was in rural areas where the proportion of literate women was low.
- No gender disparity was noticed in vitamin A supplementation.
- Older children were given more vitamin A capsules than were younger children (75.2% for children of 6-11 months versus more than 92% for children older than 36 months).

15. Immunisation

- About 55% of children, of currently married women of reproductive age who had at least one child of age 12-23 months, were found fully vaccinated and 4% of such children never vaccinated.
- More male children were found fully vaccinated as compared to female children (57.6% versus 51.2%).
- 70.8% of children whose mothers had secondary level education or higher were fully immunised as compared to only 48.5% of children whose mothers had no education.
- At the national level the polio coverage on the National Immunisation Day (NID) Poush 4, 2056 was 90.6% for children aged 12-23 months.
- The percentage of children fully vaccinated has increased from 43.3% (NFHS, 1996) to 54.5% (BCHIMES, 2000).

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c h a p t e r 1

Methodology

Gokarna Regmi

Introduction

Although various socio-economic surveys are being conducted in Nepal, at times these surveys do not coincide with the planning and reporting cycles of HMG and UN agencies. Also, different surveys have different objectives, but the data from a comprehensive survey that covers indicators related to women and children is always valuable. A comprehensive Nepal Family Health Survey was conducted in 1996, which provided data for the mid-decade review in retrospect. Current data and indicators relating to issues of women and children are needed for gender specific planning and policy formulation. These data can also be used in planning other national-level programmes which are to begin in the middle of next year. This has led to the planning and execution of the present survey to generate data and indicators related to issues of women and children.

Survey objective and the content of the questionnaire

The primary objective of the Between Census Household Information for Monitoring and Evaluation System (BCHIMES) was to provide social indicators on issues related to women and children. This survey has come up with indicators on issues related to women and children for an end-decade assessment of progress of this decade and provide benchmark data for the next programme cycle. The survey questionnaire included questions on education, water and sanitation, family planning, utilisation of antenatal and postnatal services, breastfeeding and food supplementation, knowledge of AIDS/STDs, child health, immunisation, vitamin A distribution and the type of salt used in households.

Survey organisation

The BCHIMES survey was conducted by the Central Bureau of Statistics (CBS) in collaboration with UNICEF Country office, Nepal. To guide the study, a high-level steering committee for BCHIMES was formed. Honourable member of the National Planning Commission served as the Chairperson of the committee which included representatives from the ministries of Health, Education, Local Development, Women and Social Welfare, Agriculture, Housing and Physical Planning, and from the Central Bureau of Statistics as well as the Association of District Development Committees. The steering committee provided guidelines for the questionnaire design as well as on the level of estimates needed. This was helpful in designing the sample for national as well as 13 sub-regional estimates.

A technical committee was also organised to provide technical support, consisting of members from the Department of Health, Ministry of Education, and the Department of Drinking Water, Sewerage and Sanitation.

Sample design

The level of estimates sought by the steering committee played an important part in the sample design. In order to prepare the sample design, it was decided that the indicators would be needed for 13 domains (regional and/or geographical areas.) These were 1. Eastern Terai 2. Eastern Hills 3. Central Terai 4. Central Hills 5. Western Terai 6. Western Hills 7. Mid-western Terai 8. Mid-western Hills 9. Far-western Terai 10. Far-western Hills 11. Eastern, Central and Western Mountains 12. Mid-western and Far-western Mountains and 13. Kathmandu Valley. The sample size for each domain was fixed at 800 households. In each domain, the sample for urban and rural areas was allocated proportionately so that the sample within a domain was self-weighting. For national estimates, however, sample weights needed to be used as the selection probabilities were different in different domains. For this, sample weights for the levels of the household, individual woman and child have been calculated, with the help of a module developed by UNICEF for this purpose. The report contains national estimates, weighted by sample weights.

The frame for selecting sample for the survey was the list of wards with corresponding number of households from the 1991 census. Required number of wards from each domain were selected by probability proportion to size (PPS) - systematic method from the list of wards. The survey team was asked to list the selected wards and select the pre-selected segments once the listing was complete. The size of the segments was fixed at 50 households from each selected ward. Readers are referred to Appendix 1 for details about the sample design.

Scope and coverage of survey

Because the sample was designed to provide national as well as sub-regional estimates, the sample is nationally representative and covered 69 districts out of a total of 75. The sample wards were spread over all the ecological belts and development regions. The five districts that did not appear in the sample were due to fewer number of households in those districts.

Questionnaire design

A draft questionnaire was designed by the core team working at the Central Bureau of Statistics (CBS). The core team used the DHS and UNICEF modules on areas finalised by the steering committee. This draft was circulated to technical committee members as well as UNICEF programme sections for comments and improvement. Three meetings of the technical committee were held to finalise the questionnaire used in the survey. Essentially, the questionnaire contained two parts a) household level and b) individual level. Part a) contains information on household schedule, education, drinking water and sanitation, information on household characteristics and iodine content of salt. Part b) contained demographic information related to respondents such as family planning, utilisation of ANC/PNC and delivery services, STDs/HIV/AIDS, child health, breastfeeding, vitamin A and immunisation.

Recruitment, training and fieldwork

Fourteen teams were mobilised for data collection. Each team consisted of a team leader/supervisor, field data editor, and three female interviewers. A total of 71 field workers were mobilised for data collection. Team leaders/supervisors and field data editors were the permanent staff of CBS who were deputed for the survey. These field supervisors and editors were stationed at the central office or at different branch-level offices of the CBS. Likewise, seven female interviewers were also deputed from the central office of CBS. These deputed female interviewers collected data in Kathmandu Valley.

Thirty-six female interviewers were recruited at three different districts, namely, Surkhet, Sunsari and Kathmandu. These 36 interviewers were distributed among 12 teams and sent to districts for data collection. The job of data collection was allocated to each interviewer so that each team visited districts in the Terai, Hills and Mountains.

The first training of interviewers was carried out in the second week of Falgun 2057, i.e., from 19 to 24 Feb 2000, and the field test was held on 25-26 Feb, 2000. This training was held in Kathmandu for the Kathmandu Valley teams as well as for trainers. A total of 11 field workers and seven trainers participated. A field test of the questionnaire was also carried out but because most of the questions were used in previous surveys, only minor changes were needed and especially with order-and-skip questions. This training also provided the opportunity for trainers to interact with interviewers and prepared them for conducting the training at Surkhet and Inaruwa.

The training in Inaruwa and Surkhet was held from 28 Feb to 5 March. Altogether 30 participants divided into six teams participated at each training site. One day was used for field practice and one half-day was allocated for the discussion of field problems.

The fieldwork started on 7 March 2000 and ended on 30 May 2000. That is, all data collection was completed in 82 days.

Data entry and processing

The data entry programme was generated using EPI Info version 6.04. The data was entered twice and was validated using the validation programme in EPI Info in order to avoid data entry errors. During the process of validation, a substantial amount of data needed to be verified from the actual questionnaire. Once the validation check was completed, the data was checked for internal consistency using a check programme not used during the data entry stage. This process also required substantial time and problems had to be rectified by going through the questionnaire several times with different checks.

Thus processed, the data was converted into SPSS system files and were tabulated using the SPSS versions 10.0 and 7.5.

c h a p t e r 2

HOUSEHOLD CHARACTERISTICS

Krishna Prasad Shrestha

Household size, age structure, sex ratio and dependency ratio

The survey was conducted in 208 clusters (181 rural and 27 urban) covering a total of 69 districts of the country. Table 2.1 presents the population surveyed by age and sex. Of the total number of 10,295 households visited, 26 households refused to respond. Since the selection was not proportional, weights were used and the weighted total number of households was 10,302, with a total population of 56,488 persons (28,473 male and 28,015 female). The household size thus came to be 5.5 persons, which was slightly smaller than the 5.6 in the population census of 1991 (CBS 1995 p342).

Table 2.1: Numerical and percentage distribution of population by age and sex group.

Age Group	Male		Female		Total	
	Number	Percent	Number	Percent	Number	Percent
0-4	3,551	6.28	3,454	6.11	7,005	12.40
5-9	3,924	6.95	3,814	6.75	7,738	13.70
10-14	3,774	6.68	3,461	6.13	7,235	12.80
15-19	3,061	5.41	3,082	5.46	6,143	10.87
20-24	2,419	4.28	2,707	4.79	5,125	9.07
25-29	2,091	3.70	2,212	3.92	4,303	7.62
30-34	1,743	3.09	1,699	3.01	3,442	6.09
35-39	1,485	2.63	1,509	2.67	2,994	5.30
40-44	1,260	2.23	1,199	2.12	2,459	4.35
45-49	1,084	1.92	751	1.33	1,835	3.25
50-54	996	1.76	1,545	2.74	2,541	4.50
55-59	880	1.56	727	1.29	1,607	2.84
60-69	1,390	2.46	1,203	2.13	2,593	4.59
70+	814	1.44	653	1.16	1,468	2.60
0-14	11,249	19.91	10,799	18.99	21,978	38.90
15-59	15,020	26.58	15,430	27.31	30,449	53.89
60+	2,204	3.91	1,856	3.30	4,061	7.21
Nepal	28,473	50.40	28,015	49.60	56,488	100.0

Note: Component totals and grand totals may not tally with sum of its components due to rounding off of weighted figures and/or due to missing cases.

On examining the population distribution by sex, the masculinity proportion was found to be 50.4 and the sex ratio 101.6. The figures were slightly higher than the 1991 census. The sex ratio for different geographic areas and background variables is presented in Table 2.2. This table indicated that the sex ratio was highest (104.3) in the Terai among the ecological belts. The sex ratio was higher in rural areas (101.7) compared to that of urban areas (100.4). Among the sub-regions, the Central Terai had the highest sex ratio (109.5) and the Western Hills the lowest (93.8). The high sex ratio in the Central Terai may be due to male in-migration. Among the ethnic groups, Yadav had the highest sex ratio (116.9) and Gurung/Ghale the lowest sex ratio of 88.3. Among various mother tongue-speaking groups, Abadhi had the highest sex ratio of 113.2 and Magar/Gurung had the lowest of 91.6. The cause for the low sex ratio of Gurung/Ghale and Magar is possibly due to the fact that a large number of males have left their places to seek work elsewhere.

On examining the population by ethnicity, it was found that Chhetri constitute the highest (20.4%), followed by others Terai (16.1%), Brahmin (13.8%), Magar (8.1%), Newar (7.0%), Yadav (2.5%) and Gurung/Ghale (2.0%).

The population breakdown by broad age groups and dependency ratios for various geographic areas are given in Table 2.3. The population in the age group 0-14 years represented 38.9% of the total while the population of 60 years and above was 7.2%. The working age population (15-59 years) constituted 53.9% indicating a dependency ratio of 85.6, which was lower than that of the 1991 census (93.1).

The child women ratio is defined as the number of children under 5 years of age per woman of reproductive age (15-49 years). The survey found a child woman ratio of 0.532, which was lower than 0.615 per woman in 1991. This was because the population below 15 years of age was smaller (38.9%) and that of 60 years of age and above was larger (7.2%) in 2000 as compared to 1991 census data. Fig. 2.1 is a graphical presentation of the population in broad age groups in 1991 and 2000. The index of aging was found higher at 18.5

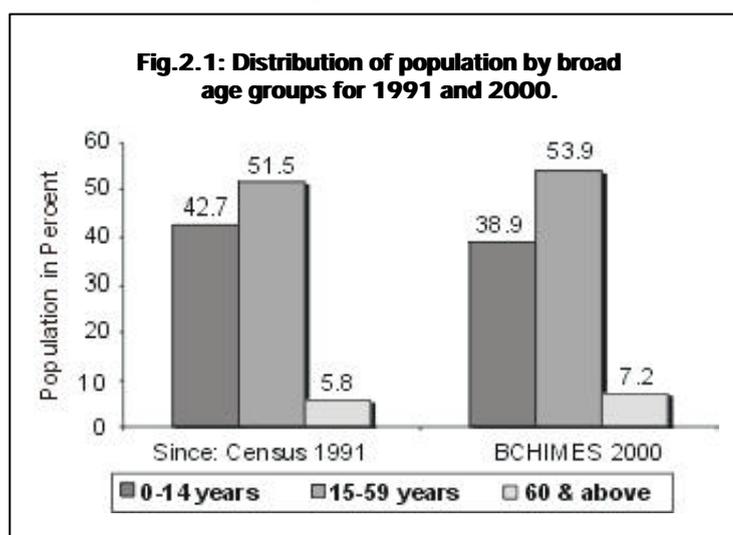


Table 2.2: Population distribution by sex and sex ratio for different geographic areas and by ethnicity and mother tongue.

Background Variable	Sex		Total		Sex Ratio
	Male	Female	Population	Percent	
Ecological Zone					
Terai	13,364	12,814	26,178	46.3	104.3
Hills	12,867	13,043	25,911	45.9	98.6
Mountains	2,237	2,170	4,408	7.8	103.1
Sub-Region					
Eastern Terai	4,142	4,164	8,306	14.7	99.5
Central Terai	4,920	4,495	9,415	16.7	109.5
Western Terai	1,955	1,862	3,817	6.8	105.0
Mid-western Terai	1,355	1,323	2,678	4.7	102.4
Far-western Terai	992	970	1,961	3.5	102.3

Table 2.2: Continued

Background Variable	Sex		Total Population	Total Percent	Sex Ratio
	Male	Female			
Sub-Region					
(E + C + W) Mountains	1,259	1,237	2,496	4.4	101.8
(MW + FW) Mountains	978	934	1,912	3.4	104.8
Eastern Hills	2,202	2,198	4,400	7.8	100.2
Central Hills	3,909	3,858	7,766	13.8	101.3
C. Hills (Ex Ktm Valley)	2,436	2,398	4,833	8.6	101.6
Western Hills	3,563	3,798	7,361	13.0	93.8
Mid-western Hills	2,112	2,077	4,189	7.4	101.7
Far-western Hills	1,080	1,114	2,194	3.9	97.0
Kathmandu Valley	1,473	1,460	2,933	5.2	100.9
Ethnicity					
Brahmin	3,898	3,927	7,824	13.8	99.2
Chhetri	5,829	5,739	11,568	20.4	101.6
Newar	1,979	1,988	3,967	7.0	99.6
Gurung/Ghale	517	586	1,103	2.0	88.3
Magar	2,247	2,304	4,551	8.1	97.6
Rai/Limbu	1,456	1,514	2,970	5.3	96.1
Tamang/Sherpa	1,414	1,399	2,813	5.0	101.2
Muslim	1,010	917	1,927	3.4	110.1
Tharu	1,643	1,620	3,263	5.8	101.6
Yadav	772	660	1,432	2.5	116.9
Others-Hills	2,807	2,771	5,578	9.9	101.2
Others-Terai	4,690	4,391	9,081	16.1	106.6
Others-Mountains	191	188	379	0.7	101.6
Mother Tongue					
Nepali	15,086	14,937	30,023	53.3	100.8
Maithali	2,839	2,548	5,388	9.6	111.4
Bhojpuri	1,736	1,664	3,400	6.0	104.5
Abadhi	545	481	1,026	1.8	113.2
Newari	1,199	1,215	2,414	4.3	98.8
Tharu	1,415	1,367	2,782	4.9	103.2
Rai/Kirati	1,281	1,328	2,609	4.6	96.5
Magar/Gurung	1,574	1,718	3,292	5.8	91.6
Sherpa	220	209	429	0.8	104.9
Others Pahadi	714	758	1,472	2.6	94.2
Others Terai	1,344	1,285	2,629	4.7	104.5
Others Himali	453	439	892	1.6	103.3
Residence					
Urban	3,306	3,293	6,599	11.7	100.4
Rural	25,163	24,734	49,897	88.3	101.7
Nepal	28,469	28,028	56,497	100.0	101.6

Note: 1. Same as in table 2.1

2. Eastern; C= Central; W= Western; MW= Mid-western; FW= Far-western; Ex KTM= Excluding Kathmandu Valley

compared to 13.6 in the 1991 census (CBS 1995, p 15). The findings suggest that fertility and mortality are declining and the proportion of elderly population is increasing.

On examining the dependency ratio among ecological belts, it was noticed that the Mountains had the highest ratio (88.3) and Hills the lowest (84.8). Among the different sub-regions, Kathmandu Valley had the lowest dependency ratio of 56.2 while the Mid-western Hills had the highest of 99.2. As expected, the dependency ratio in urban areas was found lower at 66.1 compared to 88.7 in the rural areas.

Table 2.3: Numerical and percentage distribution of population by broad age groups and dependency ratio for different geographical areas.

Geographical Areas	Population by broad age group				Dependency Ratio		
	0-14 yrs		15-59 yrs		60+ yrs		
	Number	%	Number	%	Number	%	
Ecological Zone							
Terai	10,313	39.3	14,114	53.8	1,784	6.8	85.7
Hills	9,950	38.4	14,013	54.1	1,954	7.5	84.8
Mountains	1,732	39.3	2,339	53.1	337	7.6	88.3
Sub-Region							
Eastern Terai	3,091	37.2	4,697	56.5	527	6.3	77.0
Central Terai	3,751	39.8	4,977	52.7	708	7.5	89.8
Western Terai	1,457	38.2	2,062	54.0	298	7.8	85.2
Mid-western Terai	1,177	43.9	1,366	51.0	136	5.1	96.1
Far-western Terai	837	42.6	1,012	51.5	114	5.8	94.0
E+ C+ W Mountains	956	38.3	1,320	52.9	219	8.8	89.0
MW+ FW Mountains	776	40.6	1,019	53.3	117	6.1	87.6
Kathmandu Valley	862	29.4	1,879	64.1	193	6.6	56.2
Eastern Hills	1,661	37.8	2,400	54.6	338	7.7	83.3
Central Hills	2,745	35.3	4,450	57.3	577	7.4	74.7
C. Hills (ex Kathmandu Valley)	1,883	38.9	2,571	53.1	384	7.9	88.1
Western Hills	2,773	37.7	3,944	53.6	643	8.7	86.6
Mid-western Hills	1,825	43.6	2,105	50.2	260	6.2	99.2
Far-western Hills	946	43.1	1,113	50.7	136	6.2	97.2
Residence							
Urban	2,239	33.9	3,976	60.2	386	5.9	66.1
Rural	19,757	39.6	26,490	53.0	3,688	7.4	88.7
Nepal	21,996	38.9	30,466	53.9	4,074	7.2	85.6

Note: Same as in Table 2.2

Household heads by sex

Table 2.4 presents information on household heads by sex for different geographic areas and background variables. The household heads consisted of 90.9% male and 9.1% female for the country. The proportion of female household heads was found lower than that in the 1991 census (13.2%, CBS 1995, p349) and in NMIS cycle 5 (10.4%, CBS/UNICEF 1998 p6).

Table 2.4 shows that among the ecological belts the Hills had the highest (11.9%) and the Mountains the lowest (6.5%) proportion of female household heads. Among the sub-regions, the Western Hills had the highest proportion of female-headed households of 17.1%, while it was lowest in the Central Terai (3.8%). The urban households have a higher proportion of female-heads (13.2%) as compared to the rural household (8.5%).

Literacy status of household heads

Table 2.5 presents the literacy status of household heads by sex for different geographical areas. On examining the literacy status of household heads it was found that 52.4% of household heads were literate (55.6% male and 19.2% female). Of the literate household heads, 38.6% acquired their literacy from the formal (41.1% male, 13.0% female) and 13.8% from informal (14.5% male, 6.2% female) educational sector. The literacy level of household heads was found to be higher than that of 1997, which was 48% (52% male and 17% female in CBS/UNICEF 1997 p9) and that of 1998, which was 50% (NPCS/UNICEF 1998 p7). There was a slow improvement in the literacy rate of household

Table 2.4: Numerical and percentage distribution of household heads by sex, and ethnicity for different geographical areas.

Background Characteristics	Household Heads by Sex			
	Male		Female	
	Number	Percent	Number	Percent
Ecological Zone				
Terai	4,298	93.4	303	6.6
Hills	4,291	88.1	579	11.9
Mountains	778	93.5	54	6.5
Sub-Region				
Eastern Terai	1,407	92.1	120	7.9
Central Terai	1,569	96.2	62	3.8
Western Terai	613	90.5	64	9.5
Mid-western Terai	422	94.0	27	6.0
Far-western Terai	288	90.7	30	9.3
E + C + W Mountains	455	92.8	36	7.2
MW + FW Mountains	323	94.6	18	5.4
Kathmandu Valley	553	88.3	73	11.7
Eastern Hills	721	91.2	70	8.8
Central Hills	1,369	90.5	143	9.5
Central Hills (ex Ktm Valley)	816	92.1	70	7.9
Western Hills	1,217	82.9	251	17.1
Mid-western Hills	647	90.3	69	9.7
Far-western Hills	336	88.3	45	11.7
Ethnic Groups				
Brahmin	1,320	89.7	152	10.3
Chhetri	1,964	90.1	216	9.9
Newar	657	88.9	82	11.1
Gurung/Ghale	179	79.5	46	20.5
Magar	709	86.3	112	13.7
Rai/Limbu	480	88.2	64	11.8
Tamang/Sherpa	506	91.1	49	8.9
Muslim	290	96.4	11	3.6
Tharu	479	98.0	10	2.0
Yadav	224	98.7	3	1.3
Others-Hills	940	90.0	104	10.0
Others-Terai	1,546	95.1	79	4.9
Others-Mountains	70	91.0	7	9.0
Residence				
Urban	1,142	86.8	174	13.2
Rural	8,225	91.5	761	8.5
Nepal	9,367	90.9	936	9.1

Note: Same as in Table 2.2

heads over the years. Among all the sub-regions, literacy rate of household head was highest (72%) in Kathmandu Valley. Among the ecological belts, the Hills had the highest level of literacy of all household heads.

Religion of household heads

Information regarding the religion of household heads was also collected. Table 2.6 shows the percentage distribution of households according to religion. It was found that 88.0% of household heads (88.3% male, 85.4% female) were Hindu, followed by Buddhist at 7.5% (7.1% male and 11.5% female), and only 2.9% Muslim (3.1% male and 1.2% female).

Table 2.5: Literacy rate of household heads by sex, and source of literacy for different geographical areas.

Geographical areas	Male			Female			Both sexes		
	Formal	Informal	Total	Formal	Informal	Total	Formal	Informal	Total
Ecological Zone									
Terai	39.2	12.2	51.4	14.6	8.3	22.9	37.6	11.9	49.5
Hills	44.8	15.9	60.7	12.9	4.8	17.7	41.1	14.6	55.7
Mountains	31.5	19.7	51.2	4.3	9.2	13.5	29.7	19.1	48.8
Sub-Region									
Eastern Terai	43.8	17.1	60.9	16.4	11.0	27.7	41.5	16.6	58.1
Central Terai	29.0	9.7	38.7	8.2	3.3	11.5	28.2	9.4	37.6
Western Terai	46.8	7.1	53.9	23.5	6.8	30.3	44.8	7.1	51.9
Mid-western Terai	43.7	13.7	57.4	8.4	11.4	19.8	41.8	13.6	55.4
Far-western Terai	47.8	10.3	58.1	9.3	8.3	17.6	44.2	10.1	54.3
E + C + W Mountains	30.1	26.7	56.8	6.4	13.7	20.1	28.3	25.8	54.1
MW + FW Mountains	33.5	10.0	43.5	0.0	0.0	0.0	31.7	9.5	41.2
Kathmandu Valley	71.0	8.4	79.4	14.7	3.2	17.9	64.2	7.8	72.0
Eastern Hills	40.9	22.1	63.0	10.7	10.7	21.4	38.7	21.3	60.0
Central Hills	45.1	17.1	62.2	9.8	3.5	13.3	41.6	15.9	57.5
C. Hills (ex Ktm Valley)	27.4	23.0	50.4	3.9	4.7	8.6	25.6	21.6	47.2
Western Hills	43.7	13.4	57.1	18.7	2.2	20.9	39.6	11.6	51.2
Mid-western Hills	48.9	14.6	63.5	9.1	11.0	20.1	44.7	14.2	58.9
Far-western Hills	48.5	8.9	57.4	3.1	3.1	6.2	42.9	8.2	51.1
Residence									
Urban	62.1	12.0	72.1	30.4	12.3	42.7	57.9	12.0	69.9
Rural	38.2	14.9	53.1	8.9	4.7	13.6	35.8	14.0	49.8
Nepal	41.1	14.5	55.6	13.0	6.2	19.2	38.6	13.8	52.4
Number of literate heads	3,815	1,348	5,163	118	56	174	3,934	1,404	5,338

Note: Same as in Table 2.2.

Vital registration of children

Households were asked whether children surviving below 5 years (0-59 months) of age were registered or not at the vital registration office. Table 2.7 presents children registered and not registered. On examining the total number of 8218 children, it was found that 34.0% of children (34.6% boys and 33.3% girls) were registered and 66.0% of children were not registered (Table 2.7 and Fig. 2.3). Table 2.7 indicated that vital registration is highest in the Hills (36%) and lowest (18.3%) in the Mountains of the ecological belts. Of the sub-regions, the Western Hills had the highest registration at 55.3% and the Mid-western and Far-western Mountains had the lowest registration at 12.8%. The table also shows that urban areas had slightly better (36.8%) registration than rural areas (33.7%). The results point to a low 24.4% registration in Kathmandu Valley.

Table 2.8 and Fig. 2.4 present reasons given for not registering the birth of

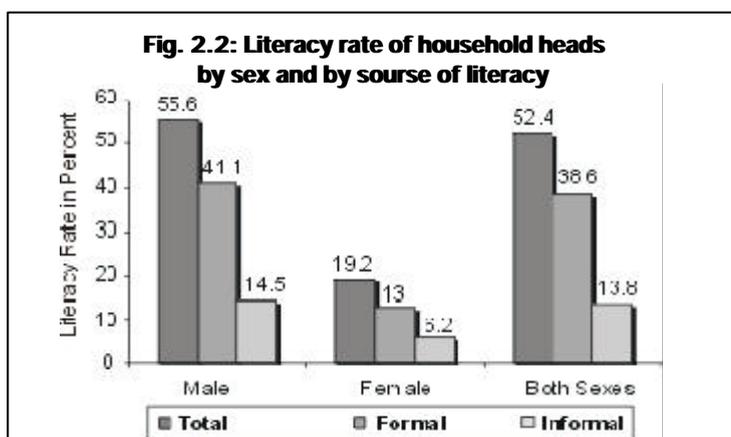
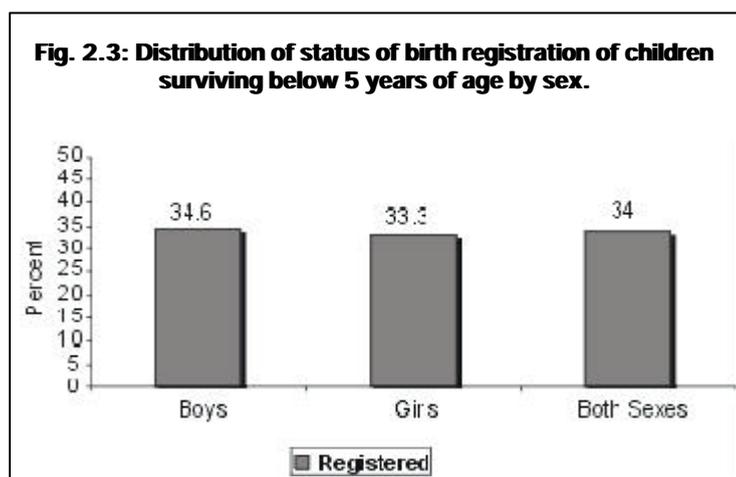


Table 2.6: Percentage distribution of household heads by sex and religion

Religion	Male	Female	Both Sexes
Hindu	88.3	85.4	88.0
Buddhist	7.1	11.5	7.5
Muslim	3.1	1.2	2.9
Others	1.5	1.9	1.6
Total Percent	100.0	100.0	100.0
Number of household heads	9,366	937	10,303

Note: Same as in table 2.1



surviving children below 5 years of age. Of the 8,218 children, 5,424 were not registered for different reasons. Of the total children not registered, it was found that 39.1% were not registered due to lack of time. Respondents of 30% children said they did not know about registration, and of 19.7% children thought there was 'no need' to register. A majority of the respondents cited not being aware of the need for registration or not having time for registration. If the importance of vital registration was spread through IEC (information education and communication) and its use in education and related matters were to be emphasised, it would greatly strengthen the system.

Household facilities

Information on household facilities such as electricity, radio, television, telephone, bicycle, motorcycle, motorcar and fridge were also collected. Table 2.9 shows the prevalence of

Table 2.7: Percentage distribution of birth registered and not registered children surviving below 5 years by sex for different geographical areas.

Geographical Areas	Birth Registered	Birth not Registered
Ecological Zone		
Terai	35.0	65.0
Hills	36.0	64.0
Mountains	18.3	81.7
Sub-Region		
Eastern Terai	48.0	52.0
Central Terai	23.8	76.2
Western Terai	46.1	53.9
Mid-western Terai	36.4	63.6
Far-western Terai	20.8	79.2
E+ C + W Mountains	23.0	76.9
FW + MW Mountains	12.8	87.2
Kathmandu Valley	24.4	75.6
Eastern Hills	47.7	52.3
Central Hills	28.5	71.5
C.Hills (ex Ktm Valley)	30.6	69.4
Western Hills	55.3	44.7
Mid-western Hills	20.1	79.9
Far-western Hills	16.7	83.3
Residence		
Urban	36.8	63.2
Rural	33.7	66.3
Nepal	34.0	66.0
Number of Children	2,794	5,424

Note : Same as in Table 2.2

Table 2.8: Percent Distribution of Children surviving below 5 Years of Age not Registered by reason for Different Areas.

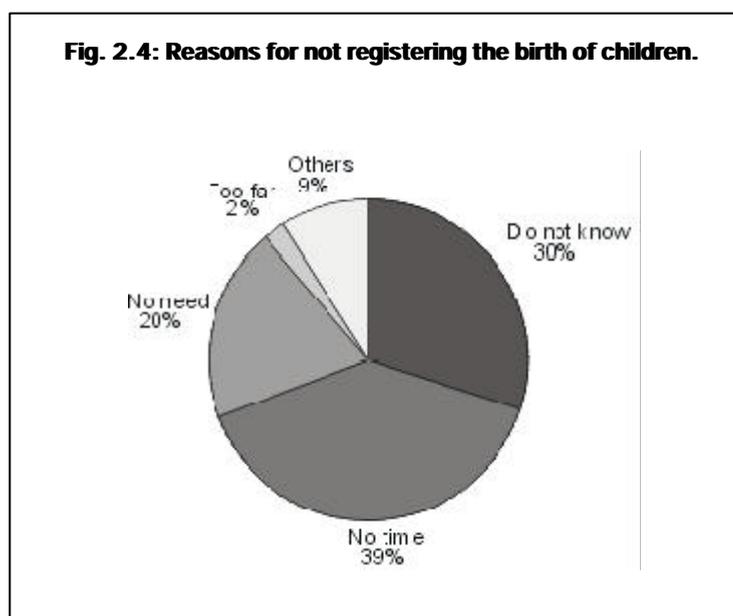
Background Characteristics	Children % by reasons for not registration									
	Don't Know		No Time		No Need		Too Far		Others	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
Ecological Zone										
Terai	11.8	9.8	20.7	23.1	8.2	10.1	1.0	0.5	7.2	7.7
Hills	17.5	16.2	18.9	18.9	11.4	10.5	1.3	1.6	1.9	1.8
Mountain	26.3	26.4	11.7	11.8	8.3	8.2	1.5	1.7	1.8	2.3
Sub Regions										
Eastern Terai	10.1	8.4	28.8	32.2	6.2	6.5	0.6	-	3.7	3.4
Central Terai	9.2	6.6	18.8	19.3	10.1	13.2	0.6	0.4	10.0	11.8
Western Terai	16.4	13.3	25.0	26.1	4.3	6.5	2.4	0.9	3.0	2.0
M-Western Terai	9.5	8.3	15.4	24.7	8.9	9.7	2.4	1.4	10.9	8.8
F-Western Terai	24.8	24.7	10.4	13.5	7.8	9.6	0.5	0.5	3.4	4.9
(E+ C + W) Mountains	17.8	16.3	16.9	17.2	11.8	11.9	1.6	2.2	1.8	2.5
(FW+ MW) Mountains	35.0	36.8	6.4	6.3	4.6	4.3	1.5	1.2	1.8	2.1

Table 2.8: Continued

Background Characteristics	Children % by reasons for not registration									
	Don't Know		No Time		No Need		Too Far		Others	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
KTM Valley	23.6	18.6	13.4	15.5	15.6	9.3	1.7	1.7	-	0.7
E. Hills	4.1	3.1	33.5	38.0	5.9	6.3	1.7	4.1	1.4	2.0
C.Hills	19.4	15.3	18.8	18.2	14.0	9.4	1.1	0.9	0.9	2.0
C.Hills(ex Ktm Valley)	17.0	13.4	21.9	19.6	13.1	9.7	0.8	0.5	1.5	2.6
W.Hills	15.5	17.6	19.6	18.5	9.8	15.0	-	1.3	1.7	0.9
M.W. Hills	18.6	15.1	16.2	16.3	13.4	12.0	2.6	1.5	2.5	1.8
F.W. Hills	27.2	31.0	9.1	7.4	9.7	7.7	1.1	1.4	3.2	2.3
Residence										
Urban	9.6	11.3	21.6	23.8	11.2	8.8	0.9	1.1	4.7	7.1
Rural	16.4	14.6	18.7	19.8	9.4	10.2	1.2	1.1	4.3	4.4
Total Percent	15.7	14.3	19.0	20.1	9.6	10.1	1.2	1.1	4.3	4.6
Total No.	847	767	1,021	1,084	515	542	64	58	234	248

Note: Same as in Table 2.2

these facilities for different geographical areas. It was reported that 24.6% of households had electricity at the national level. Households in Kathmandu Valley ranked highest in terms of electricity (93%). Of the ecological belts, the households in Hills with electricity was highest (28.1%), and was lowest (10.1%) in mountains. Among the sub-regions, the Western Terai was highest (43.1%), and the Mid-west and Far Western Mountains the lowest (0.5%). A high percentage of urban households (79.8%) had electricity as compared to households in rural areas (16.5%) as shown in Table 2.9. At the end of the Eighth Plan (1996/97), only 14% of the total population had electricity. The Ninth Plan target is to supply electricity to an additional 1.1 million people (NPC, p 89-92, 1998). Results from the survey showed that the plan is progressing ahead of schedule as far as the electricity supply is concerned.



If we examine the households having radio, nearly half (49.7%) of all households had radio in the country. Proportion of households with radios in Kathmandu Valley was highest (79%). Of the ecological belts, the Hills had the highest (59.7%) and the Terai the lowest (39.9%). Among the sub-regions, the Western Hills had the highest (67.7%), followed by the Central Hills (61.7%), and the lowest was in the Central Terai (30.0%). Urban households having radios was 71.0%, whereas it was 46.6% for rural households.

Only 13.9% of households in the country had television as compared to 74% of households in Kathmandu Valley. Among sub-regions, the Central Hills had the highest (39.4%), followed by the Western Terai (21.7%). Households in the Mid-western/Far-western Mountains did not have television. Urban households that had television made up 55.4% as compared to those 7.8% in rural areas.

Table 2.9: Percentage of households by type of facilities for different geographical areas.

Geographical Areas	Percent of household having facilities of							
	Electricity	Radio	TV	Telephone	Bicycle	Motor cycle	Car	Fridge
Ecological Zone								
Terai	23.4	39.9	12.7	2.1	50.2	2.1	1.1	1.0
Hills	28.1	59.7	16.7	4.9	4.9	2.6	0.6	2.1
Mountains	10.1	44.8	3.5	1.2	0.2	-	-	-
Sub-Region								
Eastern Terai	26.0	43.5	16.8	2.5	50.0	0.9	1.1	0.6
Central Terai	17.1	30.0	7.4	0.3	48.8	2.6	0.6	0.1
Western Terai	43.1	44.0	21.7	6.8	63.8	5.1	3.3	4.4
M-western Terai	13.3	51.3	7.3	1.3	35.0	0.5	0.5	0.8
F-western Terai	15.0	48.5	8.4	0.5	50.9	0.8	0.5	0.1
E + C + W Mountains	16.8	51.2	5.9	2.0	0.3	-	-	-
FW+ MW Mountains	0.5	35.6	-	-	-	-	-	-
Kathmandu Valley	93.0	79.0	74.0	28.0	20.9	13.8	3.0	10.7
Eastern Hills	8.5	59.3	4.4	0.1	2.9	-	-	-
Central Hills	58.8	61.7	39.4	13.4	11.7	6.8	1.9	5.0
C. Hills (ex Ktm Valley)	34.6	49.5	14.9	3.1	5.1	1.8	1.1	0.9
Western Hills	19.8	67.7	10.8	1.8	2.4	1.5	0.2	1.7
Mid-western Hills	13.0	51.2	2.4	1.2	0.1	-	-	0.1
Far-western Hills	7.8	37.3	1.6	0.1	0.6	-	-	-
Residence								
Urban	79.8	71.0	55.4	20.6	34.7	9.7	3.2	8.6
Rural	16.5	46.6	7.8	0.9	23.2	1.0	0.5	0.4
Nepal	24.6	49.7	13.9	3.4	24.7	2.1	0.8	1.4

Note: Same as in Table 2.2

If we look at the prevalence of telephones, only 3.4% of all households in the country had this facility. Telephone facilities were concentrated (28%) in the households of Kathmandu Valley. Among ecological belts, the Hills had the highest number of telephones (4.9%) and the Mountains the lowest (1.2%). By sub-regions, 13.4% of households in the Central Hills enjoyed telephone facilities. The Mid-western and Far- Western Mountain households had no telephone facilities. In terms of telephone prevalence in urban/rural households, it was found that 20.6% of urban households used telephone as against 0.9% of rural households.

Only 24.7% of households in the entire country had bicycles. Among sub-regions, Western Terai households had the highest concentration of bicycles (63.8%), whereas there was no bicycle in the Mid-western and Far-western Mountains. Urban households with bicycles made up 34.7% whereas rural households made up 23.2%.

Households having motorcycle made up only 2.1% of households in the entire country, whereas households in Kathmandu Valley have the highest concentration (13.8%). Among the sub-regions, the proportion of households in the Central Hills was highest (6.8%). Urban households with motorcycles made up 9.7% as against 1.0% for rural households.

Only 0.8% of all Nepali households had motor cars. Table 2.9 shows urban households using motorcar to be 3.2% as against 0.5% for rural households.

Only 1.4% of all Nepali households used refrigerators. Proportion with the highest use (5%) was in the Central Hills. On comparing urban/rural households, 8.6% of urban households used that facility as against 0.4% of rural households. 10.7% of households in Kathmandu Valley were the highest users.

It was found that 85.5% of all households used traditional oven for cooking, followed by 11.3% for users of gas/kerosene and 2.2% for smokeless ovens (Table 2.10) . Among the sub-regions, the Eastern Hills was the highest and the Western Terai the lowest in using traditional ovens. A large majority of households in Kathmandu Valley have used gas/kerosene ovens and very few households have used traditional ovens. 60.1% of all urban households used gas/kerosene as against 4.1% for rural households. 92.6% of all rural households used traditional oven as against 36.5% for urban households.

Information on households having electricity, radio, television, telephone and bicycle were collected in the NFHS 1996. The survey found that households having electricity, radio, television, telephone and

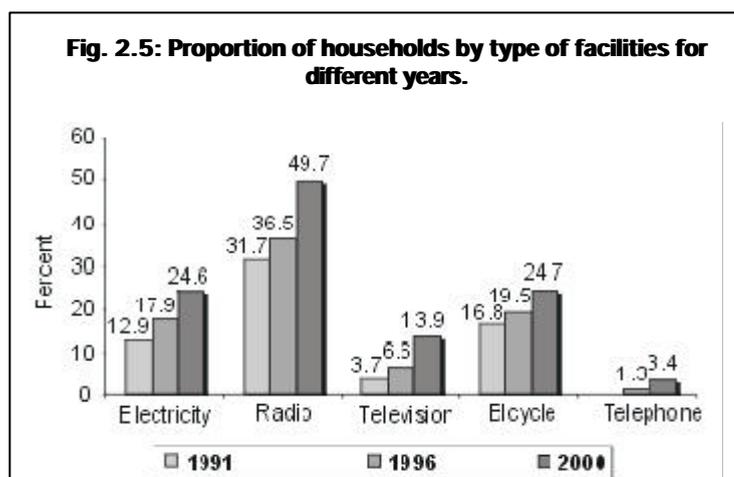


Table 2.10: Percentage distribution of households by type of oven used for different geographical areas.

Geographical Areas	Percentage Distribution of Households by Type of Oven Used				Total	
	Traditional	Smokeless	Gas/kerosene	Others	%	No.
Ecological Zone						
Terai	88.3	2.8	7.5	1.4	100.0	4,554
Hills	82.0	1.3	16.3	0.4	100.0	4,855
Mountains	90.4	3.6	2.4	3.6	100.0	830
Sub- Regions						
Eastern Terai	91.9	0.1	7.6	0.4	100.0	1,528
Central Terai	89.4	7.8	2.2	0.6	100.0	1,592
Western Terai	76.8	0.1	20.9	2.2	100.0	673
Mid-western Terai	90.2	0.2	8.6	1.0	100.0	445
Far-western Terai	87.0	0.5	4.3	8.2	100.0	316
E+ C+ W Mountains	89.6	2.3	4.0	4.1	100.0	489
FW+ MW Mountains	91.5	5.4	0.1	3.0	100.0	341
Kathmandu Valley	19.4	2.3	77.6	0.7	100.0	623
Eastern Hills	98.5	1.0	0.4	-	100.0	791
Central Hills	61.5	1.1	37.1	0.3	100.0	1,506
C. Hills (ex Ktm Valley)	91.2	0.4	8.4	-	100.0	883
Western Hills	84.9	0.4	14.6	0.1	100.0	1,461
Mid-western Hills	93.4	2.4	2.1	2.1	100.0	716
Far-western Hills	96.1	3.3	0.6	-	100.0	381
Residence						
Urban	36.5	2.2	60.1	1.1	100.0	1,303
Rural	92.6	2.1	4.1	1.1	100.0	8,935
Nepal	85.5	2.2	11.3	1.1	100.0	10,239

Note: Same as in Table 2.2

bicycle were, respectively, 17.9%, 36.5%, 6.6%, 1.3% and 19.5% at the national level (MoH 1997, p 20-21). In the NFFHS survey of 1991, households having electricity was 12.9%, radio 31.7%, television 3.7%, and bicycle 16.8% (MoH 1993, p 44). The use of such facilities in the urban areas was far greater than in the rural areas. The graphical presentation of households with such facilities for different years is shown in Fig. 2.5. Households possessing such facilities are increasing over the years.

Households with number of bedrooms

Information on the number of bedrooms used by households was also collected. The distribution of households in accordance with the number of bed rooms for different geographical areas are presented in Table 2.11. It was found that 38.4% of all households in Nepal, have used one bedroom, 35.2% have used two bedrooms, and 26.4% of households used three or more bedrooms.

Table 2.11: Distribution of households by number of bed rooms for different geographical areas.

Geographical Areas	Households by number of bed rooms						Total	
	One		Two		Three or more		No	%
	No.	%	No.	%	No.	%	No	%
Ecological Zone								
Terai	1,767	39.4	1,417	31.6	1,299	29.0	4,483	100.0
Hills	1,796	37.3	1,817	37.7	1,206	25.0	4,819	100.0
Mountains	328	39.6	326	39.4	174	21.0	828	100.0
Sub- Regions								
Eastern Terai	531	34.8	471	30.9	523	34.3	1,525	100.0
Central Terai	660	42.5	472	30.4	421	27.1	1,553	100.0
Western Terai	294	44.1	191	28.7	181	27.2	666	100.0
Mid-western Terai	174	40.7	160	37.5	93	21.8	427	100.0
Far-western Terai	107	34.3	125	40.1	80	25.6	312	100.0
E+ C+ W Mountains	228	46.7	171	35.0	89	18.2	488	100.0
FW+ MW Mountains	99	29.1	155	45.6	86	25.3	340	100.0
Kathmandu Valley	221	35.4	183	29.3	220	35.3	624	100.0
Eastern Hills	235	29.9	301	38.3	250	31.8	786	100.0
Central Hills	505	30.8	540	36.2	448	30.0	1,493	100.0
C. Hills (ex Ktm Valley)	284	32.7	357	41.1	228	26.2	869	100.0
Western Hills	611	42.1	568	39.1	273	18.8	1,452	100.0
Mid-western Hills	306	42.9	264	37.0	144	20.2	714	100.0
Far-western Hills	139	36.9	145	38.5	93	24.7	377	100.0
Residence								
Urban	437	33.6	389	29.9	473	36.4	1,299	100.0
Rural	3,453	39.1	3,173	35.9	2,206	25.0	8,832	100.0
Nepal	3,890	38.4	3,562	35.2	2,679	26.4	10,131	100.0

Note: Same as in Table 2.2

Table 2.12: Number of households by size of household members and percentage distribution of households by size of household members and by number of bed rooms for different geographical areas.

Geographical Areas	No. of Household Members	Households (%) with bed rooms			Households	
		One	Two	Three +	Number	%
Ecological Zone						
Terai	1-2	75.5	17.3	7.2	359	100.0
	3-5	47.5	34.8	17.7	1,991	100.0
	6-8	31.2	34.1	34.7	1,607	100.0
	9+	9.1	21.9	69.0	526	100.0
Hills	1-2	82.2	13.9	3.9	510	100.0
	3-5	41.3	42.3	16.4	2,319	100.0
	6-8	23.1	41.1	35.7	1,573	100.0
	9+	13.4	28.3	58.3	417	100.0
Mountains	1-2	74.2	22.7	3.1	97	100.0
	3-5	42.9	42.4	14.7	375	100.0
	6-8	29.9	42.3	27.8	281	100.0
	9+	14.7	34.7	50.7	75	100.0

Table 2.12: Continued

Geographical Areas	No. of Household Members	Households (%) with bed rooms			Households Number	%
		One	Two	Three +		
Sub- Regions						
Eastern Terai	1-2	68.2	20.6	11.2	107	100.0
	3-5	41.8	35.6	22.6	736	100.0
	6-8	26.2	30.1	43.6	564	100.0
	9+	1.7	14.4	83.9	118	100.0
Central Terai	1-2	72.6	17.9	9.4	117	100.0
	3-5	52.9	33.3	13.8	681	100.0
	6-8	36.4	33.6	30.0	533	100.0
	9+	9.5	20.3	70.3	222	100.0
Western Terai	1-2	86.1	12.5	1.4	72	100.0
	3-5	50.2	30.7	19.1	283	100.0
	6-8	33.2	32.8	34.0	235	100.0
	9+	15.8	23.7	60.5	76	100.0
Mid-western Terai	1-2	78.0	17.1	4.9	41	100.0
	3-5	48.5	37.9	13.6	169	100.0
	6-8	32.1	43.6	24.4	156	100.0
	9+	16.4	34.4	49.2	61	100.0
Far-western Terai	1-2	82.6	17.4	-	23	100.0
	3-5	44.3	42.6	13.1	122	100.0
	6-8	26.3	46.6	27.1	118	100.0
	9+	6.1	28.6	65.3	49	100.0
E+ C+ W Mountains	1-2	73.5	25.0	1.5	68	100.0
	3-5	46.6	37.5	15.9	232	100.0
	6-8	40.4	36.3	23.3	146	100.0
	9+	26.2	33.3	40.5	42	100.0
FW+ MW Mountains	1-2	75.9	17.2	6.9	29	100.0
	3-5	37.1	50.3	12.6	143	100.0
	6-8	17.8	48.9	33.3	135	100.0
	9+	-	36.4	63.6	33	100.0
Kathmandu Valley	1-2	72.9	25.4	1.7	59	100.0
	3-5	40.6	33.7	25.7	401	100.0
	6-8	10.1	23.2	66.7	138	100.0
	9+	3.8	3.8	92.3	26	100.0
Eastern Hills	1-2	72.1	16.4	11.5	61	100.0
	3-5	34.8	42.8	22.4	353	100.0
	6-8	20.3	38.9	40.9	301	100.0
	9+	9.9	32.4	57.7	71	100.0
Central Hills	1-2	67.6	27.5	4.9	142	100.0
	3-5	38.4	39.6	22.0	776	100.0
	6-8	21.2	37.1	41.7	477	100.0
	9+	10.2	17.3	72.5	98	100.0
C. Hills (ex Ktm Val)	1-2	63.9	28.9	7.2	83	100.0
	3-5	36.0	45.9	18.1	375	100.0
	6-8	25.7	42.8	31.6	339	100.0
	9+	12.5	22.2	65.3	72	100.0
Western Hills	1-2	90.1	7.5	2.4	212	100.0
	3-5	42.0	46.0	12.0	734	100.0
	6-8	24.3	45.8	29.9	391	100.0
	9+	14.8	30.4	54.8	115	100.0
Mid-western Hills	1-2	93.5	4.8	1.6	82	100.0
	3-5	52.5	40.3	7.2	305	100.0
	6-8	26.7	41.9	31.4	258	100.0
	9+	21.3	33.7	44.9	89	100.0

Table 2.12: Continued

Geographical Areas	No. of Household	Households (%) with bed rooms			Households	
Far-western Hills	1-2	88.6	11.4	-	35	100.0
	3-5	44.7	41.3	14.0	150	100.0
	6-8	25.9	44.9	29.3	147	100.0
	9+	6.7	28.9	64.4	45	100.0
Residence						
Urban	1-2	70.6	20.6	8.8	160	100.0
	3-5	37.9	36.1	26.0	654	100.0
	6-8	18.5	27.2	54.3	383	100.0
	9+	4.9	15.7	79.4	102	100.0
Rural	1-2	80.4	15.2	4.3	807	100.0
	3-5	45.0	39.6	15.4	4,030	100.0
	6-8	28.6	39.3	32.1	3,078	100.0
	9+	12.0	26.6	61.4	917	100.0
Nepal	1-2	78.8	16.1	5.1	*9.5	100.0
		(762)	(156)	(49)	(967)	
	3-5	27.4	39.18	16.9	*46.2	100.0
		(2,063)	(1,832)	(789)	(4,684)	
	6-8	44.0	38.0	34.6	*34.2	100.0
	(950)	(1314)	(1197)	(3461)		
	9+	11.3	25.5	63.2	*10.1	100.0
		(115)	(260)	(644)	(1019)	
	ALL	38.4	35.2	26.4	*100.0	100.0
	Total No.	(3,890)	(3,562)	(2,679)	(10,131)	

Notes : Same as in Table 2.2

Figures within parenthesis indicate number of households of corresponding category.

* denotes the vertical percentage distribution.

Among the ecological belts, mountain households were the highest users of only one-bed rooms (39.6%), whereas the use of three or more bedrooms was highest in the Terai (29.0%) and lowest in the Mountains (21%). Among the sub-regions, households with three or more bedrooms were highest in the Eastern Terai (34.3%) and lowest in the Eastern, Central and Western Mountains (18.2%). Proportion of households with three or more bedrooms in Kathmandu valley was higher (35.3%) than in Eastern Terai.

Looking at the number of bed rooms used by various sizes of households in the country, the survey found that 78.8% of households with one to two members used one bed room, 16.1% used two bed rooms, and 5.1% used three or more bed rooms. Nationally, households with nine or more persons using one bed room was 11.3%, two bed rooms was 25.5%, and three bed rooms was 63.2% (Table 2.12). Of the households in Nepal, majority (46.2%) were households with 3 to 5 members using three or more bed rooms, followed by households with 6 to 8 members (34.2%), and the lowest (9.5%) in 1 to 2 member households.

Among ecological belts, 3 or more bed rooms used by households with 9 or more members was highest in the Terai (69.0%) and lowest in the Mountains (50.7%). Of the sub-regions, the Eastern Terai had the highest use (83.9%), while the lowest (40.5%) was in the Eastern, Central and Western Mountains. Proportion of Kathmandu Valley households with 9 or more members using three or more bedrooms was extremely high (92.3%) in the country.

Summary and Conclusion

The survey revealed that the age structure in broad age groups has changed a little bit. The child women ratio and dependency ratios were found to have declined since the

1991 census. The old age population (60 years and above) has increased indicating declines in fertility and mortality over the years.

If vital registration could be made mandatory for enrolment, citizenship certificate, etc it could improve a lot in future.

Household facilities like electricity, radio, telephone, television etc are increasing over the years compared to previous years indicating an improvement in standard of living and government commitment to provide such facilities. If this pace continues government target to provide electricity to 50% household by 2017 can be achieved.

The Ninth plan has a target of making telephone service available to 15 % (5% for rural and 55% for urban) at the end of plan period 2002. It should be noted that currently only 3.4% households have telephone facilities.

Reference

- 1. His Majesty's Government of Nepal (HMG/N), Ministry of Health (MoH), Department of Health Services (DoHS) 1993, Nepal Fertility, Family Planning and Health Survey 1991**
- 2. HMG/N, MoH, DoHS 1997, Nepal Family Health Survey 1996**
- 3. HMG/N, National Planning Commission Secretariat (NPCS)/Central Bureau of Statistics (CBS) 1995 Population Monograph of Nepal**
- 4. HMG/NPCS 1998, Ninth Plan (1997-2001)**
- 5. HMG/N, NPCS/UNICEF 1995: Nepal Multiple Indicator Surveillance 1995, Cycle 1, Health and Nutrition**
- 6. HMG/NPCS/CBS/UNICEF, 1998: Nepal Multiple Indicator Surveillance Cycle Five, Care During Pregnancy and Delivery**
- 7. HMG/NPCS/UNICEF, 1998: Nepal Multiple Indicator Surveillance Cycle Six, Service Delivery System**

Chapter 3

EDUCATION

-Shailendra Sigdel
-Ravi Prasad Sharma

Literacy

The BCHIMES survey defined literacy, as in other surveys conducted by the CBS, as the ability to read and write a simple statement in any language. Literacy reflects the accumulated achievement of primary education and adult literacy programmes in imparting basic literacy skills that people can apply in their daily lives.

Data was collected on literacy for population aged 6 years and above by source of literacy. In this survey, household heads were asked to report whether household heads above 6 years were able to read and write a simple sentence. No tests were conducted at the time of survey. The literacy rate for population aged 6 years and above was found to be 57.6 % (70 % for male and 44.9 % for female) showing a big gender gap in literacy.

The literacy rate of the population aged 6 years and above in the Census of 1991 was 39.6% (54.4 % for male and 25 % for female), whereas in NMIS 1997 it was 52.6% (67.9 % for male and 37.8 % for female). While these two surveys are not strictly comparable due to differences in methodology, the figures suggest a gradual improvement in the literacy rate.

The Ninth Plan has set a target of 70% literacy rate by the year 2002. It will be difficult to achieve the Ninth Plan target of 70% by the year 2002 at the current pace of improvement.

Table 3.1: Literacy rate of population aged 6 years and above by sex for different age groups and by source of literacy.

Age Group Year	Both Sex			Male			Female		
	Formal	Informal	Total	Formal	Informal	Total	Formal	Informal	Total
6 - 10	69.3	0.9	70.2	74.4	0.8	75.2	63.8	1.0	64.8
11 - 13	82.5	1.4	83.9	87.9	0.9	88.8	76.5	2.0	78.5
14 - 15	79.7	2.1	81.7	86.5	0.8	87.3	72.7	3.3	76.0
15 - 24	69.5	4.6	74.1	82.1	1.9	84.0	57.5	7.1	64.6
16 - 49	50.9	7.4	58.4	67.3	6.4	73.6	34.5	8.5	43.0
50 +	9.9	11.9	21.7	18.1	19.8	37.9	1.5	3.8	5.3
6 +	51.3	6.3	57.6	63.1	6.9	70.0	39.2	5.7	44.9
10 +	49.0	7.1	56.1	61.8	7.8	69.6	35.9	6.4	42.3
15 +	42.2	8.3	50.5	56.5	9.4	65.7	28.1	7.3	35.4

Note: Literacy rate in this table may be slightly lower because the source not stated was excluded in computation.

The literacy rate of population aged 6 years and above by formal education was 51.3 % (63.1 % for male and 39.2 % for female), whereas, by informal education it was only 6.3 % (6.9 % for male and 5.7 % for female). Fig. 3.1 shows literacy rate of population aged 6 and above and for age 15 and above by sex.

The adult literacy rate of population aged 15 and above was 50.5% at the national level. The gender gap in the adult literacy rate was much wider (30.3%) as compared to the overall literacy rate of population 6+ (25.1%). The contribution of the informal sector was greater in the older age groups, especially ages 16 and above (Table 3.1). It was observed that more males have taken the opportunity of education from both formal as well as informal education. The literacy rate was highest in the 11-13 age group at 83.9 % (88.8 % for male and 78.5 % for female) and lowest in 50 and above age group at 21.7 % (37.9 % for male and 5.3 % for female).

Four decades ago, when there were not many schools, the majority of population became literate through informal education. The literacy opportunities for females were virtually non-existent then. This may be the reason for the high literacy rates (19.8 %) of male aged 50 and above by informal education. Female literacy of 8.5 % for the age group 16-49 by the informal sector could be due to recent awareness campaigns and literacy programmes targeting women. The higher literacy rate for younger age groups may be due to widespread educational facilities and awareness during the last two decades. The low female literacy rate reflects deep-rooted socio-economic and cultural bias and practices.

Table 3.2 presents the literacy rate of population aged 6 & above by source of literacy for various geographical areas. Among the ecological zones, the Hills had the highest

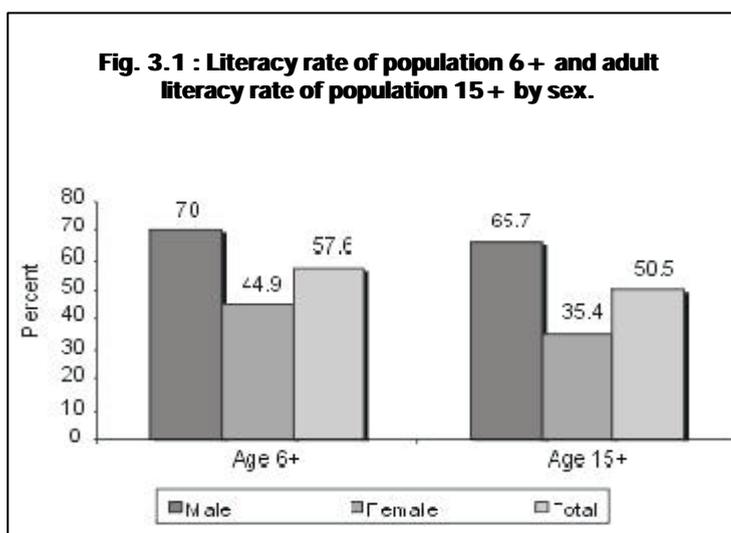


Table 3.2: Literacy rate of population aged 6 years and above by source of literacy and sex for different geographical areas.

Geographical Areas	Both Sexes			Male			Female		
	Formal	Informal	Total	Formal	Informal	Total	Formal	Informal	Total
Ecological Zone									
Terai	47.4	5.4	52.8	58.1	6.0	64.1	35.9	4.7	40.6
Hills	56.5	6.7	63.2	69.2	7.4	76.6	44.0	6.1	50.1
Mountains	42.7	9.2	51.9	57.0	9.5	66.5	27.8	8.9	36.7
Sub-region									
Eastern Terai	55.6	6.3	61.9	66.6	7.9	74.4	44.5	4.8	49.3
Central Terai	35.4	4.7	40.1	45.8	5.2	51.0	23.6	4.0	27.6
Western Terai	52.0	3.3	55.2	61.8	3.5	65.4	41.6	3.0	44.6
Mid-western Terai	52.1	7.8	60.0	64.8	7.2	72.0	38.5	8.6	47.1
Far-western Terai	52.0	5.2	57.2	65.8	5.0	70.8	37.7	5.5	43.2
E + C + W Mountains	46.4	11.9	58.3	57.7	12.7	70.5	34.8	11.0	45.8
M W + F W Mountains	37.8	5.7	43.5	56.0	5.3	61.3	18.3	6.2	24.5
Kathmandu Valley	73.2	3.6	76.9	85.3	3.9	89.2	61.3	3.4	64.6
Eastern Hills	57.2	8.7	65.9	68.0	10.0	78.0	46.2	7.4	53.7
C. Hills (Ex Ktm Valley)	48.0	9.4	57.4	58.1	10.5	68.6	37.7	8.2	45.9
Central Hills	57.8	7.1	64.9	68.6	8.0	76.6	46.9	6.3	53.2
Western Hills	60.0	5.1	65.1	70.2	6.4	76.6	50.4	3.9	54.3

Table 3.2: Continued.

Geographical Areas	Both Sexes			Male			Female		
	Formal	Informal	Total	Formal	Informal	Total	Formal	Informal	Total
Mid-western Hills	52.0	7.7	59.7	70.1	6.4	76.5	33.9	9.1	42.9
Far-western Hills	46.6	4.8	51.4	69.3	4.3	73.6	25.1	5.2	30.3
Residence									
Urban	67.8	4.8	72.6	77.2	5.0	82.2	58.1	4.7	62.8
Rural	49.0	6.5	55.5	61.1	7.1	68.3	36.6	5.8	42.4
Nepal	51.3	6.3	57.6	63.1	6.9	70.0	39.2	5.7	44.9

Note: Same as in table 2.2 and table 3.1

Table 3.3: Literacy rate of population aged 15 years and above by sex for different geographical areas.

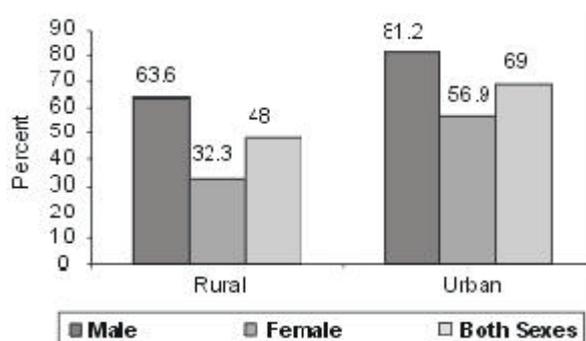
Geographical Area	Literacy rate of population aged 15 years and above		
	Male	Female	Total
Ecological Zone			
Terai	60.2	32.5	46.8
Hills	72.3	39.5	55.5
Mountains	61.9	26.6	44.5
Sub-region			
Eastern Terai	70.0	41.0	55.5
Central Terai	48.7	22.1	36.3
Western Terai	61.5	36.3	49.1
Mid-western Terai	65.6	34.1	50.7
Far-western Terai	65.8	31.3	48.7
E + C + W Mountains	66.3	34.9	50.6
MW + FW Mountains	56.2	14.9	36.2
Kathmandu Valley	87.1	58.0	72.3
Eastern Hills	74.9	43.6	59.1
Central Hills (ex Ktm Valley)	63.9	35.2	49.5
Central Hills	73.5	44.8	58.9
Western Hills	70.3	41.8	55.3
Mid-western Hills	73.2	31.9	52.2
Far-western Hills	67.5	16.4	40.9
Residence			
Urban	81.2	56.9	69.0
Rural	63.6	32.3	48.0
Nepal	65.8	35.4	50.7

Note: Abbreviations used are same as in table 2.2

literacy rate of 63.2 % (76.6 % for male and 50.1 % for female) and the Mountains the lowest of 51.9 % (66.5% for male and 36.7 % for female). Among the sub- regions, the highest literacy rate was noted for Kathmandu Valley at 76.9 % (89.2 % for male and 64.6 % for female) while the lowest was in the Central Terai with 40.1 % (51.0 % for male and 27.6% for female).

In the same way, the literacy rate of population aged 6 & above in urban areas was 72.6 % (67.8 % by formal and 4.8 % by informal sources) as compared to 55.5 % (49 % by formal and 6.5 % by informal) in the rural areas. Gender differences in urban areas was much narrower (19.4%) than in rural areas (25.9%). Figures in table 3.2 indicates that the literacy rate for male in urban areas was 82.2 % (77.2% by formal and 5 % by informal) and 68.3 % in rural areas (61.1% by formal and 7.1% by informal). Similarly, literacy rate for female in urban areas was 62.8% (58.1% by formal and 4.7% by informal) as compared to 42.4 % in rural areas (36.6% by formal and 5.8% by informal). The contribution of the formal sector in literacy by ecological zone was highest in the Hills (56.5 %) and lowest in the Mountains (42.7 %), while the contribution of the informal sector was highest in the Mountains (9.2 %) and lowest in the Terai (5.4 %).

The literacy rate of the population aged 15 years and above (Table 3.3) was 50.7% (65.8% for male and 35.4% for female). The highest adult literacy rate was observed in the Hills at 55.5% and the lowest in the Mountains (44.5%) among ecological zones. Comparing the rates in sub- regions, Kathmandu Valley had the highest literacy and the Mid- and Far- western Mountains the lowest.

Fig. 3.2: Adult literacy rate of population aged 15 and above by sex and by area of residence.

Gross Enrolment Rate

The **Gross Enrolment Rate (GER)** is the percentage of children, irrespective of their age, enrolled at a level of education to the children in the age group specified for that level of education. Age groups of children specified for primary, lower secondary and secondary levels of education are 6-10 years, 11-13 years, and 14-15 years respectively.

GER figures in this table 3.4 may not be consistent with GER data computed by Ministry of Education & Sports because the questions regarding educational information in BCHIMES was collected for only children aged 6-15 years. So the figure do not include children below 6 years and above 15 years who may be enrolled in school. The GER from BCHIMES was found decreasing in the higher level of education. It was at 102.0 % at the primary level (109.5 % for boys and 93.9 % for girls), 41.6 % (44.5 % for boys and 38.4 % for girls) at lower secondary level, and only 9.5 % (10.4 % for boys and 8.5 % for girls) at the secondary level in the country. The GER was higher for both boys and girls in urban areas. The above table shows that the highest GER is in the Hills and lowest in the Terai among the ecological belts.

Net Enrolment Rate

The **Net Enrolment Rate (NER)** is the percentage of children of some specific age group enrolled at a level of education to the children in the age group specified for that level of education. NER figures in this table 3.5 may not be consistent with NER data computed by Ministry of Education & Sports because of methodological differences in the way information is collected.* However, Table 3.5 shows that 34.2% of primary-school-age group children in Nepal were not enrolled in primary school. The highest NER was reported in the Hills and the lowest in the Terai. The substantial gap in NER among boys

Table 3.4: Gross Enrolment Rate of children by sex and by level of education for different geographical areas.

Geographical Area	Primary			Lower Secondary			Secondary		
	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
Ecological Zone									
Terai	93.1	76.3	85.0	42.1	37.8	40.1	11.4	9.3	10.4
Hills	126.1	112.6	119.6	48.2	41.7	45.1	10.3	8.3	9.3
Mountains	113.7	89.3	102.1	36.1	20.8	28.9	5.5	5.6	5.5
Sub-region									
Eastern Terai	115.6	97.0	106.3	60.5	58.0	59.3	12.9	11.7	12.3
Central Terai	67.9	49.1	59.1	24.6	23.3	24.0	8.1	5.1	6.7
Western Terai	95.1	77.1	86.4	45.1	41.2	43.2	14.1	19.4	16.6
Mid-western Terai	108.2	88.0	98.2	38.6	25.0	31.7	13.8	2.9	8.1
Far-western Terai	101.3	94.5	98.0	39.7	24.7	32.5	10.6	8.5	9.6
E + C + W Mountains	118.6	109.0	114.1	41.2	25.6	33.9	5.1	7.4	6.2
MW + FW Mountains	108.1	66.9	88.4	28.4	13.3	21.3	6.3	2.9	4.5
Kathmandu Valley	114.5	118.0	116.1	58.6	66.7	62.5	37.5	23.2	30.4
Eastern Hills	145.2	127.1	136.3	44.1	51.6	47.3	4.7	7.3	6.0
Central Hills (ex Ktm Valley)	107.8	100.6	104.4	39.2	32.5	35.9	12.0	7.9	9.8
Central Hills	109.8	105.6	107.8	45.6	43.6	44.6	21.6	13.4	17.4
Western Hills	138.2	128.7	133.5	56.5	48.4	52.5	7.2	8.2	7.7
Mid-western Hills	120.4	98.3	109.9	46.7	28.1	37.9	7.1	5.4	6.3
Far-western Hills	125.0	84.5	104.4	41.2	19.2	31.0	4.0	2.0	3.0
Residence									
Urban	112.1	99.5	106.0	55.0	71.0	62.6	23.6	17.6	20.4
Rural	109.2	93.2	101.5	43.1	34.2	38.9	8.7	7.1	7.9
Nepal	109.5	93.9	102.0	44.5	38.4	41.6	10.4	8.5	9.5

Note: Same as in table 3.3.

Data are based on children aged 6-15 years.

and girls was found in the Mountain region. The Ninth Plan has set a target of 90 % NER for the primary level by year 2002. Since the current NER of children in primary level of education is only 65.8 % (71.1 % for boys and 60% for girls), it may be difficult to achieve the goal within the next two years. The NER for lower secondary and for secondary level at national level were found to be 18.5 % (20.7 % for boys and 16.0 % for girls) and 7.8% (8.5 % for boys and 7.1 % for girls), respectively.

Dropout rate

According to BCHIMES, school dropout rate is calculated as the percentage of children who are reported to be no longer enrolled in school, to the children who had ever enrolled in school. The dropout figure from BCHIMES differs from that of the Ministry of Education and Sports.

Table 3.5: Net Enrolment Rate of children by sex and by level of education for different geographical areas.

Geographical Area	Primary			Lower Secondary			Secondary		
	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
Ecological Zone									
Terai	62.3	49.8	56.3	20.8	16.1	18.5	8.7	7.5	8.1
Hills	79.9	70.9	75.5	21.2	17.1	19.2	9.2	7.2	8.2
Mountains	73.8	58.1	66.3	17.8	8.7	13.5	4.4	4.4	4.4
Sub-region									
Eastern Terai	78.5	62.3	70.5	30.3	21.7	26.2	9.7	10.7	10.2
Central Terai	45.8	31.9	39.3	13.7	9.7	11.9	5.9	2.6	4.4
Western Terai	61.8	54.2	58.2	20.4	22.9	21.6	10.3	14.9	12.4
Mid-western Terai	74.1	60.4	67.3	15.8	11.5	13.7	13.8	2.9	8.1
Far-western Terai	63.7	54.5	59.3	17.9	11.0	14.6	6.4	4.3	5.3
E + C + W Mountains	76.7	64.5	70.9	20.6	12.2	16.7	5.1	5.6	5.3
MW + FW Mountains	71.1	50.7	61.4	14.9	3.3	9.4	3.1	2.9	3.0
Kathmandu Valley	72.3	73.4	72.8	29.3	33.3	31.3	30.4	21.4	25.9
Eastern Hills	82.6	78.0	80.3	21.8	21.3	21.6	4.7	7.3	6.0
Central Hills (ex Ktm Valley)	69.0	61.0	65.2	13.1	16.0	14.5	10.9	5.9	8.3
Central Hills	70.0	64.6	67.4	18.5	21.6	20.0	18.2	11.5	14.8
Western Hills	91.8	82.0	86.9	25.6	18.4	22.1	7.2	6.8	7.0
Mid-western Hills	75.4	61.9	68.9	18.5	8.4	13.7	6.1	4.3	5.2
Far-western Hills	78.6	58.6	68.4	20.0	6.8	13.9	4.0	2.0	3.0
Residence									
Urban	74.0	64.1	69.2	25.7	33.0	29.1	20.0	15.7	17.7
Rural	70.8	59.6	65.4	20.1	13.8	17.1	7.0	5.8	6.4
Nepal	71.1	60.0	65.8	20.7	16.0	18.5	8.5	7.1	7.8

Note: Same as in table 3.3.
Data are based on children aged 6-15 years.

The national dropout rates in primary and lower secondary levels were extremely low in comparison with the Ministry's figures. The highest dropout rates were found in the Mountain and Terai regions. Primary and lower secondary-level dropout rates were lower than that of the secondary level in all ecological zones.

Among the sub-regions, the highest dropout rates were found in the Central Terai and the lowest dropout rate in the Western Hills. In the case of girls, high dropout rates were found in the Eastern, Central and Western Mountains.

* The Ministry of Education and Sports (MOES) reports GER, NER and other educational indicators annually. For this purpose, the ministry collects educational data from every school all over the country. MOES uses the publication of the Ministry of Environment and Population to calculate GER, NER and other population related indicators. MOES also uses the Sprague multiplier to calculate the desired group of the population and then calculates GER, NER by using UNESCO approved formula.

Table 3.6: School dropout rate of children by sex and by level of education for different geographical areas.

Geographical Area	Primary			Lower Secondary			Secondary		
	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
Ecological Zone									
Terai	4.7	3.2	4.1	2.5	1.2	1.9	8.6	16.7	12.3
Hills	2.1	3.3	2.6	1.4	0.5	1.0	0.0	11.5	5.5
Mountains	4.2	8.1	5.9	1.6	0.0	1.1	16.7	16.7	16.7
Sub-region									
Eastern Terai	2.9	2.2	2.6	3.2	1.2	2.3	14.3	14.8	14.5
Central Terai	8.8	5.8	7.7	3.8	0.0	2.1	0.0	33.3	14.8
Western Terai	1.7	0.9	1.4	0.0	1.8	0.8	8.3	13.3	11.1
Mid-western Terai	4.4	4.5	4.5	2.5	3.7	3.0	10.0	33.3	15.4
Far-western Terai	4.2	4.2	4.2	0.0	0.0	0.0	0.0	0.0	0.0
E + C + W Mountains	5.1	10.1	7.4	2.3	0.0	1.5	25.0	20.0	22.2
MW + FW Mountains	3.0	5.2	3.8	0.0	0.0	0.0	0.0	0.0	0.0
Kathmandu Valley	5.2	5.7	5.5	0.0	0.0	0.0	0.0	13.3	5.6
Eastern Hills	1.8	3.8	2.7	1.1	0.0	0.6	0.0	11.1	7.1
Central Hills (ex Ktm Valley)	3.9	4.9	4.4	1.3	1.6	1.4	0.0	0.0	0.0
Central Hills	4.3	5.2	4.7	0.7	0.8	0.8	0.0	8.7	3.6
Western Hills	0.3	0.6	0.4	1.2	0.0	0.7	0.0	25.0	14.8
Mid-western Hills	2.5	3.6	3.0	2.3	2.1	2.2	0.0	0.0	0.0
Far-western Hills	1.9	6.4	3.8	2.8	0.0	2.0	0.0	0.0	0.0
Residence									
Urban	2.3	3.2	2.7	2.1	0.6	1.3	5.7	3.4	4.7
Rural	3.4	3.7	3.6	1.7	0.8	1.3	4.1	18.9	11.2
Nepal	3.3	3.7	3.5	1.7	0.8	1.3	4.5	15.1	9.6

Note: Same as in table 3.5

Reasons for dropout

For all children who were reported to have dropped out of any level of education, household heads were asked for reasons for dropout. Multiple responses, up to three reasons, were recorded for this question. The survey found that the most commonly cited reason was that the child was needed to help with household chores (43.3%). The second most frequent reason for dropping out of school was that the child was not willing to go to school (38.9%). Schooling being too expensive (12.5%), parents not wishing their children to continue (11.7%), and the children having to repeat or fail a grade (9.1%) were also cited for reasons for dropout. The three least commonly given responses were "language problem" (0.2%), "unqualified teacher and unsuitable school environment" (0.8%) and "scarcity of textbooks" (1.9%).

Although the small number of respondents suggests caution in interpreting these results, differences were found by ecological zone and gender. While "help with household chores" was the most commonly cited reason in the Hill and Mountains, in the Terai the most common reason given was "child not willing to go to school". Help with household chores" was more often given as the reason for girls and boys for the Hill and Mountain eco-zones, this was not the case for the Terai. "Child not willing to go to school" was cited more for boys and girls in the Terai and the Hills, but in the Mountain eco-zone, the trend is reversed with more girls dropping out because they did not want to go to school, compared to boys. Marriage was given as the reason for dropout for 9.5% of Terai girls.

Time taken to and from school

The survey collected information on time taken by currently school going children aged 6-15 years to go to and come back from school. The figures show that physical accessibility

Table 3.7: Reasons for dropping out in any level of education by sex and ecological zones.

Reasons given for dropout	Terai			Hills			Mountains			Total		
	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
Completed the desired level of education	6.2	9.9	7.6	2.0	1.4	1.6	7.7	0.0	3.0	5.1	4.6	4.8
Lack of school for further education	1.8	2.7	2.1	5.3	3.9	4.5	6.3	5.0	5.5	3.2	3.6	3.4
Too expensive	14.9	6.2	11.7	8.2	20.6	15.4	6.3	7.5	7.0	12.1	12.9	12.5
Help in house chores	36.4	34.3	35.6	43.7	56.3	51.0	48.8	55.1	52.6	39.6	47.3	43.3
School/Teacher not good	0.5	0.8	0.6	0.0	1.4	0.8	3.9	0.0	1.5	0.6	0.9	0.8
Parents didn't want	9.8	15.2	11.8	8.3	17.4	13.6	8.8	3.2	5.4	9.2	14.4	11.7
Had Repeat/Fail Grade	7.9	4.5	6.7	18.0	12.2	14.6	0.0	4.1	2.5	10.2	7.9	9.1
Not willing to attend	47.6	39.4	44.5	38.3	32.5	34.9	21.8	30.8	27.2	42.5	35.0	38.9
Language problem	0.0	0.8	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.2
Got married	0.0	9.5	3.5	1.6	0.6	1.0	0.0	4.1	2.5	0.5	4.7	2.5
Scarcity of textbooks	5.9	0.0	3.7	0.0	0.0	0.0	0.0	0.0	0.0	3.6	0.0	1.9
Others	17.7	19.1	18.2	16.5	11.2	13.4	25.6	11.6	17.1	18.1	14.4	16.3

Note: The total may not add to 100 because of multiple response (upto 3 responses)

to schools was a major problem in the country. At the national level, almost 95 % of children could walk to primary school and came back within an hour. The biggest problem is found in the Eastern Hills, where 16% of children took more than one hour to reach and return from primary school.

Table 3.8: Distribution of children by time taken to and from primary schools for different geographical areas.

Geographical Area	Children (%) by time taken to and from school (in minutes)				
	<10	11-20	21-30	31-60	61+
Ecological Zone					
Terai	29.2	24.0	23.6	20.1	3.0
Hills	27.9	21.7	23.8	19.6	6.9
Mountains	25.1	20.5	26.4	21.5	6.6
Sub-region					
Eastern Terai	19.8	29.3	21.7	26.3	3.0
Central Terai	42.1	17.6	18.4	19.2	2.7
Western Terai	33.4	15.2	35.4	12.0	4.1
Mid-western Terai	27.9	27.1	21.7	20.1	3.2
Far-western Terai	28.8	30.2	27.5	11.7	1.7
E + C + W Mountains	27.3	18.5	24.8	22.6	6.8
M W + FW Mountains	21.8	23.5	28.7	19.8	6.2
Kathmandu Valley	33.8	39.1	16.4	10.3	0.4
Eastern Hills	21.5	17.7	18.3	26.6	15.8
Central Hills (ex Ktm Valley)	38.8	24.1	17.7	16.4	3.2
Central Hills	37.0	28.8	17.3	14.5	2.4
Western Hills	21.9	20.5	33.3	18.3	6.0
Mid-western Hills	39.1	14.7	20.6	18.8	6.8
Far-western Hills	16.6	27.7	25.0	26.2	4.5
Residence					
Urban	30.3	30.5	25.3	12.0	1.8
Rural	28.0	21.6	23.7	20.9	5.8
Nepal	28.2	22.5	23.9	20.0	5.4

Note: Same as in table 3.5

In the country as a whole, almost, 88 % of children could reach the lower secondary school within one hour to and from school. There was significant difference between urban and rural areas. In the Eastern Hills and Mid-western Hills only about 75 % of children could reach and return from lower secondary school within one hour.

Similarly, 85 % of children could reach secondary school and return home within an hour. The physical accessibility of secondary schools was a problem in the Eastern Hills, where 64% of children spend more than one hour going to and returning from secondary school.

Table 3.9: Distribution of children by time taken to and from lower secondary schools.

Geographical Areas	Children (%) by time taken to and from school (In minutes)				
	<10	11-20	21-30	31-60	61+
Ecological Zone					
Terai	16.2	20.1	26.4	29.1	8.2
Hills	26.5	18.1	18.8	23.1	13.5
Mountains	9.1	15.6	23.3	30.3	21.6
Sub-region					
Eastern Terai	9.2	13.4	23.9	42.0	11.5
Central Terai	26.0	30.9	28.4	11.4	3.3
Western Terai	21.4	23.3	33.4	18.1	3.8
Mid-western Terai	18.5	24.3	21.9	24.4	11.0
Far-western Terai	25.2	26.6	27.2	16.2	4.8
E + C + W Mountains	8.3	16.2	24.5	28.4	22.7
M W + FW Mountains	11.1	14.3	20.6	34.9	19.0
Kathmandu Valley	46.8	30.5	12.8	9.9	0.0
Eastern Hills	15.2	15.1	14.3	29.3	26.1
Central Hills (ex Ktm Valley)	30.7	17.3	22.8	25.2	3.9
Central Hills	38.3	23.8	18.0	18.0	2.0
Western Hills	24.0	17.2	23.8	23.5	11.5
Mid-western Hills	27.4	11.8	13.8	21.3	25.7
Far-western Hills	15.8	22.2	20.3	31.5	10.2
Residence					
Urban	34.7	27.2	23.5	10.1	4.5
Rural	18.5	17.0	21.9	29.4	13.3
Nepal	21.3	18.8	22.2	26.0	11.7

Note: Same as in table 3.5

Table 3.10: Distribution of children by time taken to and from secondary schools.

Geographical Areas	Children (%) by time taken to and from school (In minutes)				
	<10	11-20	21-30	31-60	61+
Ecological Zone					
Terai	12.5	11.3	36.4	25.6	14.1
Hills	25.9	21.8	15.3	20.7	16.2
Mountains	24.9	12.1	29.5	16.8	16.8
Sub-region					
Eastern Terai	8.9	7.9	25.7	33.7	23.8
Central Terai	11.8	11.8	76.4	0.0	0.0
Western Terai	3.1	11.3	38.7	34.7	12.2
Mid-western Terai	41.0	20.9	10.5	20.9	6.7
Far-western Terai	27.2	19.2	40.8	12.8	0.0

Table 3.10: Continued.

Geographical Areas	Children (%) by time taken to and from school (In minutes)				
	<10	11-20	21-30	31-60	61+
E + C + W Mountains	28.1	10.3	41.1	10.3	10.3
M W + FW Mountain	16.7	16.7	0.0	33.3	33.3
Kathmandu Valley	22.1	38.8	12.2	22.1	4.8
Eastern Hills	0.0	14.6	13.2	8.0	64.1
Central Hills (ex Ktm Valley)	35.5	6.4	19.3	32.2	6.4
Central Hills	27.1	25.1	14.6	25.0	6.3
Western Hills	39.3	23.0	13.2	16.4	8.2
Mid-western Hills	29.5	7.4	18.7	22.2	22.2
Far-western Hills	0.0	0.0	50.0	25.0	25.0
Residence					
Urban	24.2	22.1	31.8	18.1	3.8
Rural	17.5	14.0	24.1	24.8	19.6
Nepal	19.3	16.3	26.3	22.9	15.2

Note: Same as in table 3.5

Therefore, on average, physical access was not a problem in most areas. To minimise this where it is a problem, new schools need to be opened after proper school mapping and school location planning.

Attendance of currently school going children in the last 3 days

The survey findings suggest that school attendance in any level of education, was not a major problem. Out of currently school going children, 83% had attended school in the 3 days preceding the survey. There was no significant difference in attendance of boys and girls. School attendance was highest in the Mid-western Hills and lowest in the Western Hills. Among the ecological zones the proportion of such children was highest in Terai and more in urban (92.5%) as compared to rural areas (82%).

Table 3.11: Attendance of currently school going children in any level of education by attended number of days for different geographical areas.

Geographical Area	Children (%) by attended number of days											
	None			One Day			Two Days			Three Days		
	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
Ecological Zone												
Terai	1.0	0.4	0.8	1.0	1.0	1.0	9.0	8.7	8.9	88.9	89.9	89.3
Hills	1.0	1.1	1.0	3.8	4.1	3.9	16.8	15.0	16.0	78.5	79.8	79.1
Mountains	1.1	0.3	0.8	1.3	1.2	1.3	15.2	22.6	18.3	82.4	75.8	79.7
Sub-region												
Eastern Terai	0.0	0.0	0.0	0.6	0.5	0.5	19.4	21.0	20.2	80.0	78.5	79.3
Central Terai	2.9	0.8	2.1	2.2	0.8	1.7	20.2	24.9	22.1	74.7	73.4	74.2
Western Terai	0.5	0.0	0.3	0.5	1.8	1.1	17.0	17.1	17.0	82.0	81.1	81.6
Mid-western Terai	0.9	0.7	0.8	0.6	0.7	0.7	17.9	20.1	18.9	80.6	78.4	79.6
Far-western Terai	1.2	1.0	1.1	0.8	1.5	1.1	15.8	19.4	17.4	82.2	78.1	80.3
E + C + W Mountains	1.1	0.5	0.8	1.5	1.4	1.5	15.7	19.9	17.6	81.6	78.2	80.1
MW + FW Mountains	0.5	0.0	0.3	1.0	0.9	0.9	14.3	27.6	19.1	84.2	71.6	79.6
Kathmandu Valley	0.9	1.6	1.2	0.6	0.0	0.3	16.3	17.9	17.1	82.2	80.4	81.4
Eastern Hills	1.7	2.3	2.0	0.7	0.6	0.6	18.3	20.7	19.4	79.4	76.5	78.0
Central Hills	1.5	1.4	1.4	2.4	2.1	2.2	18.7	21.1	19.9	77.4	75.4	76.5
C. Hills (ex Ktm Valley)	1.9	1.2	1.6	3.6	3.6	3.6	20.5	23.5	21.9	74.1	71.7	72.9

Table 3.11: Continued

Geographical Area	Children (%) by attended number of days											
	None			One Day			Two Days			Three Days		
	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
Western Hills	0.0	0.0	0.0	9.5	9.3	9.5	20.5	19.0	19.8	70.0	71.6	70.7
Mid-western Hills	0.8	0.8	0.8	0.2	0.8	0.5	10.2	5.9	8.4	88.8	92.4	90.3
Far-western Hills	1.2	0.6	0.9	1.6	2.4	1.9	10.9	8.3	9.9	86.4	88.7	87.3
Residence												
Urban	0.4	0.2	0.3	0.3	0.5	0.4	7.3	6.4	6.9	91.9	93.0	92.5
Rural	1.1	0.8	1.0	2.8	3.0	2.9	14.4	13.6	14.1	81.6	82.6	82.0
Nepal	1.1	0.7	0.9	2.5	2.7	2.6	13.6	12.6	13.2	82.8	83.9	83.3

Reasons for not attending school in the last 3 days

Table 3.12 shows that the reasons for not attending school in any level of education were mostly due to ill health of children (23.4% for boys and 45.8% for girls) followed by the need to help in household work, (20.6% for boys and 21.7% for girls) and children's unwillingness to go to school (23.3% for boys and 15.6% for girls).

Table 3.12: Distribution of children by reasons for not attending the school in any level of education by ecological zones.

Geographical Area		Children (%) by reasons for not attending school regularly						
		Child was sick	Need to help in household work	School too far	Teachers not good	Children's Unwillingness	Language problem	Others
Terai	Boys	17.5	24.1	25.9	16.3	17.8	0.0	31.0
	Girls	8.8	46.9	0.0	0.0	6.9	0.0	51.1
	Total	15.4	29.6	19.7	12.4	15.2	0.0	35.8
Hills	Boys	24.0	17.0	5.4	0.0	28.1	0.0	44.1
	Girls	58.0	14.7	5.8	0.0	18.6	4.0	28.9
	Total	40.3	15.9	5.6	0.0	23.5	1.9	36.8
Mountain	Boys	52.6	23.7	9.2	0.0	23.7	9.2	23.7
	Girls	0.0	0.0	0.0	0.0	0.0	0.0	100.0
	Total	46.0	20.7	8.0	0.0	20.7	8.0	33.3
Nepal	Boys	23.4	20.6	14.5	7.0	23.3	0.7	36.9
	Girls	45.8	21.7	4.4	0.0	15.6	3.0	35.2
	Total	31.9	21.0	10.7	4.4	20.4	1.6	36.3

Note: The total may not add to 100 because of multiple response (upto 3 responses)

Early Childhood Development (ECD)/Pre-primary

At the national level, 47.3% of children were found entering Class 1 with experience of pre-primary classes or Early Childhood Development programmes. Among them 46.6% were boys and 48.2% were girls. These figures varied significantly from one region to another. (see table A5 in appendix 1.)

This was the first time data was collected on pre-primary/ECD at the national level. It was thus difficult to verify whether these data were reliable or not. At face value, the data seems to represent an over-estimation. This over-estimation could be due to misunderstanding of the questions by the respondents: for example, if a child is studying in a special section, s/he could have been interpreted as having had an ECD experience. Secondly, the respondent might have regarded home education as pre-primary education.

Summary and Conclusion

- 1. The Literacy rate of population aged 6 years and above was 57.6 % (70 % for male and 44.9 % for female). The gender gap was thus very high in literacy.**
- 2. The adult literacy of the population aged 15 and above at the national level was found to be 50.7% (65.8% for male and 35.4% for female). The corresponding figure in Census 1991 was 32.7% (48.9% for male and 17.2% for female).**
- 3. There were differences between literacy rates by urban and rural areas as well as by sub-regions.**
- 4. The literacy rate has increased in recent years, but the literacy target set out in the Ninth Plan will be difficult to achieve.**
- 5. Most of the educational indicators showed that females lagged behind males, thus greater attention to girl's education is called for.**
- 6. School attendance was not a major problem. Most of currently school going children were found attending all three days in the past three days.**
- 7. The computed dropout rate from the present survey, suggests dropping out is not a major problem in the primary and lower secondary level. In the secondary level, however, the dropout rate was significant (9.6%).**
- 8. Physical access to most schools in the country was not a problem in most areas.**
- 9. The Net Enrolment Rate for primary level was 65.8 % (71.1 % for boys and 60% for girls). NER was highest in the Hills and lowest in the Terai. A big gap between boys and girls was found in the Mountains. There was not much difference in the urban and rural areas. The Ninth Plan has set a target of 90 % NER by the year 2002. The current NER suggests that it will be difficult to achieve the targeted goal within the next two years.**
- 10. Finally, this survey shows that the literacy rate and school attainments have increased a lot over the years. But there is still a long way to go to achieve the national goal of attaining universal quality education. The government is also committed to universal education as declared in Jomtien, Thailand. Although there have been enough physical inputs and thus no problem of accessibility, the challenge is to bring the disadvantaged children those who are still outside the school system into the regular formal school system and to retain them.**

References

- 1. Nepal Multiple Indicator Surveillance: Second Cycle, National Planning Commission Secretariat, Kathmandu, 1996**
- 2. Nepal Multiple Indicator Surveillance: Fifth Cycle, National Planning Commission Secretariat and CBS, Kathmandu, 1997**
- 3. Ninth Plan (1997-200), National Planning Commission Secretariat, 1998**

C h a p t e r 4

WATER SUPPLY

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Introduction and background

Planned development in water supply and sanitation was practised since the Fourth Plan (1970-1975). A separate sector institution – the Department of Drinking Water Supply and Sewerage - was established in 1972. The major thrust of the development of drinking water sector only came with the UN call of 1977. Water supply coverage by the end of the Sixth Plan (1975-1980) was 23% of the total population, 19% for rural and 73% for urban. The government increased its activities and announced various water supply and sanitation measures under the basic needs programme initiated in 1987. By the end of the Water Supply and Sanitation Decade (1990), the coverage substantially increased to 36% of the total population, with the coverage of rural and urban population at 33% and 67%, respectively (DWSS, 2000).

There are various sources of drinking water being used in the country. The coverage figures cited in this report basically refer to water sources such as piped water, shallow tubewells (handpumps), dugwells, protected springs and so forth. However, open ponds, irrigation canals, streams and other unprotected sources are also used to some extent in villages of remote areas.

However, the assessment of the decade activities and progress made during the sector review of 1991 showed major deficiencies, which are as listed below:

- **Insufficient community involvement**
- **Sanitation and health education accorded low priority and lacked integration with water supply programmes**
- **Poor planning and implementation process**
- **Human resource development accorded low priority**
- **Weak cost-sharing mechanism in capital, operation and maintenance**
- **Lack of management information system**

The above listed deficiencies were addressed by the strategies of the Eighth and Ninth Plans.

The current status of water supply coverage in the country is shown in Table 4.1.

Table 4.1: Status of water supply coverage; various documents - DWSS, 6th Plan - 9th Plan.

Planned period, end of year	Population covered by water supply		
	Rural, %	Urban, %	Nepal, %
By the end of 6th plan	19	73	23
By the end of decade (1990)	33	67	36
By the end of 8th plan(1992-1997)	61	62	61
By the end of 3-year period of 9th plan	-	-	67*

*Data on the coverage by other water sector development partners is not complete; thus, the Department does not have adequate information on the precise rural and urban population coverage. DWSS only includes data of two years' coverage of all partners and this fiscal year's progress.

The status of coverage for water supply by the year 1990 is shown in Table 4.2.

Table 4.2: Status of water supply coverage by development regions; various documents DWSS, 1990

Region	(Population in '000s)									
	Population			Population covered by water supply				Total		
	Rural	Urban	Total	Rural	Urban	Total	No.	%	No.	%
Eastern development region										
Hills	352	-	352	88.7	25.2	-	-	88.7	25.2	
Mid hills	1,132	29	1,161	296.4	26.18	26	89.66	322.4	27.77	
Terai	2,845	401	3,246	482.5	16.96	208	51.87	690.5	21.27	
Sub total	4,329	430	4,759	867.6	20.04	234	54.42	1,101.6	23.15	
Central development region										
Hills	447	-	447	198.2	44.34	-	-	198.2	44.34	
Mid hills	1,889	628	2,517	528.9	28.00	530.6	84.49	1,059.5	42.09	
Terai	2,804	308	3,112	1,250.6	44.6	151.9	49.32	1,402.5	45.77	
Sub total	5,140	936	6,076	1,977.7	38.48	682.5	72.72	2,660.2	43.78	
Western development region										
Hills	23	-	16	13.1	56.96	-	-	13.1	56.96	
Mid hills	2,400	107	2,507	898.1	37.42	80.4	75.14	978.5	39.03	
Terai	1,238	118	1,356	141.5	11.43	83.7	70.93	225.2	16.61	
Sub total	3,661	225	3,886	1,052.7	28.75	164.1	72.93	1,216.8	31.31	
Mid-western development region										
Hills	285	-	285	69.0	24.21	-	-	69	24.21	
Mid hills	1,175	26	1,201	379.7	32.31	24.5	94.23	404.2	33.66	
Terai	903	84	987	589.1	65.24	60.8	72.38	649.9	65.85	
Sub total	2,363	110	2,473	1,037.8	43.92	85.3	77.55	1,123.1	45.41	
Far-western development region										
Hills	330	-	330	101.5	30.76	-	-	101.5	30.76	
Mid hills	683	13	696	207.9	30.44	12.0	92.31	219.9	31.59	
Terai	628	97	720	507.7	81.49	18.3	18.87	526.0	73.06	
Sub total	1,636	110	1,746	817.1	49.94	30.3	27.55	847.4	48.53	
Grand total	17,129	1,811	18,940	5,752.9	33.59	1,196.2	66.05	6,949.1	36.69	

Description of relevant policy and programmes (GO and NGOs)

The government had made a commitment to provide drinking water to the entire population of the country by the end of the current Ninth Plan. It is not possible, however, to fulfil this national target with the limited time and resources and by

government efforts alone. As such, the government in its Eighth and Ninth Plan recognises the contributions that Non-Governmental Organisations (NGOs), the private sector and local bodies can make to national development. The Eighth Plan, had clearly specified that 60 % of the target in the drinking water sector and 54 % of the target in the sanitation sector will be achieved through the execution of programmes by NGOs, private sector entrepreneurs, companies and local bodies. To fulfil the Ninth Plan target of supplying water to all by 2002, NGOs, private sectors and local bodies will be given responsibilities.

Short-term and long-term targets

Since the Fourth Plan period of Nepal's development, consecutive five-year plans have been considered as short-term planning for the development of the water supply and sanitation sub-sector as a component of the social sector.

Short-term targets in water supply are shown in Table 4.3.

Table 4.3: Short-term targets and progress in water supply; various documents - DWSS, 6th Plan - 9th Plan.

Plan period	Coverage of population by water supply			Progress, %		
	Rural	Target, % Urban	Nepal	Rural	Urban	Nepal
6th	NA	NA	NA	19	73	23
7th	67	94	69	33	67	36
8th	72	77	72	61	62	61
9th	100	100	100	-	-	67*

Note: * indicates same as in table 4.1

So as to give continuity to the periodic five-year plans, it was essential to foresee the sector issues. Realising the necessity of a long-term vision to conduct a phase-wise programme for the appropriate development of water supply and sanitation facilities, a long-term (20-years) vision was put forward. The goal of the current Ninth Plan is based on that vision. In the context of the development of clean drinking water, the classification of the level of service is made on the basis of daily quantity of water consumption, quality of water available, accessibility, level of its reliability, and continuity of service.

To determine the level of the service of clean drinking water, five main indicators have been considered as the basis and are compiled in Table 4.4.

Table 4.4: Clean drinking water indicators; various documents - DWSS

Service level	Quantity (per person per day)	Quality	Accessibility	Hours (per day)	Continuity (months per year)
First Best	According to the WHO standard*	According to the WHO standard*	According to the WHO standard*	24	12
Second Good	According to national standard*	According to national standard*	Installed inside the house compound	24	12
Third Basic	20-45 liters	Processed, generally not injurious to health	Available up to a distance of 20 minutes	4	12

* During the preparation of the 20 years vision, the national water quality standard was not determined; that is being prepared now. In the absence of a national water quality standard the WHO standard has been used as a guideline for water quality.

The promotion of drinking water service level for the 20-year period starting from the Ninth Plan is shown in Table 4.5.

Results of previous findings

Few surveys and studies have been undertaken regarding the drinking water situation in the country. Those agencies and institutions who have conducted water and sanitation situation surveys and studies have mostly been used for their own institutional use. As such, except for data on the gross beneficiary population of piped water supply, very little information in details like source used, time taken to fetch water, methods of purification and so forth are readily available.

According to NFHS conducted by MOH (1991), nearly one-third (31%) of the households obtain their drinking water from a spring or kuwa. The sources of drinking water that follow are hand pump (27%), piped water (19%), and wells (12%). Piped water is reported as a common source of drinking water for a higher proportion of urban households (51%), whereas springs and kuwas are common for rural households (33%). Hand pump is the second common source of drinking water for both urban (39%) and rural (27%) households.

The Water and Energy Commission Secretariat (WECS) estimate of population coverage in drinking water for the Fiscal Year 1991/92 and successive years are shown in Table 4.6.

As of WECS estimate, Table 4.6 shows there has been a continual increase in the coverage of drinking water in the country.

Table 4.5: Drinking water service level in 20 years' period; various documents-DWSS

		(Population in '000s)							
Service level		By 2002		By 2007		By 2012		By 2017	
		%	Pop.	%	Pop.	%	Pop.	%	Pop.
First	Best	5	1,218	10	2,720	15	4,525	25	8,365
Second	Good	20	4,834	30	8,158	45	12,530	60	20,064
Third	Basic	75	18,276	60	16,317	40	12,064	15	5,018
Total		100	24,228	100	27,195	100	30,161	100	33,456

Table 4.6: Population coverage by drinking water supply, 1991/92 - 1999/00.

Fiscal Year	(Population in '000s)									
	Population			Population Coverage						Nepal
	Rural	Urban	Total	Rural	Rural	Urban	Urban	No.	%	%
1991-92	17.10	1.76	18.86	6.70	39.17	1.17	66.5	7.87	41.70	
1992-93	17.18	1.81	18.99	7.21	42.00	1.17	64.0	8.38	44.00	
1993-94	17.64	1.86	19.50	7.91	44.90	1.19	64.0	9.10	46.70	
1994-95	18.12	1.91	20.03	8.83	48.70	1.24	64.3	10.07	50.35	
1995-96	18.70	2.30	21.00	11.30	60.00	1.62	70.0	12.92	61.00	
1996-97	18.63	3.01	21.64	11.34	69.90	1.88	62.5	13.20	61.08	
1997-98	19.02	3.15	22.17	12.13	63.76	2.02	64.2	14.15	63.83	
1998-99	19.42	3.29	22.71	12.84	66.12	2.18	66.2	15.02	66.14	
1999-00	19.80	3.46	23.26	13.40	67.70	2.20	67.6	15.56	66.64	

Source: WECS, 2000; various documents

Note: The data in the Table 4.6 excludes population covered by private sources.

BCHIMES results analysis and discussion

Questions on the following topics have been asked in BCHIMES to present the details on the current status of drinking water supply in the country:

1. Source of drinking water
2. Water sufficiency in households
3. Trips of water made by children, by men and by women
4. Time spent by households to fetch water
5. Water Purification method
6. Health status - with respect to episodes of typhoid, dysentery, jaundice, diarrhoea, and cholera.

Source of drinking water

BCHIMES (2000) has categorised different sources of drinking water currently used by households living in all ecological belts. According to the survey, nearly half (48.3%) of the population in the country was served by piped water; 31.6 % was served by tubewells and boreholes, and 16.9 % by dugwells and springs. A small proportion of households (3.2 %) used other sources of drinking water. In this analysis safe drinking water includes pipe water, tube-well and bore-hole.

Taken together, 79.9% of the population obtain their water from piped systems, tubewells and boreholes. This is plausible because the national coverage of 66.64 % (Table 4.6) did not include private tubewells and similar private drinking water systems.

Table 4.7: Percentage distribution of households by main source of drinking water for different geographical areas.

Geographical Areas	Percentage of households by source of drinking water			
	Piped Water	Tube-well, Bore-hole	Dug-well, spring	Others
Ecological zone				
Terai	14.6	68.8	15.0	1.5
Hills	74.7	2.0	19.4	3.9
Mountains	79.2	-	12.9	7.9
Sub- Regions				
Eastern Terai	9.6	82.0	7.8	0.6
Central Terai	17.9	64.4	14.8	2.8
Western Terai	15.7	56.6	27.4	0.3
Mid-western Terai	24.2	48.5	24.8	2.5
Far-western Terai	7.0	82.3	10.2	0.5
E + C + W mountains	87.2	-	10.1	2.7
MW + FW mountains	67.8	-	16.9	15.3
Kathmandu Valley	83.0	6.8	9.9	0.4
Eastern Hills	75.3	5.1	16.0	3.5
Central Hills	74.5	3.0	20.5	2.1
C. Hills (ex Ktm Valley)	68.4	0.4	27.9	3.3
Western Hills	80.3	0.6	18.7	0.4
Mid-western Hills	67.3	0.1	22.3	10.4
Far-western Hills	66.7	0.4	19.6	13.4
Residence				
Urban	61.9	30.4	7.5	0.3
Rural	46.3	31.8	18.3	3.6
Nepal	48.3	31.6	16.9	3.2

Note: Same as in table 2.2

Information on the main source of drinking water for ecological belts and sub-regions are shown in Table 4.7.

Water sufficiency in households

In this survey, households were asked whether the drinking water available from main source was sufficient or not. The term “sufficiency” meant the quantity of water required for households mainly for drinking and cleaning of daily necessities. However, there is no measuring rod to assess the exact quantity of water required. It was assessed subjectively by the respondents as to what was adequate for them. Findings of the survey are shown in Table 4.8.

According to table 4.8, 90.9% of the households in the country reported that they have sufficient drinking water. The survey also found that more than 99% of the households in the Central and Eastern Terai had sufficient quantity of water available. This was not the case in Kathmandu Valley. Only 73.7% of households said they had sufficient water available. Also, only 75.2 % of households in the Far-western Hills said they had sufficient water.

Table 4.8: Percentage of households with sufficiency of drinking water for different geographical areas.

Geographical Areas	Households with drinking water	
	Sufficient	Not Sufficient
Ecological zone		
Terai	97.8	2.2
Hills	86.4	13.6
Mountains	79.7	20.3
Sub Regions		
Eastern Terai	99.6	0.4
Central Terai	99.7	0.3
Western Terai	96.6	3.4
Mid-western Terai	88.7	11.3
Far-western Terai	94.3	5.7
E+ C+ W Mountains	81.6	18.4
MW+ FW Mountains	76.9	23.1
Kathmandu Valley	73.7	26.3
Eastern Hills	95.5	4.5
Central Hills	84.9	15.1
Central Hills (ex Ktm Valley)	93.8	6.2
Western Hills	86.0	14.0
Mid-western Hills	85.2	14.8
Far-western Hills	75.2	24.8
Residence		
Urban	84.4	15.6
Rural	91.9	8.1
Nepal	90.9	9.1

Note: same as in table 2.2

Table 4.9: Percentage distribution of households by amount of time spent in fetching a trip of water for different geographical areas.

Geographical Area	HH (in %) by amount of time spent				
	0 min.	1-4 min.	5-10 min.	11-29 min.	30+ min.
Ecological Zone					
Terai	51.8	11.0	28.7	4.4	4.1
Hills	19.3	7.0	39.8	17.0	16.9
Mountains	21.4	10.8	37.9	14.6	15.1
Sub-Region					
Eastern Terai	62.7	9.9	24.6	2.5	0.3
Central Terai	45.9	13.7	28.7	4.0	7.7
Western Terai	41.2	11.1	38.3	6.8	2.6
Mid-western Terai	38.7	9.5	37.6	8.6	5.6
Far-western Terai	70.6	3.8	16.2	3.5	6.0
E+ C+ W Mountains	35.2	12.7	36.0	9.4	6.7
MW+ FW Mountains	1.8	8.2	40.8	22.2	27.1
Kathmandu Valley	68.5	7.5	21.5	2.3	0.1
Eastern Hills	22.1	8.5	39.0	17.3	13.1
Central Hills	34.7	8.5	33.5	9.7	13.6
Central Hills (ex Ktm Valley)	10.7	9.2	42.1	14.9	23.1

Table 4.9: Continued.

Geographical Area	HH (in %) by amount of time spent				
	0 min.	1-4 min.	5-10 min.	11-29 min.	30+ min.
Western Hills	12.7	6.3	40.7	25.2	14.9
Mid-western Hills	5.5	4.9	52.7	10.8	26.0
Far-western Hills	3.7	4.2	38.4	25.2	28.7
Residence					
Urban	68.1	7.3	20.4	3.4	0.8
Rural	29.0	9.3	36.8	12.3	12.6
Nepal	34	9.1	34.7	11.2	11.1

Note: Same as in table 2.2, min = minutes

Time spent in fetching water and average number of trips made
BCHIMES has gathered the information on time spent in fetching drinking water and number of trips of water made by the members of the household. Households by amount of time spent in fetching a trip of water from the main source, were classified in 4 categories and are presented in table 4.9.

Table 4.10: Percentage distribution of households by number of trips of water made by children in the past one day.

Geographical Areas	Households (%) by number of trips			
	0 trip	1 trip	2 trips	3 or more trips
Ecological Zone				
Terai	77.6	8.1	7.0	7.3
Hills	72.4	14.3	9.3	4.0
Mountains	78.4	11.2	7.3	3.2
Sub-Regions				
Eastern Terai	80.2	8.7	6.8	4.2
Central Terai	77.3	6.0	6.4	10.3
Western Terai	77.6	10.0	6.0	6.5
Mid-western Terai	72.0	11.0	10.9	6.1
Far-western Terai	80.8	7.5	7.0	4.6
E + C + W Mountains	80.2	8.0	7.9	4.0
MW + FW Mountains	76.6	14.2	6.8	2.4
Kathmandu Valley	78.3	5.3	13.1	3.3
Eastern Hills	71.7	12.3	11.2	4.8
Central Hills	83.0	8.9	5.5	2.6
Central Hills (ex Ktm Valley)	84.2	9.9	3.5	2.3
Western Hills	70.7	19.4	7.4	2.5
Mid-western Hills	60.7	15.7	15.8	7.9
Far-western Hills	72.6	11.9	10.9	4.6
Residence				
Urban	80.5	10.0	6.9	2.6
Rural	74.3	12.1	8.4	5.1
Nepal	74.7	12.0	8.3	5.0

Note: Same as in table 2.2.

DWSS has determined a comfortable time-norm of 20 minutes for fetching water. A study conducted by New Era set 10 minutes as the time-norm.

Those households who had water in their dwelling were regarded as '0' time to fetch water. The percentage of such households were 34 % (68 % for urban and 29 % for rural). This survey depicted that 43% of all Nepalese households spent less than 5 minutes to fetch a trip of water; 34.7 % spent 5 to 10 minutes; 11.2 % spent between 11 and 29 minutes, and 11.1 % spent more than 30 minutes.

The survey data also showed that 75.4 % of the households in urban areas spent less than 5 minutes on each trip to fetch water. In the Far-western Hills, only 7.7% of households could fetch water in less than 5 minutes.

Among subregions, the highest proportion of households (28.7%) in the Far-western Hills spent more than 30 minutes for a trip to fetch a trip of water. Second highest proportion (27.1%) of the households in the Far- and Mid-western Mountains also spent more than 30 minutes to fetch water.

The survey findings also indicated that 77.7 % of households spent less than 10 minutes to fetch water.

Trips of water made by household members

By children

Information on the number of trips of water made on the day preceding the survey by children less than 15 years of age was gathered and households by number of trips of water made by children are shown in Table 4.10.

Nationally, 25.3% of households responded that children made trips of water in the past one day. Households where children make 1, 2, and 3 or more trips of water trips were 12.0%, 8.3% and 5%, respectively.

Children in more than 80 % of households in the Eastern Terai, Far-western Terai, the Eastern, Central and Western Mountains, the Central hills, and urban areas make no trips of water. But only 60.7% of households in the Mid-western Hills reported that children make no trips for water the lowest of all sub-regions. The highest proportion of households (10.3%) where children make 3 or more trips of water was found in Central Terai.

By women

In Nepal, women are heavily involved in fetching water for their household activities. Findings of the survey are shown in Table 4.11.

Table 4.11: Percentage distribution of households by number of trips of water made by woman in the past one day.

Geographical Areas	Households (%) by number of trips of water				
	0 trip	1 trip	2 trips	3 trips	4 or more
Ecological Zone					
Terai	5.5	6.2	20.6	28.2	39.5
Hills	4.1	10.6	36.0	28.1	21.2
Mountains	8.2	15.8	33.0	23.5	19.5
Sub-Regions					
Eastern Terai	6.0	5.8	21.5	32.9	33.8
Central Terai	5.7	3.8	12.1	24.3	54.2
Western Terai	3.9	6.9	29.5	34.4	25.3
Mid-western Terai	6.9	10.7	28.3	23.3	30.7
Far-western Terai	4.2	15.4	34.0	23.4	22.9
E + C + W Mountains	7.8	10.1	26.8	26.4	28.9
MW + FW Mountains	8.5	21.2	38.8	20.9	10.6
Kathmandu Valley	3.2	2.4	23.2	27.8	43.5
Eastern Hills	4.3	5.5	24.3	38.4	27.5
Central Hills	2.7	2.3	38.0	29.0	28.0
Central Hills (ex Ktm Valley)	2.7	2.3	41.6	29.2	24.1
Western Hills	2.5	16.9	39.1	25.3	16.2
Mid-western Hills	9.3	16.8	40.2	23.4	10.3
Far-western Hills	2.8	7.9	32.3	27.2	29.8
Residence					
Urban	6.4	6.3	31.5	24.9	30.9
Rural	4.8	9.9	30.7	27.9	26.7
Nepal	4.9	9.7	30.7	27.7	27.0

Note: Same as in table 2.2

Table 4.12: Percentage distribution of households by number of trips of water made by men in the past one day.

Geographical Areas	Households (%) by number trips of water				
	0 trip	1 trip	2 trips	3 trips	4 or more
Ecological Zone					
Terai	57.6	12.7	15.9	8.2	5.6
Hills	55.2	22.0	14.9	4.2	3.8
Mountains	61.7	20.6	12.3	3.8	1.5
Sub Regions					
Eastern Terai	69.3	16.7	6.2	4.2	3.5
Central Terai	60.4	6.7	17.0	7.9	7.9
Western Terai	34.0	17.7	27.4	16.4	4.5
Mid-western Terai	57.1	14.3	17.0	6.6	5.2
Far western Terai	63.4	17.1	12.9	4.6	2.1
E + C + W mountains	70.9	10.9	11.7	4.4	2.1
MW + FW Mountains	53.1	29.9	12.8	3.3	1.9
Kathmandu Valley	85.3	3.7	5.3	2.1	3.7
Eastern Hills	56.8	21.5	13.0	6.7	2.0
Central Hills	60.3	17.5	15.6	4.6	2.0
Central Hills (ex Ktm Valley)	54.1	21.0	18.3	5.3	1.4
Western Hills	44.1	29.6	15.6	3.2	7.6
Mid-western Hills	69.2	15.3	11.9	2.2	1.3
Far-western Hills	51.8	20.6	18.9	5.4	3.2
Residence					
Urban	61.8	15.1	11.3	2.9	8.9
Rural	56.3	19.1	15.2	5.6	3.8
Nepal	56.6	18.8	15.0	5.4	4.1

Note: Same as in table 2.2

Table. 4.13: Average time (minute) taken to fetch water and average number of water trips made by households by different area.

Geographical Areas	Average time taken to fetch a trip of water (minute)	Average number of water trips made by household
Ecological Zone		
Terai	4.8	5.0
Hills	13.6	3.9
Mountain	13.2	3.6
Sub-Region		
Eastern Terai	2.5	4.1
Central Terai	6.0	6.0
Western Terai	5.2	4.9
M-Western Terai	7.4	4.6
F-Western Terai	5.0	3.7
E + C + W Mountains	7.2	4.1
F + MW Mountains	21.8	3.1
KTM Valley	2.0	4.5
Eastern Hills	12.0	4.3
Central Hills	10.1	4.0

Survey findings indicated that women in, 85.4 % of households made 2 or more trips of water in the past day. As many as 95.1% of households said that women make 1 or more trips for water. Of the sub regions, the burden of fetching water by women was highest in the Central Terai, followed in Kathmandu Valley.

By men

Findings of the survey are shown in Table 4.12.

The survey data indicated that male members in 56.6 % households made no trip of water. On average, 43.4 % of households responded that male members in their households made at least 1 trip for water. According to the survey, the percentage of households where male members are not involved in fetching water was highest (85.3 %) in Kathmandu Valley.

Average time taken and average number of trips made for water

To determine the amount of time required by households in Nepal to fetch water each day, information on time required for each water trip and the number of trips were combined and analysed.

The questionnaire solicited responses in minutes for the time required for each water trip and the exact number of trips made by each household. Households where the source of drinking water was within their own dwelling, i.e. required 0 minutes to fetch water, the question on water trips was not asked, and so were not included in this analysis. Also, households which did not fetch any water on the day before the survey (0.2%) were not included in the analysis.

The average time (in minutes) taken for a trip to fetch water and the average number of trips made by households by different areas is presented in Table 4.13.

Table 4.13 indicates that the average time taken for a trip to fetch water was 9.7 minutes and the average number of trips made by households was 4.3 trips. This works

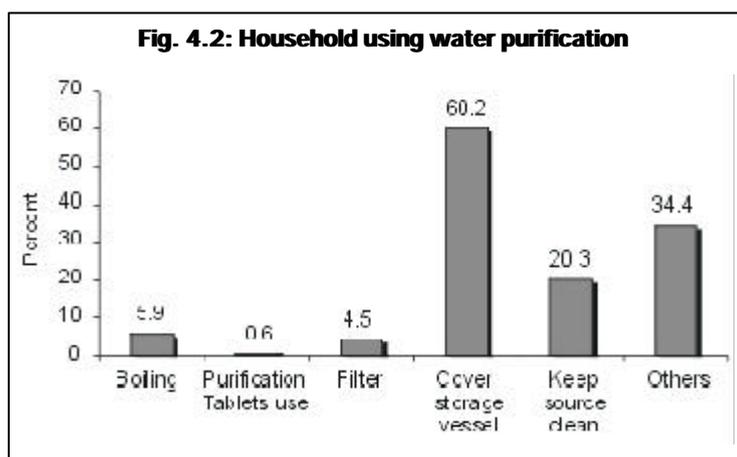
Table 4.13: Continued.

Geographical Areas	Average time taken to fetch a trip of water (minute)	Average number of water trips made by household
Central Hills (ex. KTM Valley)	15.8	3.9
Western Hills	13.5	3.9
Mid-WesternHills	20.0	3.4
Far-WesternHills	20.2	4.4
Residence		
Urban	2.4	4.2
Rural	10.7	4.3
Total	9.7	4.3

Table 4.14: Percentage distribution of households by type of water purification/ protection methods.

Geographical Areas	HH (%) by type of water purification/protection methods					
	Boil	Use of purifying tablets	Filter	Cover storage vessel	Keep source clean	Others
Ecological Zone						
Terai	3.4	1.0	3.1	59.9	25.1	36.2
Hills	8.1	0.3	6.4	63.6	16.1	30.8
Mountains	6.4	0.1	0.4	42.2	18.8	46.1
Sub Regions						
Eastern Terai	3.1	0.2	4.1	65.8	42.9	29.8
Central Terai	1.3	0.4	0.3	54.1	11.4	46.2
Western Terai	8.7	3.8	7.9	64.2	18.3	31.5
Mid-western Terai	5.1	2.4	3.7	58.0	15.2	36.2
Far-western Terai	0.9	0.2	0.9	54.4	36.8	25.7
E+ C+ W Mountains	10.4	0.1	0.7	47.9	23.9	36.6
MW+ FW Mountains	0.6	0.1	-	34.0	11.4	59.7
Kathmandu Valley	29.4	1.6	34.7	69.9	13.1	3.2
Eastern Hills	15.2	0.3	0.5	70.3	36.4	22.0
Central Hills	10.1	0.5	12.1	49.8	9.0	18.5
C. Hills (ex Ktm Valley)	1.8	-	2.6	62.0	10.6	39.0
Western Hills	4.3	-	4.4	69.0	13.3	27.6
Mid-western Hills	1.7	0.3	0.7	50.9	12.6	51.3
Far-western Hills	0.4	-	-	46.1	8.7	49.8
Residence						
Urban	20.5	0.7	27.1	70.5	13.3	14.9
Rural	3.7	0.6	1.1	58.7	21.3	37.3
Nepal	5.9	0.6	4.5	60.2	20.3	34.4

Note: Row totals may not add up to 100% because the households are allowed to answer upto three methods adopted. Same as in table 2.2



out to a national average of 41 minutes being spent a day to fetch water for the household. Among the eco-zones, more time is spent on fetching water in the Hills (53 minutes) and Mountains (47 minutes) than in the Terai (24 minutes).

Water purification and protection methods

The survey also gathered information on the purification methods practised by households to treat and protect water. The findings of the survey are shown in Table 4.14.

Nationally, it was found that 5.9 % of households boiled the water, only 0.6 % used water-purifying tablets, 4.5 % used domestic filters, and 60.2 % covered water storage vessels. Also, 20.3 % of households practised a rather simple but effective method of keeping the water sources clean.

Table 4.15: Percentage of households reporting water-borne diseases in their communities in the last one month.

Diseases	Households (%) reporting water borne disease in their communities			
	Terai	Hills	Mountains	Nepal
Diarrhoea	12.9	15.8	31.6	15.8
Dysentery	5.3	7.2	18.1	7.2
Jaundice	3.3	2.1	3.9	2.7
Typhoid	3.3	2.5	4.9	3.1
Cholera	1.2	1.0	3.0	1.2

As high as 29.4 % of households in Kathmandu Valley boil water. As many as 34.7 % of households use domestic filters in Kathmandu Valley, which is the highest among the sub regions. Purifying tablets are less used in Nepalese households.

Health status

On the basis of the current survey alone, it is difficult to know the present situation of prevailing water-borne diseases in the community. The prevalence of these diseases depends on water quality, food habits, and availability of medical facilities, seasons, knowledge of sanitation, and so forth. The present survey has come out with some proxy indicators on major water-borne diseases.

The findings are presented in Table 4.15.

Episodes of diarrhoea in the community

Table 4.15 shows that Nationally, 15.8 % of the households have said that the symptoms of this disease were noticed during the past month. The proportion was highest in the Mountains where 31.6% of households have noticed the symptoms of diarrhoea in the community in the last month.. The proportion of households who have noticed the symptom of this disease in the community in the Far and Mid-western Mountains, Far-western Terai and in Kathmandu Valley were 38.8%, 35.5% and 2% respectively.

Episodes of dysentery in the community

The occurrence of dysentery in their community during the past month was noticed by 18.1% of all households in mountains. As high as 29.2 % households in the Far- and Mid-western Mountains have reported the prevalence of this disease in the community, followed by 26.1% of households in the Far-western Terai. The lowest occurrence of dysentery in the community was reported by households in Kathmandu Valley (1.8%) and the Eastern Terai (1.9%).

Episodes of jaundice in the community

Just 2.7 % of all households in Nepal responded that there was a prevalence of jaundice in the community during the past month. Among sub regions, the households in the Far-western Terai reported the highest occurrence (12.9%), followed by those in the Far-western Hills (11.4%).

Episodes of typhoid in the community

Just 3.1 % of all households in Nepal reported that they have noticed this disease in the community during the past month. Again, 18.1% of households in the Far-western Terai reported the prevalence of this disease in the community.

Episodes of cholera in the community

Just 1.2 % of all households in Nepal reported that they had this disease in the community during the past month. Again, this disease in the community was reported by a higher percentage of households (8 %) in the Far-western Terai.

According to the survey data, the most common disease in the country was diarrhoea, followed by dysentery. The Far-western Terai appeared to be the most vulnerable sub-region in the country, with higher incidences of all of the listed water-borne diseases: diarrhoea, dysentery, cholera, jaundice, and typhoid. Among the ecological zones, the mountain zone reported the highest incidence of all diseases.

Policy implications and plan of action

On the basis of the facts and figures presented herein and also on the basis of contemporary documents reviewed, the rate of coverage of the population in water supply facility is very slow. The total yearly coverage of the population in water supply is almost equal to the net annual population growth. As such, the net uncovered population remains almost the same each year. Table 4.6 indicates that during the past five years (1995/96-1999/00), the national population coverage increased from 61% to only 66.64%. Apart from the government, a large number of agencies (both NGOs and INGOs) are involved in the implementation of water supply and sanitation programmes in the country. In order to fulfil the ever-growing need for water supply in the country, it is strongly recommended that an adequate budget be allocated to the water supply sector.

The scenario is more frustrating in urban locations. Table 4.6 shows that during the past nine years (1991/92-1999/00), the water supply coverage rate in urban locations remained almost stagnant. With the presence of additional townships in the country in this period, the pressure for urban water supply remains significant.

The BCHIMES data shows that 15% of households in the Terai used dugwells as one of the main sources of drinking water. The programme of dugwells in the Terai should be further encouraged, as well as construction to protect wells from contamination. In the Far- and Mid-western Hills and Far- and Mid-western Mountains, people are found to be using other sources of drinking water such as kuwa, irrigation channel, ponds and other unprotected sources. As such, gravity-fed water supply systems in these areas should be encouraged.

On the basis of the survey, it is clear that gravity-flow scheme programmes are to be launched particularly in the Far-western Hills and Mid-western Mountains of the country.

The survey data shows that water supply is not sufficient in Kathmandu Valley. The Melamchi Water Supply Project is being undertaken to fulfill the additional demand.

BCHIMES found that 90% of households in the Eastern Terai and Western Terai of the country were able to fetch a trip of water within 10 minutes. Thus, no intensive programme for water supply is needed in these areas. In Far- and Mid-western mountain of the country, however, more than 27% of households required 30 minutes to fetch a trip of water and thus, intensive programmes need to be launched.

In the country as a whole, the survey shows that 74.7% of households did not use children for fetching water. As compared to other sub regions, 10.3% of households in the central Terai reported that children in their households make more than 3 trips of water in the past one day. Thus, an awareness programme and legal provisions are required to eliminate child labour in the central terai sub region.

Nationally, 95.1% of households reported that women in their household make one or more trips to fetch water in the past one day. The condition of women, with regard to the fetching of water, was very bad in the Central and Eastern Terai, and the Central, Eastern and Far-western Hills, and in the Eastern, Central and Western Mountains. Appropriate gender awareness programmes to minimize women's work burden are thus required in the entire country.

Summary and Conclusion

Unlike past surveys, BCHIMES (2000) has produced a large number of relevant indicators with respect to the water supply situation in the country. These indicators will be extremely useful to policy-makers, planners, and researchers in the sector. The progress made in the water supply sector in the 90's, is encouraging. However, provision for an adequate budget has to be made to accelerate the water supply coverage rate. Side-by-side, effective software activities such as awareness creation, user education, and gender awareness programmes must be carried out extensively so that the fruit of development can be utilised in a more equitable and fair manner.

References

- 1. Departmental Documents: Long-term Vision; Department of Water Supply and Sewerage, Kathmandu**
- 2. Global Water Supply and Sanitation Assessment 2000, Water Supply and Sanitation Sector Questionnaire, 1999**
- 3. Nepal State of Sanitation Report 1999/2000 - National Sanitation Action Steering Committee Kathmandu, 2000**
- 4. National Water Supply Sector Policy (Policies and Strategies) - April 1998. HMG/Ministry of Housing and Physical Planning, Singha Durbar, Kathmandu**
- 5. Nepal Drinking Water Supply and Sanitation Sector Review and Development Plan (1991-2000), Volume-1 & 2, April 1991. HMG/MHPP/DWSS in collaboration with WHO and UNDP/World Bank Water and Sanitation Programme-Regional Water and Sanitation Group for South Asia**
- 6. Nepal National Sanitation Policy and Guidelines for Planning and Implementation of Sanitation Programme. July 1994. Environmental Sanitation Project/Department of Water Supply and Sewerage, MHPP/HMG**
- 7. Ninth Plan (1997-2002)-July, 1998. National Planning Commission Secretariat, Singha Durbar, Global Water Supply and Sanitation Assessment 2000, Water Supply and Sanitation Sector Questionnaire, 1999**
- 8. Policy on the Participation of NGOs in Water Supply and Sanitation Programme - 1996, Community and NGO Mobilisation Section, DWSS/MHPP/HMG**
- 9. Shrestha, G. P., 1998; Country Status Paper, Paper presented on Regional Consultation on New Approach to Sanitation; Pokhara, 17-19 November, 1998**
- 10. Water Resources Strategy Formulation Phase II study (Draft Report), Water and Energy Commission Secretariat, Singha Durbar, Kathmandu. May, 2000**

chapter 5
SANITATION

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Ram Mani Sharma

Introduction and background

Sanitation is defined as the service that safeguards health. Sanitation is mainly related to practice of hygiene and disposal of human waste excreta. Thus, sanitation should not be taken to merely mean latrine construction, but as a package of activities related to personal, household and environmental hygiene such as proper methods for the disposal of human excreta; personal hygiene; food hygiene; proper handling, storage and use of drinking water; proper solid and liquid waste disposal and proper animal waste disposal.

The state of sanitation during Rana rule was closely linked with the condition of housing and water supply. In those days, people of the urban as well as rural areas had to take water from a public source. In the urban areas of Kathmandu Valley, some occupational groups were hired by the government to collect the night soil from the households, dispose of the solid waste, and to keep the street clean (only in some areas). Most of the houses of the town did not have individual latrines and used public toilets. Some did have latrines in their houses but they were of poor condition and temporary structure. Because of these poor sanitation conditions, the government of those days installed some water supply facilities, provided house connections, and built community latrines. It also built very limited sewer and drainage systems in core areas of Kathmandu Valley and in other important towns.

Following the 1977 UN resolution, which called for the International Water Supply and Sanitation Decade (1981-90), the government increased its activities in the development of the water and sanitation sector in the 1980s. This decade-long programme coincided with the Sixth and Seventh Plan period. By 1990, the sanitation coverage (access to latrine only) was estimated to be 34% in the urban areas and 3% in the rural, with the country average at 6% of the total population. Subsequently, the Colombo Resolution of SAARC countries set a target of doubling the level of 6% by 1996 and increasing the coverage to 25% by 2001/2002, as shown in Table 5.1.

Table 5.1: Sanitation goals

Global goals for 2000	Area of residence	Sanitation coverage in 1992	Goal for sanitation coverage in	
			1996	2001/02
Universal access to sanitary means of excreta disposal	Rural	3%	12%	25%
	Urban	34%	50%	75%
	Total	6%	16%	31%

Source: Colombo Resolution

Note: Sanitation coverage is population (%) covered by toilet facilities.

To meet the target set by the Colombo Resolution, the government published Nepal National Policy Document and Implementation Guidelines for sanitation programmes in 1994 and increased its activities nationwide. But these sanitation programmes were implemented in an ad hoc manner and as an isolated component in different programmes of the health, education and water sectors. As a result, the estimated coverage for 1996/1997 reached 16% in the rural areas and 51% in the urban, with the country average of 20% as per the Ninth Plan document 1997. Although the Colombo Resolution set a target of 31% of the total population in sanitation coverage, giving importance to sanitation, the Ninth Plan period has set a target of 40% of the total population (36% in rural areas and 60% in urban areas).

Target and progress for latrine facilities is shown in Table 5.2.

Table 5.2: Target and progress of latrine facilities; DWSS Documents

Geographical Region	Sanitation coverage in 1992	Population (000)	Sanitation coverage		Population coverage in 1996/97 (000)	Sanitation coverage	
			Target for 1996 (Colombo Resolution)	Progress achieved in 1996/97		Target for 2001/02 (Colombo Resolution)	Target for 2001/02 (by the end of 9 th plan)
Rural	3%	513	12%	16%	2,900	25%	36%
Urban	34%	599	50%	51%	1,530	75%	60%
Country Average	6%	1,112	16%	20%	4,430	31%	40%

Note: Same as in table 5.1

Description of relevant policy/programmes (GO and NGOs)

Following the publication of the Drinking Water and Sanitation Sector Review Report in 1991, there has been substantial progress in the water supply sub-sector, but achievements in the sanitation sub-sector are lagging far behind. It becomes clear that the provision of safe water alone will not reduce the incidence of diarrhoeal diseases and other water-related diseases. Recognising this, the government in its Eighth Plan (1992-1997) initiated the implementation of integrated programmes for water and sanitation, including the involvement of user groups, provision of latrine construction, promotion of sanitation education and provision of sewerage and drainage system in the urban areas. In 1994, the then Ministry of Housing and Physical Planning (currently the Ministry of Physical Planning and Works) announced a new policy - "Nepal National Sanitation Policy Guidelines for Planning and Implementation of Sanitation Programme," which is under revision and at the stage of being approved by the government.

The policy aims at:

1. Bringing changes in people's sanitation behaviour and practices through health education, information and community mobilisation.
2. Ensuring community involvement, particularly women's involvement in sanitation promotion activities.
3. Encouraging participation of NGOs, voluntary organisations, and community-based organisations (CBOs).

The Ninth Plan also states that:

1. Awareness will be raised with regard to environmental sanitation among local communities as well as their level of understanding of health education. Sanitation will be promoted by its own initiatives.
2. A district profile will be prepared and used for long-term planning.
3. NGOs, local organisations, and private sector will be mobilised for the development of the sector.
4. Activities will be undertaken to develop middle-level human resources needed for

the development of the water supply and sanitation sector. Central Human Resources Development Unit (CHRDU) will be developed as a semi-autonomous organisation for human resources development for local user groups as well.

5. Implementation of water supply and sanitation programmes will be monitored regularly.

Similarly, some documents on sanitation such as the Nepal State of Sanitation Report (2000), Sanitation Indicators (2000), and the Sanitation Action Plan for five years were published by DWSS with financial support from UNICEF. These documents are serving as the basis for sanitation activities being carried out by several agencies such as GOs, NGOs, INGOs, private sectors and local bodies. Sanitation indicators will be used for monitoring and evaluation purposes, from the centre to the grassroots level, and five-year sanitation action plans will be used to develop sanitation activities nationwide through the involvement of various agencies.

Short-term and long-term targets

Since the Fourth Plan period of Nepal's development, consecutive five-year plans were considered as short-term planning for the development of the water supply and sanitation sub-sector as a component of the social sector. The short-term plan for sanitation is shown in Table 5.3

Table 5.3: Short-term plan for sanitation; DWSS Documents

Plan period	Sanitation Coverage					
	Rural	Target Urban	Total	Progress Rural	Urban	Total
7th	NA	NA	NA	3%	34%	6%
8th	NA	NA	13%	16%	51%	20%
9th	36%	60%	40%	--	--	25%

Note: Same as in table 5.1

It was deemed essential to foresee sector issues as giving continuity to the periodic plan of five years. Realising the necessity of a long-term vision to conduct a phase-wise programme for the appropriate development of water supply and sanitation facilities, a long-term (20-years) vision was put forward. The goal of the current Ninth Five-Year Plan is based on that vision.

As for the development of the sanitation sector with the limited resources and means available, programme activities will be conducted in the next 20 years as follow:

- Appropriate sewerage with treatment facilities will be built in all the densely populated urban areas.
- Appropriate management of waste materials and appropriate technology will be developed in all urban areas.
- Appropriate site sanitation systems will be promoted and provided to all rural areas of the country.

Key indicators

Sanitation incorporates both software and hardware facilities. Knowledge, attitude and practice are integral components of sanitation. However, owing to difficulties in quantifying these purely qualitative indicators, BCHIMES assumes the latrine coverage to be the main indicator of sanitation.

In this survey, the focus on the sanitation situation has been given to three different aspects, namely:

- Promotion and use of toilets,
- Practice of garbage disposal, and
- Practice of keeping water and foods clean.

The following indicators represent some of the aspects of the sanitation situation in the country:

1. Toilet facilities in the household,
2. Type of toilet facilities in the household,
3. Distance of toilet from household,
4. Distance of toilet from source of water,
5. Condition of toilets,
6. Cleanliness of toilets,
7. Place of defecation,
8. Reasons for not having toilet,
9. Place of disposal of children's stool,
10. Place of disposal of garbage,
11. Distance of disposal site from household,
12. Covering of water storage vessels, and
13. Covering of leftover foods.

Like the drinking water situation in the country, few national-level surveys, studies have been carried out for the sanitation situation. However, some agencies and institutions have conducted studies on the water and sanitation situation in some areas for their own institutional use. Studies such as "Diarrhoea, Water and Sanitation" in the Nepal Multiple Indicators Surveillance (1997), and the "Nepal State of Sanitation Report (2000)" are useful reference documents.

BCHIMES Result analysis and discussion

1. Toilet facilities in households

Findings of the survey are shown in Table 5.4 and Figure 5.1.

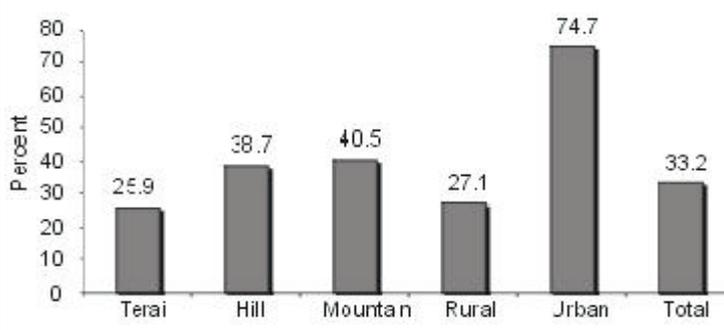
The survey shows that 33.2 % of the households in the country have their own toilets, which is 25.9 % in the Terai, 38.7 % in the Hills, and 40.5 % in the Mountains. The highest percentage of households with toilet facilities (57.4 %) is in the Eastern, Central and Western Mountains, whereas only 10.5% of households in the Far-western Hills have toilets. Similarly, 85.8 % of households in Kathmandu Valley have their own toilets; the figure is 74.7% for urban households as a whole.

Table 5.4: Percentage of households with toilet facilities, for geographical areas.

Geographical Areas	Households (%) with	
	Toilet of any type	Safe toilet
Ecological zone		
Terai	25.9	20.9
Hills	38.7	36.2
Mountains	40.5	37.0
Sub Regions		
Eastern Terai	38.1	28.7
Central Terai	14.3	12.8
Western Terai	32.6	30.8
Mid-western Terai	17.4	12.7
Far-western Terai	24.0	14.7
Eastern, Central & Western Mountains	57.4	55.9
Far and Mid-western Mountains	16.3	9.9
Kathmandu Valley	85.8	83.3
Eastern Hills	36.0	31.5
Central Hills	51.6	47.4
Central Hills (ex Ktm Valley)	27.5	21.9
Western Hills	44.9	44.9
Mid-western Hills	16.8	15.7
Far-western Hills	10.5	6.9
Residence		
Urban	74.7	72.5
Rural	27.1	23.1
Nepal	33.2	29.4

Note: 1. Modern flush system toilets, pan latrine connected to drainage, pan latrine not connected to drainage and closed pit latrine are considered as "safe toilets".
2. "Toilet of any type" includes "others" which are very temporary facilities just covered by curtains and the like.

Fig. 5.1: Households with any type of toilet facilities by geographical areas.



Nepal Multiple Indicator Surveillance, third cycle conducted by His Majesty's Government, National Planning Commission (1997), however, shows that household coverage with latrines is only 15 % nationally, 12 % in rural areas and 63 % in urban areas.

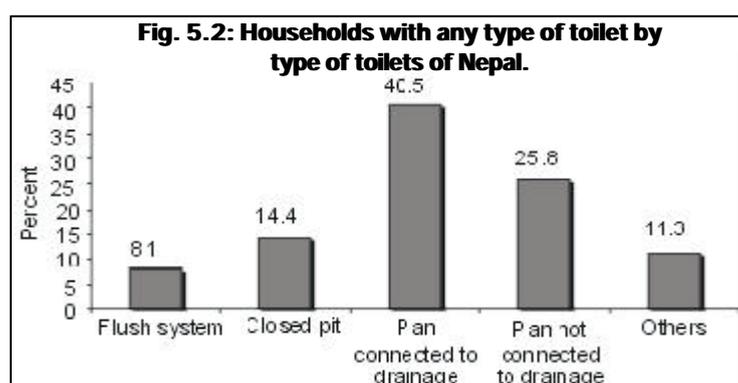
2. Use of toilet facility

In this survey, toilets are categorised into several types, such as: modern flush system, pan latrine connected to drainage, pan latrine not connected to drainage, closed pit latrine and others. Of the total households that have toilet facilities, the survey data (Table 5.5 and Figure 5.2) shows that 8.1% of households have flush system toilets, 14.4 % closed pits, 40.5% pan connected to drainage, 25.8 % pan not connected to drainage,

Table 5.5: Percentage distribution of households with any type of toilet by type of toilets.

Geographical Areas	HH (%) with any type of toilet				
	Flush system	Closed pit latrine	Pan connected to drainage	Pan not connected to drainage	Others
Ecological zone					
Terai	7.5	13.1	30.6	29.2	19.6
Hills	9.7	16.2	40.9	26.6	6.6
Mountains	1.0	8.3	73.1	8.8	8.7
Sub Regions					
Eastern Terai	7.5	4.6	33.1	30.3	24.5
Central Terai	4.5	38.8	30.4	15.6	10.7
Western Terai	7.8	9.9	24.2	52.3	5.8
Mid-western Terai	10.0	16.0	28.2	17.8	28.0
Far-western Terai	13.6	7.2	32.2	8.1	38.8
Eastern, Central, and Western Mountains	1.2	9.9	76.4	9.8	2.6
Far and Mid-western Mountains	-	-	56.5	3.8	39.7
Kathmandu Valley	21.2	46.0	6.5	23.3	2.9
Eastern Hills	-	0.3	82.7	4.3	12.7
Central Hills	17.8	37.3	11.5	24.9	8.5
C. Hills (ex Ktm Valley)	10.2	18.1	22.7	28.5	20.5
Western Hills	5.9	0.7	55.7	37.7	-
Mid-western Hills	2.2	5.9	51.0	34.1	6.7
Far-western Hills	5.5	1.2	42.5	16.2	34.6
Residence					
Urban	17.9	35.3	9.3	34.6	3.0
Rural	4.1	5.9	53.1	22.2	14.7
Nepal	8.1	14.4	40.5	25.8	11.3

Note: Row totals may not add up to 100 because of rounding off.



and 11.3 % households have other type of toilets.

3. Distance of toilet from household who have any type of toilet

In this survey, the distance of toilets from households is divided into four categories: within the vicinity of households, distance of less than 50 feet, distance of 50 to 100 feet, and more than 100 feet distance. The findings of the survey are shown in Table 5.6.

Table 5.6: Percentage distribution of households by distance of toilet from household.

Geographical Areas	Households (%) by distance of toilet from household			
	In vicinity	Less than 50 feet	50-100 feet	More than 100 feet
Ecological zone				
Terai	31.7	49.8	15.5	3.1
Hills	40.6	38.8	15.7	4.9
Mountains	10.0	53.5	31.1	5.3
Sub Regions				
Eastern Terai	15.2	56.9	22.6	5.2
Central Terai	35.2	56.7	8.0	-
Western Terai	74.9	21.4	3.2	0.4
Mid-western Terai	35.5	50.9	10.6	3.1
Far-western Terai	16.9	54.7	24.2	4.2
Eastern, Central, and Western Mountains	7.5	53.2	33.7	5.6
Far and Mid-western Mountains	22.7	55.3	18.2	3.8
Kathmandu Valley	95.6	4.2	0.2	-
Eastern Hills	3.0	43.6	37.7	15.6
Central Hills	80.8	15.8	2.8	0.6
Central Hills (ex Ktm Valley)	48.0	41.4	8.9	1.8
Western Hills	16.5	57.2	20.9	5.4
Mid-western Hills	11.2	67.4	17.7	3.7
Far-western Hills	11.1	63.6	17.3	8.0
Residence				
Urban	73.1	24.2	2.1	0.6
Rural	18.9	52.0	23.2	5.8
Nepal	34.5	44.1	17.2	4.3

Note: Same as in table 5.5

Nationally, 34.5 % of the households who have any type of toilet facilities had their toilets in the vicinity of their house and 44.1 % had toilets within a distance of 50 feet. Likewise, 17.2 % of households had toilets within a range of 50 to 100 feet, and only 4.3 % had toilets at a distance of more than 100 feet.

4. Distance of toilet from source of water

In this survey, the distance between the toilet and the source of water was divided into four categories: namely in the vicinity if toilet and water source are close together, less than 50 feet, 50 to 100 feet, and greater than 100 feet. The findings are shown in Table 5.7.

Nationally, 20.1 % of households, who have any type of toilets, had the source of water in the vicinity of the toilet and 28.7 % had toilets within a distance of 50 feet from the source of water. In the Terai, a majority (66.2 %) of such households had toilets

Table 5.7: Percentage distribution of households who have any type of toilets by distance of toilet from source of water.

Geographical Area	Household (%) by distance of toilet from source of water			
	In vicinity	Less than 50 feet	50-100 feet	More than 100 feet
Ecological zone				
Terai	16.5	49.7	22.6	11.3
Hills	25.2	17.7	18.1	39.0
Mountains	4.2	16.7	39.4	39.8

Table 5.7: Continued.

Geographical Area	Household (%) by distance of toilet from source of water			
	In vicinity	Less than 50 feet	50-100 feet	More than 100 feet
Sub Regions				
Eastern Terai	11.2	49.9	25.6	13.4
Central Terai	14.0	57.2	23.9	4.9
Western Terai	35.7	38.3	15.3	10.6
Mid-western Terai	16.0	47.7	17.7	18.5
Far-western Terai	10.1	60.2	21.5	8.3
Eastern, Central, and Western Mountains	4.2	15.2	40.5	40.0
Far and Mid-west mountains	3.8	24.2	33.3	38.6
Kathmandu Valley	76.8	12.8	5.2	5.2
Eastern Hills	0.7	15.7	28.3	55.3
Central Hills	54.4	18.5	13.6	13.5
Central Hills (ex Ktm Valley)	4.1	31.2	32.8	31.9
Western Hills	7.5	17.2	17.4	57.8
Mid-western Hills	-	15.3	26.1	58.6
Far-western Hills	-	31.2	19.5	49.3
Residence				
Urban	47.4	31.7	7.9	12.9
Rural	9.0	27.5	27.4	36.1
Nepal	20.1	28.7	21.8	29.4

Note: Same as in table 5.5

Table 5.8: Percentage distribution of household by condition of toilets.

Geographical Areas	Household (%) by condition of toilets	
	Working	Not working
Ecological zone		
Terai	98.0	2.0
Hills	98.7	1.3
Mountains	97.8	2.2
Sub Regions		
Eastern Terai	99.7	0.3
Central Terai	92.9	7.1
Western Terai	98.8	1.2
Mid-western Terai	97.8	2.2
Far-western Terai	98.0	2.0
Eastern, Central, and Western Mountains	97.6	2.4
Far and Mid-western Mountains	98.5	1.5
Kathmandu Valley	100.0	-
Eastern Hills	99.3	0.7
Central Hills	99.4	0.6
Central Hills (ex Ktm Valley)	97.8	2.2
Western Hills	98.3	1.7
Mid-western Hills	96.3	3.7
Far-western Hills	97.4	2.6
Residence		
Urban	99.9	0.1
Rural	97.7	2.3
Nepal	98.4	1.6

Note: Same as in table 5.5.

within a distance of 50 feet from the source of water. In the case of the hills, a large percentage of households (39%) had toilets at a distance of more than 100 feet from the source of water. As for households in the Mountains, only 20.9% had toilets within a distance of 50 feet from the source of water.

5. Condition of toilets

Information on condition of toilets were gathered in BCHIMES by observing the toilets. The responses are thus based on enumerator's personal judgement. The findings of the survey are shown in Table 5.8. Nationally, toilets in 98.4 % of all households who have any type of toilets were found in working condition.

6. Cleanliness of toilets

Information on cleanliness of toilets were also gathered by observing the toilets in households. Enumerators assessed subjectively as to whether they find the toilets clear or not. The findings are shown in Table 5.9. Nationally 69.1% of households who have any type of toilet, have clean toilets. Proportion of such households with clean toilets in the urban and rural areas were 93.2% and 59.3%, respectively.

7. Place of defecation

Households who did not have toilets were asked where they defecated. Six options for the usual place for defecation were given for this question. They are: own yard, bushed forest, own land outside yard, near water source, in the field, and others. Findings are shown in Table 5.10.

Nationally 33.1% of households who did not have toilets used bushed forest as the usual place for defecation. In the Terai, 31.4 % of such households reported defecating in the field. Only 2.4% of such households in Nepal reported defecating near the water sources.

8. Reasons for no toilets

Households who did not have toilets were asked why toilets were not built. Possible reasons were: no habit, foul smell, lack of space, importance of toilet not known, can't afford, and others.

The findings of the survey are shown in Table 5.11 and Figure 5.3.

Of the Nepalese households without toilets, a largest proportion (51.5%) of

Table 5.9: Percentage distribution of households by cleanliness of toilets.

Geographical Areas	Household (%) by cleanliness of toilets	
	Clean	Not clean
Ecological zone		
Terai	63.6	36.4
Hills	74.7	25.3
Mountains	56.5	43.5
Sub Regions		
Eastern Terai	50.2	49.8
Central Terai	68.1	31.9
Western Terai	89.6	10.4
Mid-western Terai	74.6	25.4
Far-western Terai	67.3	32.7
Eastern, Central, and Western Mountains	57.3	42.7
Far and Mid-western Mountains	52.3	47.7
Kathmandu Valley	93.5	6.5
Eastern Hills	47.1	52.9
Central Hills	84.9	15.1
Central Hills (ex Ktm Valley)	65.9	34.1
Western Hills	74.2	25.8
Mid-western Hills	76.4	23.6
Far-western Hills	74.2	25.8
Residence		
Urban	93.2	6.8
Rural	59.3	40.7
Nepal	69.1	30.9

Note: Same as in table 5.5

Table 5.10: Percentage distribution of households who did not have toilets by place of defecation.

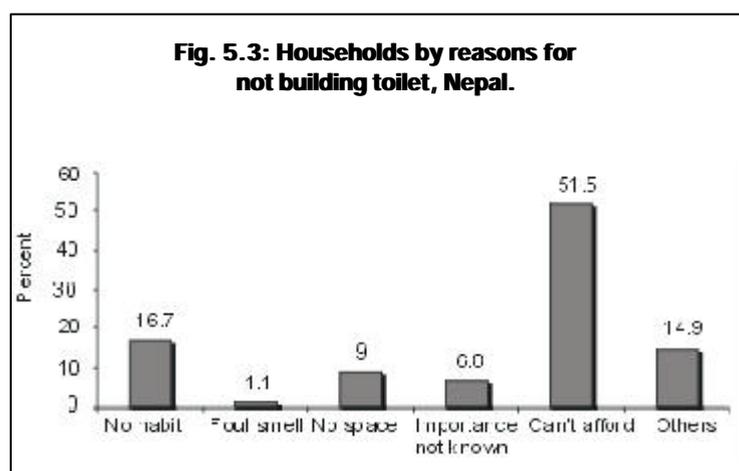
Geographical Areas	Household (%) by usual place of defecation					
	Own yard	Bushed forest	Own land outside	Near water source	In the field	Others
Ecological zone						
Terai	12.9	13.8	5.4	4.2	31.4	32.2
Hills	9.0	54.1	5.0	0.5	1.8	29.6
Mountains	8.0	38.5	4.6	0.7	8.1	40.2
Sub Regions						
Eastern Terai	9.8	12.0	3.7	1.2	20.7	52.6
Central Terai	6.5	8.6	8.7	8.2	40.1	27.8
Western Terai	26.3	15.5	0.9	0.6	42.1	14.6
Mid-western Terai	26.7	31.2	4.8	1.1	20.8	15.4
Far-western Terai	15.6	21.5	3.1	5.2	19.0	35.7
Eastern, Central, and Western Mountains	10.6	40.0	7.7	1.6	4.2	35.9
Far- and Mid-western Mountains	6.1	37.4	2.4	-	10.9	43.3
Eastern Hills	6.8	43.6	9.7	-	0.4	39.5
Central Hills	19.5	30.0	7.7	1.6	4.4	36.8
C. Hills (ex Ktm Valley)	19.6	31.8	7.5	1.7	3.5	35.8
Western Hills	3.2	81.0	2.0	-	0.7	13.0
Mid-western Hills	8.9	54.3	2.2	-	0.5	34.1
Far-western Hills	3.7	57.4	3.7	0.8	3.3	31.1
Residence						
Urban	6.2	19.5	2.0	8.6	17.0	46.7
Rural	11.1	33.8	5.3	2.0	16.8	30.9
Nepal	10.9	33.1	5.2	2.4	16.8	31.7

Note: Same as in table 5.5

Table 5.11: Percentage distribution of households who did not have toilets by reasons for not building toilet.

Geographical Area	Households (%) by reasons for not building toilet					
	No habit	Foul smell	No space	Importance not known	Can't afford	Others
Ecological zone						
Terai	11.6	1.0	11.3	6.0	60.9	9.1
Hills	20.4	0.9	5.7	7.7	44.0	21.4
Mountains	29.4	2.9	12.6	6.8	33.1	15.3
Sub Regions						
Eastern Terai	10.7	0.2	7.9	9.3	66.2	5.7
Central Terai	5.1	0.3	13.2	1.1	70.6	9.7
Western Terai	16.5	1.6	13.5	10.3	51.5	6.6
Mid-western Terai	27.8	2.6	9.8	13.3	36.8	9.7
Far-western Terai	17.5	5.3	12.8	2.6	39.5	22.3
Eastern, Central, and Western Mountains	19.2	1.0	7.9	2.2	52.8	16.9
Far and Mid-western Mountains	36.7	4.3	15.9	10.2	18.7	14.2
Kathmandu Valley	12.2	0.9	20.6	0.9	36.4	29.0
Eastern Hills	19.5	1.4	2.3	9.4	54.2	13.0
Central Hills	7.6	0.8	8.5	6.4	46.6	36.1
Central Hills (ex Ktm Valley)	6.9	0.8	6.9	0.3	48.0	37.0
Western Hills	17.2	0.5	5.1	0.9	54.8	21.6
Mid-western Hills	35.2	0.7	5.8	2.2	21.2	11.0
Far-western Hills	30.7	1.5	5.8	4.8	37.5	19.8
Residence						
Urban	7.1	2.1	11.9	0.5	66.5	11.9
Rural	17.2	1.1	8.8	7.1	50.8	15.0
Nepal	16.7	1.1	9.0	6.8	51.5	14.9

Note: Same as in table 5.5



households reported that they have no toilets because they can not afford it. Percentage of such households in the Terai, Hills, and Mountains were 60.9 %, 44.0 %, and 33.1 %, respectively.

9. Place of disposal of baby* stool
The survey has allowed for six options regarding disposal places of baby stool. They are: indiscriminate disposal outside house, throwing in pit, garbage disposal place, throwing in yard, dispose in latrine and others. Survey data has been analysed including households with no babies in their households.

In the findings shown in Table 5.12, as many as 24.1 % of households in the Terai said that they disposed of the baby stool in the yard. Nationally, as many as 10.4 % of households were found to dispose it indiscriminately outside the house, whereas the proportion in the Far- and Mid-western Mountains was 27.7 %.

* Refers, in this section, as child under 5 years of age, although different from its literal meaning

Table 5.12: Percentage distribution of households by disposal place of baby stool.

Geographical Areas	Household (%) by disposal of baby stool						
	Indiscriminate disposal outside house	Throw in pit	Throw in garbage disposal place	In the yard	Dispose in toilet	No baby in the household	Others
Ecological zone							
Terai	11.7	13.2	1.3	24.1	8.3	38.1	3.2
Hills	8.3	14.2	2.5	14.2	12.4	47.5	0.9
Mountains	15.3	12.6	2.4	8.4	11.1	50.1	0.1
Sub regions							
Eastern Terai	3.3	9.8	1.1	20.3	11.1	46.7	7.7
Central Terai	19.8	12.9	0.8	33.3	5.6	27.2	0.4
Western Terai	10.7	16.4	0.1	14.2	9.8	46.4	2.3
Mid-western Terai	10.5	16.7	4.6	24.3	6.3	37.3	0.3
Far-western Terai	18.2	20.3	2.7	19.6	6.6	31.7	0.9
Eastern, Central, and Western Mountains	6.6	11.4	2.3	7.4	17.8	54.4	0.1
Far- and Mid-western Mountains	27.7	14.3	2.6	9.9	1.5	44.0	0.1
Kathmandu Valley	1.1	3.1	1.0	1.1	33.7	59.8	0.3
Eastern Hills	8.1	11.1	1.6	13.4	8.7	53.9	3.2
Central Hills	7.3	15.3	1.1	19.2	23.3	33.6	0.2
Central Hills (ex Ktm Valley)	11.7	24.5	1.2	32.8	15.6	14.1	0.1
Western Hills	4.2	16.7	1.9	9.6	10.4	56.7	0.5
Mid-western Hills	10.2	11.5	7.9	14.7	4.5	50.6	0.6
Far-western Hills	24.7	11.8	2.0	14.5	2.1	44.6	0.4
Residence							
Urban	4.7	6.1	0.4	6.0	26.5	55.5	0.9
Rural	11.2	14.7	2.2	19.9	8.2	41.9	2.0
Nepal	10.4	13.7	2.0	18.1	10.5	43.6	1.8

Note: Same as in table 5.5

10. Place of disposal of garbage

The survey has kept the following options of place of disposal of garbage: dung disposal pit, garbage pit, alongside road, corner of household yard, indiscriminate disposal, refuse collected by municipality, and others.

As per the findings, a majority of the households in the Terai (29.9%) disposed of garbage in the dung disposal pit. A similar practice of disposal was reported for households in the Hills (44.4%) and the Mountains (43.8%), respectively. Nationally, 37.9 % of households followed this practice.

Table 5.13: Percentage distribution of households by place of garbage disposal.

Geographical Areas	Household (%) by place of garbage disposal						
	Dung disposal pit	Garbage pit	Along side Road	Corner of HH yard	Indiscriminate disposal	Refuse by Municip.	Others
Ecological zone							
Terai	29.9	18.3	11.3	17.6	7.3	0.2	15.3
Hills	44.4	19.8	0.9	14.6	4.9	8.0	7.5
Mountains	43.8	19.9	0.8	16.6	6.1	0.1	12.7
Sub Regions							
Eastern Terai	33.0	12.7	13.4	13.8	2.7	-	24.4
Central Terai	18.0	13.4	15.8	27.6	12.3	-	13.0

Table 5.13: Continued.

Geographical Areas	Household (%) by place of garbage disposal						
	Dung disposal pit	Garbage pit	Along side Road	Corner of HH yard	Indiscriminate disposal	Refuse by Municip.	Others
Western Terai	34.3	33.9	3.9	8.5	10.9	0.8	7.7
Mid-western Terai	51.2	21.3	2.9	10.8	2.9	1.3	9.6
Far western Terai	36.2	32.1	6.1	14.4	3.5	-	7.6
Eastern, Central, and western mountains	38.4	23.2	0.6	16.9	4.1	-	16.7
Far and Mid-western Mountains	51.5	15.1	1.1	16.3	9.0	0.1	6.9
Kathmandu Valley	16.1	20.3	1.1	8.9	1.3	40.9	11.4
Eastern Hills	32.3	18.1	1.0	21.0	12.5	-	15.0
Central Hills	31.1	16.3	0.9	19.3	3.3	22.1	7.0
C. Hills (ex Ktm Valley)	41.7	13.4	0.7	26.7	4.8	8.6	4.0
Western Hills	61.2	24.8	0.4	7.9	0.3	3.7	1.8
Mid-western Hills	59.1	14.2	1.1	10.5	4.4	0.1	10.6
Far-western Hills	29.8	28.1	2.3	16.1	13.8	-	9.9
Residence							
Urban	11.3	23.6	6.0	10.1	3.8	28.2	17.1
Rural	41.8	18.4	5.5	17.0	6.4	0.3	10.6
Nepal	37.9	19.1	5.5	16.1	6.1	3.9	11.4

Note: Same as in table 5.5

11. Distance of disposal place from household

The distance of garbage disposal places from households was also classified into four categories: in the vicinity of household, less than 50 feet, 50 to 100 feet, and more than 100 feet from the household. As indicated in Table 5.14, 33.9% of households in the Terai disposed garbage in the vicinity of the household, those disposing garbage at a

Table 5.14: Percentage distribution of households by distance of disposal places from household.

Geographical Areas	Households (%) by distance of disposal places from household			
	In the vicinity of HH	Less than 50 feet	50-100 feet	More than 100 feet
Ecological zone				
Terai	33.9	49.7	13.0	3.3
Hills	42.3	48.8	7.0	1.9
Mountains	42.4	43.1	11.4	3.0
Sub-Regions				
Eastern Terai	19.2	63.8	14.7	2.3
Central Terai	38.9	42.7	14.6	3.8
Western Terai	52.1	41.9	4.6	1.5
Mid-western Terai	31.7	45.5	15.1	7.8
Far-western Terai	44.8	40.6	12.3	2.4
Eastern, Central, and Western Mountains	18.5	61.9	17.6	2.0
Far- and Mid-western Mountains	76.7	16.3	2.6	4.4
Kathmandu Valley	63.5	20.4	11.3	4.8
Eastern Hills	35.3	50.1	13.0	1.6
Central Hills	59.9	32.5	5.8	1.8
Central Hills (ex Ktm Valley)	58.3	38.0	3.3	0.4
Western Hills	32.8	59.7	5.0	2.5
Mid-western Hills	28.8	63.2	6.6	1.4
Far-western Hills	62.8	28.5	6.5	2.2

Table 5.14: Continued.

Geographical Areas	Households (%) by distance of disposal places from household			
	In the vicinity of HH	Less than 50 feet	50-100 feet	More than 100 feet
Residence				
Urban	32.6	49.7	14.3	3.4
Rural	39.1	48.6	9.7	2.6
Nepal	38.4	48.7	10.2	2.6

Note: Same as in table 5.5

distance of less than 50 feet distance was 49.7%, indicating that 83.6 % of households disposed their wastes within a distance of 50 feet from their living space.

The situation in the Terai was also not very different from the country as a whole. Nationally, 38.4 % of households were found disposing garbage within the household vicinity. Almost half - 48.7 % - of households disposed it at a distance of less than 50 feet. Only a small 2.6% of households were found disposing garbage at a distance of more than 100 feet.

12. Water storage vessels in households

To assess how water is stored in the household, enumerators observed how water is kept in the households. Survey data indicated that approximately 5% of Nepalese households in the referenced day, did not have any water storage in their households. In addition, enumerators did not observe water storage in about 6% of households. Data analysis, in this section, has been done by including all households with or without water storage in households. Of the total households in respective areas, the households that cover vessels

Table 5.15: Percentage distribution of households by method of keeping water storage vessels.

Geographical Areas	Households (%) with water storage vessel			
	Covered	Not covered	Not seen	No water storage
Ecological zone				
Terai	50.4	30.4	9.1	10.0
Hills	64.5	31.8	3.1	0.6
Mountains	45.5	50.6	2.1	1.9
Sub-Regions				
Eastern Terai	48.5	31.3	5.9	14.3
Central Terai	38.9	34.2	17.8	9.0
Western Terai	67.8	26.3	2.6	3.3
Mid-western Terai	66.4	23.2	2.0	8.4
Far-western Terai	58.5	25.3	5.1	11.1
Eastern, Central, and Western Mountains	53.1	41.2	3.5	2.2
Far- and Mid-western Mountains	34.6	64.0	-	1.5
Kathmandu Valley	95.0	4.1	1.0	-
Eastern Hills	58.0	36.3	3.3	2.4
Central Hills	63.7	28.3	8.0	0.06
Central Hills (ex Ktm Valley)	41.4	45.6	12.9	0.1
Western Hills	81.0	19.0	-	-
Mid-western Hills	50.0	49.3	-	0.6
Far western Hills	44.4	53.2	1.2	1.3
Residence				
Urban	82.0	11.0	4.0	3.0
Rural	53.0	35.9	5.9	5.2
Nepal	56.7	32.7	5.7	4.9

Note: Same as in table 5.5

Table 5.16: Percentage distribution of households by method of keeping leftover food in households.

Geographical Areas	Households (%) with left-over foods			
	Covered	Not covered	Not seen	No leftover food
Ecological zone				
Terai	60.7	15.3	11.1	13.0
Hills	65.0	17.0	5.4	12.7
Mountains	51.3	18.9	3.4	26.4
Sub Regions				
Eastern Terai	55.7	18.7	8.7	16.9
Central Terai	57.9	14.9	20.3	6.9
Western Terai	68.8	12.1	3.1	16.0
Mid-western Terai	67.5	11.4	3.0	18.1
Far-western Terai	71.8	12.5	4.9	10.8
Eastern, Central, and Western Mountains	51.7	12.3	5.7	30.2
Far-and Mid-western Mountains	50.8	28.2	0.1	20.8
Kathmandu Valley	96.2	1.0	2.3	0.5
Eastern Hills	56.3	26.0	8.3	9.4
Central Hills	66.5	20.4	12.4	0.7
Central Hills (ex Ktm Valley)	45.4	34.1	19.6	1.0
Western Hills	75.3	9.6	-	15.1
Mid-western Hills	53.8	11.2	0.1	34.9
Far-western Hills	57.9	24.3	1.8	16.0
Residence				
Urban	78.2	7.3	5.6	8.9
Rural	59.6	17.7	8.1	14.7
Nepal	61.9	16.4	7.7	13.9

Note: Same as in table 5.5

storing water in the Terai, Hills, and Mountains were 50.4 %, 64.5 % and 45.5 %, respectively. Nationally, 56.7 % of households covered the stored water.

The survey findings are shown in Table 5.15.

13. Leftover food in households

Survey findings are shown in Table 5.16.

About 14% of all households in Nepal did not have any left over food during the referenced day, about 8% of households were not observed by enumerators. However the proportions of households that covered leftover food in the Terai, Hills and Mountains were 60.7 %, 65.0 % and 51.3%, respectively. Nationally, 61.9% of households were found covering leftover food.

Policy implications and plan of action

According to the Human Development Report (1998) of the United Nations Development Programme, some 2.5 billion people still lack access to sanitation. In many developing countries, the health status, especially of children and mothers, continues to be poor, as reflected in the high incidence of diarrhoea, malnutrition, maternal deaths and recurrence of water-borne diseases. Several studies on the impact of improved water and sanitation have highlighted the fact that health gains from improved sanitation, and improved hygiene practices in particular, are far higher than gains accruing from improved access to water alone.

The Nepal State of Sanitation Report (2000) affirmed that “while there has been some progress in improving sanitation conditions in Nepal, service levels are still very

low, progress has been slow, and more importantly, there has been inadequate emphasis on the qualitative aspects of sustainability of sanitation and its community acceptance.”

Over the last decade of population growth, with increasing settlement densities and urbanisation, the need to address sanitation issues has become crucial. At the same time, new trends have emerged in relation to demand orientation, decentralisation and a rethinking of appropriate technology. The emphasis is now on creating an enabling framework with wider stakeholder participation. Five principles that underlie the enabling framework from which the future strategy directions need to emerge are (Nepal State of Sanitation Report, 2000):

1. Demand orientation for sanitation,
2. Decentralisation,
3. Progressive technology choices,
4. Concept of a basic sanitation package, and
5. Enhancing and reprioritising public resources.

BCHIMES (2000) shows that the main reason for not building a toilet is due to a lack of sufficient funds. As such, friendlier latrine promotion packages have to be offered by the government. Such a package can include subsidies, grants, bank interest rebates on loans, and so forth.

Summary and Conclusion

Unlike the water supply coverage rate, the national rate of sanitation coverage is very slow. Consequently, more aggressive programmes and actions have to be carried out immediately through the collaboration of all sector agencies involved.

References

1. Departmental Documents: Long-term Vision; Department of Water Supply and Sewerage, Kathmandu
2. Global Water Supply and Sanitation Assessment 2000, Water Supply and Sanitation Sector Questionnaire, 1999
3. Nepal State of Sanitation Report 1999/2000- National Sanitation Action Steering Committee Kathmandu, 2000
4. National Water Supply Sector Policy (Policies and Strategies)-April 1998. HMG/Ministry of Housing and Physical Planning, Singha Durbar, Kathmandu
5. Nepal Drinking Water Supply and Sanitation Sector Review and Development Plan (1991-2000), Volume-1 & 2, April 1991. HMG/MHPP/DWSS in collaboration with WHO and UNDP/World Bank Water and Sanitation Programme-Regional Water and Sanitation Group for South Asia
6. Nepal National Sanitation Policy and Guidelines for Planning and Implementation of Sanitation Programme. July 1994. Environmental Sanitation Project/Department of Water Supply and Sewerage, MHPP/HMG
7. Ninth Plan (1997-2002)-July, 1998. National Planning Commission Secretariat, Singha Durbar; Global Water Supply and Sanitation Assessment 2000, Water Supply and Sanitation Sector Questionnaire, 1999
8. Policy on the Participation of NGOs in Water Supply and Sanitation Programme-1996, Community and NGO Mobilisation Section, DWSS/MHPP/HMG
9. Shrestha, G. P., 1998; Country Status Paper; Paper presented on Regional Consultation on New Approach to Sanitation; Pokhara, 17-19 November 1998
10. Water Resources Strategy Formulation Phase II study (Draft Report), Water and Energy Commission Secretariat, Singha Durbar, Kathmandu. May 2000
11. Diarrhoea, Water and Sanitation, Final Report, Nepal Multiple Indicator Surveillance (NMIS), Third cycle, National Planning Commission Secretariat, HMG, Kathmandu, June 1997

C h a p t e r 6

SALT IODISATION

Suresh Basnyat

Introduction

Deficiency of iodine in the diet is one of the most well known causes of preventable mental retardation and can lower the average intelligence quotient (IQ) of a population. Besides mental retardation, the deficiency of iodine can also cause goitre, nutritional stunting and cretinism. Salt iodisation is an effective, low-cost way of preventing iodine deficiency disorders (IDD). The Government of Nepal has been promoting the use of iodised salt to prevent the occurrence of these health problems with support from UNICEF/Nepal. It is recommended that adequately iodised salt contain an iodine level of more than 15ppm (parts per million) at the household level. In the BCHIMES survey a sample of salt from each household was tested to determine its iodine content by using a kit with a test solution and recheck solution. Of 10,302 households, information regarding salt iodisation was obtained from 10,240 households. The iodine content in salt used by households was grouped in three categories, i.e., no iodine at all, less than 15 ppm, and more than 15 ppm.

Use of iodised salt

Table 6.1 presents the percentage distribution of households consuming different levels of iodised salt by residence, ecological zone, and sub-region. Nationally 91% of households used iodised salt, regardless of level of iodine content. But the percentage of households using adequately iodised salt (iodine content greater than 15ppm) was only about 63%. Almost one out of 11 households used salt with no iodine at all. The urban/rural difference in using adequately iodised salt was very high. About 87% of urban households were using adequately iodised salt whereas the figure for rural households was only 59%. Among ecological zones, the distribution of households using adequately iodised salt was not as expected. About 70% of households in the Mountain areas were found using adequately iodised salt whereas this figure it was approximately 62% in the Hills and the Terai. The high coverage in mountain region could be due to the fact that Salt Trading Corporation is providing the iodized salt in subsidized rate in most of the mountain districts in recent years. Of the sub-regions, the percentage of households using adequately iodised salt was highest in the Eastern, Central and Western Mountains (81.2%), followed by the Western Terai (75.3%), and lowest in the Far-western Terai (30.6 %). About 96 % of households in Kathmandu Valley were using adequately iodised salt.

Table 6.1 Percentage distribution of households consuming different levels of iodised salt by residence, ecological zone and sub-region.

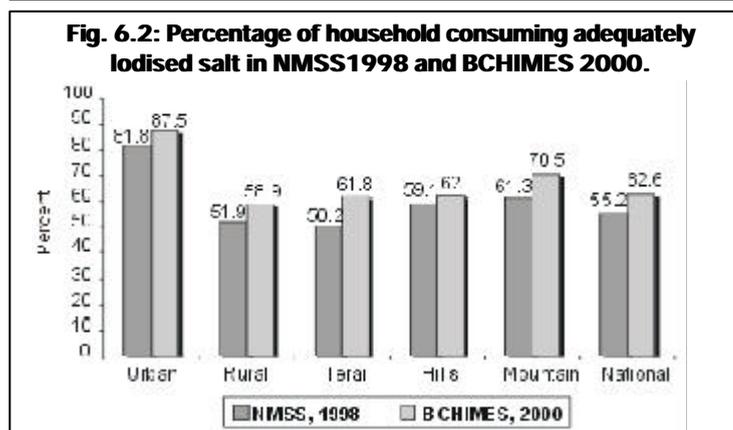
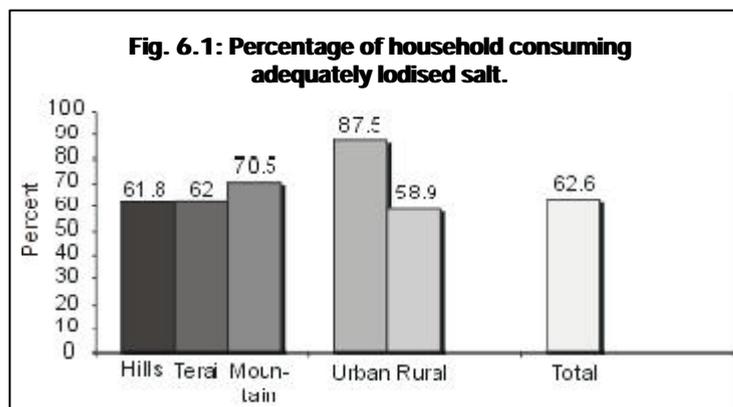
Geographical Areas	Households (%) by use of salt with content of iodine			Number of Households
	None	Less than 15ppm	Greater than 15ppm	
Residence				
Urban	2.5	10.0	87.5	1,307
Rural	10.3	30.7	58.9	8,933
Ecological Zone				
Terai	9.1	29.1	61.8	4,553
Hill	9.1	28.9	62.0	4,859
Mountain	11.7	17.8	70.5	828
Sub-Region				
Eastern Terai	5.5	30.2	64.3	1,525
Central Terai	13.6	24.3	62.1	1,602
Western Terai	0.5	24.1	75.3	670
Mid-western Terai	10.5	36.0	53.5	440
Far-western Terai	19.9	49.5	30.6	316
E + C + W Mountains	7.5	11.4	81.2	488
F + MW Mountains	17.8	27.1	55.1	340
Eastern Hills	7.0	30.2	62.9	790
Central Hills	15.0	23.3	61.7	1,510
Western Hills	0.5	24.3	75.2	1,463
Mid-western Hills	12.3	42.2	45.4	716
Far-western Hills	17.1	40.8	42.2	380
Kathmandu Valley	0	4.4	95.6	626
C. Hills (ex Ktm Valley)	25.6	36.7	37.7	88
Nepal	9.3	28.1	62.6	10,240

Note: Row totals may not add up to 100 because of rounding.

Information on the iodine content in salt used by households was also collected in the Nepal Micronutrient Status Survey, 1998. It was found that the use of adequately iodised salt (> 15ppm) was 52.2 % at the national level (NMSS, 1998). The graphical presentation of the households who use adequately iodised salt by different areas in NMSS, 1998 and BCHIMES, 2000 are presented in Figure 6.2.

Proportion of households who use adequately iodised salt had increased from 55.2 % to 62.6 % at the national level. Similar pattern of increment was also observed in urban/rural and ecological zones.

Table 6.2 presents the percentage distribution of households consuming different levels of iodised salt by ethnicity and religion of the household head. By ethnicity, the percentage of households using adequately iodised salt was found



highest among the Newars (81.2%), followed by other mountain ethnic groups (80.7%), and was lowest among the Tharus (42.7 %). Similarly, by religion the percentage of households using adequately iodised salt was highest among Buddhists (68.2 %), followed by Hindus (62.7 %), and was lowest among other religious groups (46.8 %).

Table 6.3 presents the distribution of households consuming different levels of iodised salt by selected characteristics of household heads. Although slightly more female-headed

Table 6.2 Percentage distribution of households consuming different levels of iodised salt by ethnicity and religion of household heads.

Background characteristics of HH Head	Households (%) by use of salt with content of iodine			Number of Households
	None	Less than 15ppm	Greater than 15ppm	
Ethnicity				
Brahmin	9.1	22.4	68.5	1,469
Chhetri	11.0	29.8	59.2	2,174
Newar	5.6	13.2	81.2	739
Gurung/Ghale	5.4	16.7	77.9	223
Magar	6.5	36.5	56.9	819
Rai/Limbu	8.4	28.3	63.2	544
Tamang/Sherpa	12.2	35.8	52.0	550
Muslim	14.8	32.7	52.5	298
Tharu	18.6	38.7	42.7	483
Yadav	4.0	25.1	70.9	222
Others Hills	11.2	40.2	48.6	1,036
Others Terai	6.1	21.7	72.1	1,606
Others Mountain	5.9	13.4	80.7	77
Religion				
Hindu	9.4	27.9	62.7	9,016
Buddhist	5.4	26.4	68.2	770
Muslim	14.8	32.7	52.6	299
Others	15.6	37.5	46.8	155
Nepal	9.3	28.1	62.6	10,240

Note: Same as in table 6.1

Table 6.3 Percentage distribution of households consuming different levels of iodised salt by sex, literacy status and education level of household heads.

Background Characteristics of Household head	Households (%) by use of salt with content of iodine			Number of Households
	None	Less than 15 ppm	Greater than 15 ppm	
Sex				
Male	9.4	28.2	62.4	9,308
Female	8.3	27.5	64.2	932
Literacy Status				
Literate	9.2	25.7	65.2	5,327
Illiterate	9.4	30.7	59.9	4,913
Educational Level				
None	10.1	30.0	59.9	6,649
Primary	10.3	31.6	58.2	1,393
Secondary & above	6.4	20.0	73.6	2,198
Nepal	9.3	28.1	62.6	10,240

Note: Same as in table 6.1

households were found to be using salt containing higher levels of iodine than male-headed salt, this difference was not statistically significant. About 64% of female-headed households were found using adequately iodised salt whereas this figure was 62% in male-headed households. Similarly, the use of adequately iodised salt was higher (65.2 %) among literate household heads than in households with illiterate heads (59.9 %). This difference was found to be statistically significant. Among household heads having secondary education and above, the percentage of households using adequate iodised salt was 74%.

Type of salt used

Table 6.4 presents the percentage distribution of households by the type of salt used and by geographical areas. Seventy-one percent of urban households used branded salt, whereas the figure for rural areas was only 16%. Branded salt refers to salt having brand names such as Ayo Salt, Bhanu Salt, Shakti Salt and Tata Salt. The most common salt used by rural households was crystal salt Foda. The proportion of households using branded salt in all belts of ecological zone was almost the same. Across the sub-regions the percentage of households using branded salt ranges from 7% in the Eastern Hills to 41.2 % in the Central Hills. In Kathmandu Valley, the percentage of households using branded salt was very high (79 %) as compared to other sub-regions. Crystal Foda was the mostly used by households across the sub-regions except in the Eastern Terai and the Eastern/Central/Western Mountains. Of the households in Eastern Terai, a large proportion of them used unbranded powdered salt, whereas crushed salt was mostly used by the households in the Eastern/Central/Western Mountains.

Table 6.4 Percentage of households by type of salt used by residence, ecological zone and sub-region.

Geographical Areas	Households (%) by type of salt used					No. of HHs
	Branded Salt	Unbranded Salt Powder	Crushed Salt	Crystal Salt Foda	Others	
Residence						
Urban	70.9	8.7	3.4	15.0	2.0	1,307
Rural	16.1	14.4	5.4	57.2	6.9	8,933
Ecological Zone						
Terai	22.2	21.5	3.9	41.7	10.6	4,553
Hills	23.8	6.5	2.4	65.4	1.9	4,859
Mountains	24.2	12.9	27.8	27.3	7.8	828
Sub-Region						
Eastern Terai	27.6	54.2	0.0	15.8	2.4	1,525
Central Terai	14.9	9.1	10.5	40.1	25.4	1,602
Western Terai	34.9	0	0.7	63.5	0.9	670
Mid-western Terai	16.5	0	1.4	79.4	2.7	440
Far-western Terai	13.1	0	0.5	77.8	8.6	316
E+ C+ W Mountains	13.7	21.8	46.2	10.0	8.3	488
F+ MW Mountains	39.4	0	1.2	52.2	7.2	340
Eastern Hills	6.8	40.3	0.0	51.8	1.2	790
Central Hills	41.2	0	5.6	52.8	0.3	1,510
Western Hills	23.2	0	0.3	71.8	4.7	1,463
Mid-western Hills	15.5	0	2.9	81.1	0.4	716
Far-western Hills	7.5	0	1.9	89.3	1.3	380
Kathmandu Valley	13.7	0	10.4	10.1	0.1	626
C. Hill (ex Ktm Valley)	13.7	0	2.2	83.5	0.5	884
Nepal	23.1	13.7	5.2	51.8	6.3	10,240

Note: Same as in table 6.1

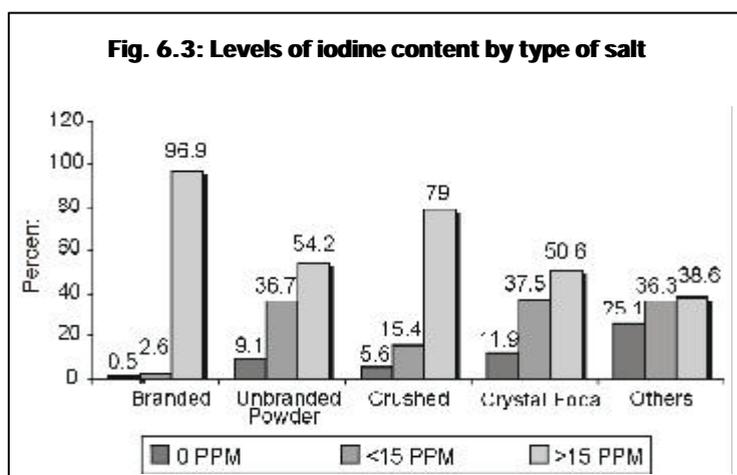
Iodine content by type of salt

In the BCHIMES survey, the iodine content in salt used by households was tested and information on the brand of the salt was collected. Nationally, more than half (51.8%) of the households were using crystal salt Foda (Table 6.4). Out of samples of crystal salt Foda from 5227 households, 51 % of them was found with iodine content greater than 15ppm. As expected, adequately iodine content was found highest (97 %) in branded salt (Ayo Salt, Tata Salt, Shakti Salt, and Bhanu Salt). Of all types of salt except branded salt, iodine content greater than 15ppm was found highest in crushed salt (79%). But it should be noted that the level of iodine content depends on how long ago the salt was bought and how it was stored. The different levels of iodine content by type of salt are presented in Table 6.5.

Table 6.5 Iodine content by type of salt.

Type of Salt	Households (%) by type of salt used with content of iodine			Number of Household
	Zero ppm	Less than 15ppm	Greater than 15ppm	
Branded salt	0.5	2.6	96.9	2,335
Unbranded powder Salt	9.1	36.7	54.2	1,381
Crushed salt	5.6	15.4	79.0	521
Crystal salt Foda	11.9	37.5	50.6	5,227
Others	25.1	36.3	38.6	397
All types	9.4	28.1	62.6	10,093

Note: Same as in table 6.1



If the iodine content was zero ppm or less than 15ppm in the salt used by households, they were asked how many months before the salt was bought. The responses of households were as follows:

Responses given by HH

Salt bought before	Percent	Number
Less than one month	28.6	1,086
One to two months	26.7	1,013
Two to five months	33.0	1,251
Six months or more	11.7	443

Similarly, if the iodine content was zero ppm or less than 15 ppm, households were asked why they were buying the type of salt they were using. The responses were as follow:

Summary and Conclusion

In this survey, it was found that (the use of adequately iodised salt is increasing over the years.) At the national level 63 % of household were using adequately iodised salt (which is still low). The urban/rural difference in the use of adequately iodised salt is very high (87% vs 59%). So, awareness

programme in the use of adequately iodised salt should be focused on rural areas. The survey also showed that the most common salt for the Nepalese household is crystal foda, of which about only 51 % were adequately iodised. In Far Western Terai, Mid Western Hill and Far Western Hill the coverage of adequately iodised salt was much lower than the national average. So, some special programmes should be launched focusing in these areas.

Responses given by Households

Reasons	Percent	Number
Only this is available	25.9	980
Cheaper than others	52.7	1,994
Preference for the brand	13.1	495
Others	8.3	314

chapter 7

FAMILY PLANNING

Gokarna Regmi

Introduction

The Family Planning Programme in Nepal was started by Nepal Family Planning Association in 1959. Initially, the services were centred on Kathmandu Valley and only limited services were available. His Majesty's Government began providing family planning services integrated with MCH activities in 1965 and, in 1968, the government established a semi-autonomous Family Planning and MCH Board under whose umbrella Nepal Family Planning and Maternal Child Health Project was established.

The Nepal Family Planning and Maternal Child Health Project (NFP and MCH Project) established clinics in district health institutions all around the country. It was soon realised that the expansion of family planning services would be limited if the services were restricted to health institutions. Thus, various experiments followed, and the concept of field-based health workers was developed.

Table 7.1: Knowledge of family planning by background variables.

Background Variable	Currently married women aged 15-49 years		Number
	Who had heard of FP (%)	Who had not heard of FP (%)	
Age in Categories			
Less than 25	99.5	0.5	2,786
25-34	99.7	0.3	3,568
35+	99.9	0.1	3,071
Residence			
Urban	99.7	0.3	1,139
Rural	99.7	0.3	8,286
Ecological Zone			
Mountains	99.9	0.1	740
Hills	99.6	0.4	4,313
Terai	99.8	0.2	4,371

The family planning services were integrated with health services and are available at all the government health institutions. In the early 1990s, the government decided to operate sub-health posts at the VDC-level, to ensure that each VDC would have at least one health institution. As a result, the accessibility of family planning services has greatly increased. There has also been a tremendous increase in the number of INGOs and NGOs providing basic family planning services in Nepal. The BCHIMES survey also solicited information on contraceptive use, which follow in this chapter.

'Heard of family planning'
Table 7.1 provides information on whether or not currently married women of reproductive age have heard of

contraception. As indicated, virtually all such women in Nepal have heard of family planning (99.7%), a slight increase over 98.4% found in the 1996 Family Health Survey.

Data regarding the knowledge of contraception has been provided by selected variables, but the high level of knowledge makes differentials hardly noticeable.

Table 7.2: Frequency distribution of knowledge of specific methods of contraception (multiple responses).

Methods	Women (%) who know the methods of contraception
Pills	69.3
Condom	53.4
Depo-Provera	78.1
IUD	31.3
Norplant	49.2
Female sterilisation	94.2
Vasectomy	79.6
Foaming tabs/jelly/foams	36.1
No sexual intercourse in unsafe period	33.6

Table 7.2 provides the frequency distribution of knowledge of specific methods of contraception. As indicated, female sterilisation was the most commonly

Table 7.3: Frequency distribution of source of FP knowledge (multiple responses)

Source	Women (%) by source of FP knowledge
Newspapers	10.8
Poster/pamphlets	5.1
Signboards	7.4
Radio	47.4
TV	16.5
Health workers	25.4
TBA	11.9
FCHV	15.9
NGO FP workers	10.8
Husband	22.2
Friends	30.7
Neighbours	22.4
Others	3.0

1. Unless and otherwise stated "women" in all sections of chapter 7 from table 7.2 onwards, refer to currently married women of reproductive age who have heard of contraception.
2. Total percent exceed 100 because of multiple responses.

Table 7.1: Continued.

Background Variable	Currently married women aged 15-49 years		Number
	Who had heard of FP (%)	Who had not heard of FP (%)	
Sub Region			
Eastern Terai	99.9	0.1	1,414
Central Terai	99.6	0.4	1,526
Western Terai	99.9	0.1	634
Mid-western Terai	99.9	0.1	468
Far-western Terai	99.5	0.5	330
Eastern Hills	99.7	0.3	676
Central Hills	100.0	0	1,350
Central Hills (Ex. Ktm Valley)	100.0	0	795
Western Hills	99.0	1.0	1,162
Mid-western Hills	99.8	0.2	750
Far-Western Hills	99.3	0.7	375
E + C + W Mountains	100.0	0	392
MW + FW Mountains	99.9	0.1	348
Kathmandu Valley	100.0	0	555
Educational status			
None	100.0	0	7,105
Primary	97.2	2.8	840
Secondary and above	100.0	0	1,406
Literacy			
Illiterate	99.6	0.4	6,634
Literate	100.0	0	2,791
Nepal	99.7	0.3	9,425

Note: 1. Row total may not add up to 100 because of rounding.
2. E= Eastern, C= Central, W= Western, MW= Mid-western, FW= Far-western

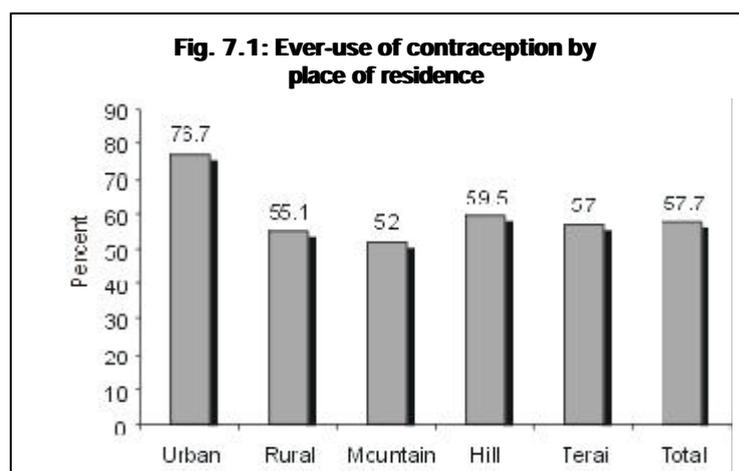
known method among Nepalese women of reproductive age. This was followed by male sterilisation and Depo-Provera, with 78 % of women reporting they have heard of the method. Other methods known to them were condom (53%), Norplant (49%), IUD (31%), foaming tabs/jelly (36%) and no sexual intercourse in unsafe period (33.6%). During the last seven years, as indicated by service statistics as well as the survey data, Depo-Provera has been gaining popularity in Nepal. This was also reflected in the relatively high proportion of currently married women of reproductive age having heard about it.

Women were also asked to mention the source of their family planning information. Table 7.3 indicates that the most commonly mentioned source of family

Table 7.4A: Ever-use of family planning by background variables.

Background Variable	Women (%) by FP ever used		
	Yes	No	No. of women
Age in Categories			
Less than 25	51.7	48.3	2,786
25-34	60.9	39.1	3,568
35+	59.5	40.5	3,071
Residence			
Urban	76.7	23.3	1,139
Rural	55.1	44.9	8,286
Ecological Zone			
Mountains	52.0	48.0	740
Hills	59.5	40.5	4,313
Terai	57.0	43.0	4,371
Sub Region			
Eastern Terai	60.2	39.8	1,414
Central Terai	51.8	48.2	1,526
Western Terai	58.5	41.5	634
Mid-western Terai	58.8	41.2	468
Far-western Terai	61.4	38.6	330
Eastern Hills	57.1	42.9	676
Central Hills	70.2	29.8	1,350
Central Hills (ex Ktm Valley)	58.8	41.2	795
Western Hills	56.2	43.8	1,162
Mid-western Hills	56.8	43.2	750
Far-western Hills	40.7	59.3	375
E + C + W Mountains	58.5	41.5	392
MW + FW Mountains	44.6	55.4	348
Kathmandu Valley	86.7	13.3	555
Educational status			
None	53.7	46.3	7,105
Primary	66.9	31.1	8,40
Secondary and above	72.8	27.2	1,406
Literacy			
Illiterate	52.2	47.8	6,633
Literate	71.0	29.0	2,791
Nepal	57.7	42.3	9,425

Notes: Row totals may not add up to 100 because of rounding off.
Abbreviations same as in table 7.1



planning information was radio (47%), followed by friends (31%) and health workers (25%). Husbands and Neighbours accounted for 22%. This indicates that if a friend or neighbour has heard of or used a family planning method, he or she passes on this information to neighbours and friends. Television as a source of family planning information accounted for only 16% because very few Nepali households have television.

Ever-use of contraception

Before we discuss the use and ever use of contraception, it would be worthwhile to provide data on the use of family planning from the service statistics of the Ministry of Health. Table 7.4 provides information on new users of Depo-Provera and of sterilisation carried out over the last five years.

Table 7.4: Sterilisation and Depo-Provera use by fiscal years

Fiscal Year	Sterilisation Performed	Depo-Provera new users
1994/1995	48,152	95,789
1995/1996	54,905	128,168
1996/1997	62,887	160,595
1997/1998	65,244	195,534
1998/1999	64,432	199,232

Source: Ministry of Health Annual Reports

Table 7.4 indicates that nearly 300,000 sterilisations were performed within the last five fiscal years; also, there were nearly 200,000 new users of Depo-Provera during the fiscal year 1998/1999. These figures will be reflected in the ever use and current use data of this survey.

Table 7.4A provides information on the ever use of family planning by selected variables. As indicated by the table, older women have ever used family planning more often than younger women have.

Similarly, urban women tend to have ever used contraception more often than their rural counterparts. While the ever use figure was 77% among urban women, the figure for rural women was only 55%.

Among ecological zones, women from the Hills had a higher rate of ever use of

contraception compared to their Terai and Mountain counterparts. For example, nearly 60% of women in the Hills have ever used contraception while the comparative figure for Mountain and Terai women is respectively 52 and 57 percent.

A strong positive association between the education level of women and ever use of contraception was observed. In other words, as the level of education increases among women so does the ever use of contraception. For example, among women with no education ever use of contraception was observed to be 54%, which increases to 67% for women with primary level of education, which further increases to 73% for women with secondary or higher level of education.

A similar picture emerges when one looks at the ever use of contraception by the respondent's literacy. Among illiterate women, ever use of contraception was only 52 %, while it was 71% among literate women.

Table 7.5 shows the method ever used by women. This was a multiple response question, which means that a respondent could provide up to three responses. These responses have been combined and the data presented in Table 7.5. As indicated by the table, Depo-Provera (44%) was the most commonly ever used method, followed by female sterilisation and oral pills

It may be of interest to note that various studies on the continuation rate for Depo-Provera suggest that 60% of users had a one-year continuation rate for Depo-Provera and 25% had a two-year continuation rate, indicating a high dropout rate for this method.

Current use of contraception

Table 7.6 provides time series of the data on the current use of contraception among non-pregnant women from various sources. Proportion of women who are currently using contraception was observed to be 37.3 %. Comparative figures obtained from the Nepal Family Health Survey 1996 shows 28.8 % for current use of any modern method. This indicates an increase of 8 percentage points in a period of five years.

Fig. 7.2: Ever-use of contraception by educational status.

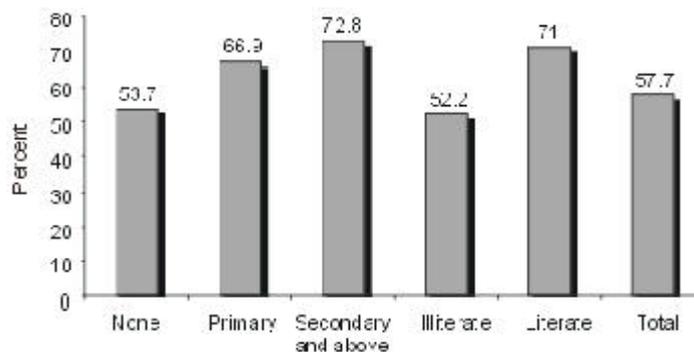


Table 7.5: Frequency distribution of methods ever used.

Methods	Women (%) who ever used FP
Female sterilisation	24.2
Depo-Provera	44.3
Vasectomy	13.5
Pills	22.0
Condom	16.5
Norplant	2.8
No sexual intercourse in unsafe period	3.2
Foaming tabs/jelly/foams	0.4
IUD	0.5

Fig. 7.3: Method of contraception ever used.

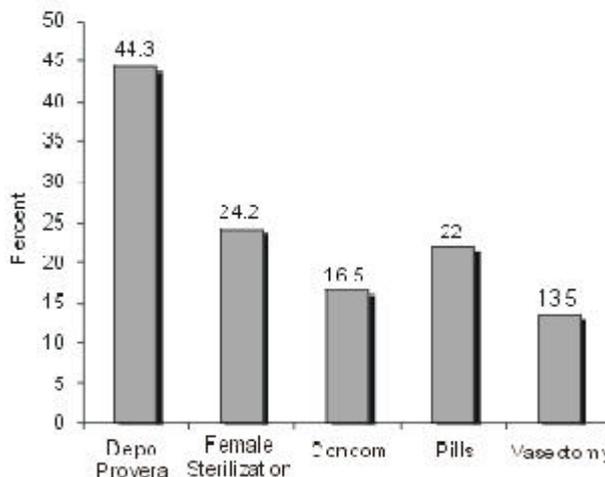


Fig. 7.4: Trend in current used of contraception, 1976-2000

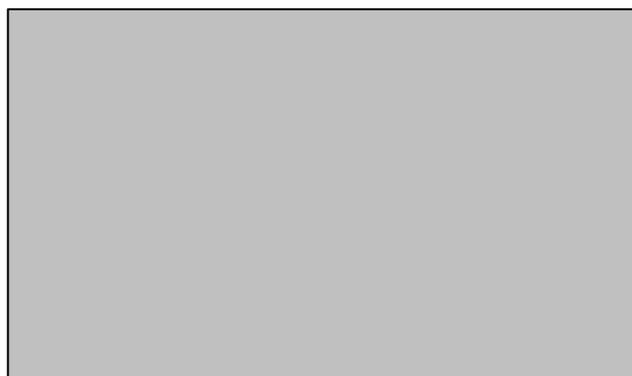


Table 7.6 Trends in the current use of contraception in Nepal.

Year	Current use of FP among non-pregnant women (%) (Any modern method)
1976	2.9
1981	7.6
1986	15.1
1991	24.1
1996	28.8
2000	37.3

Fig. 7.5: Current use of contraception by place of residence.

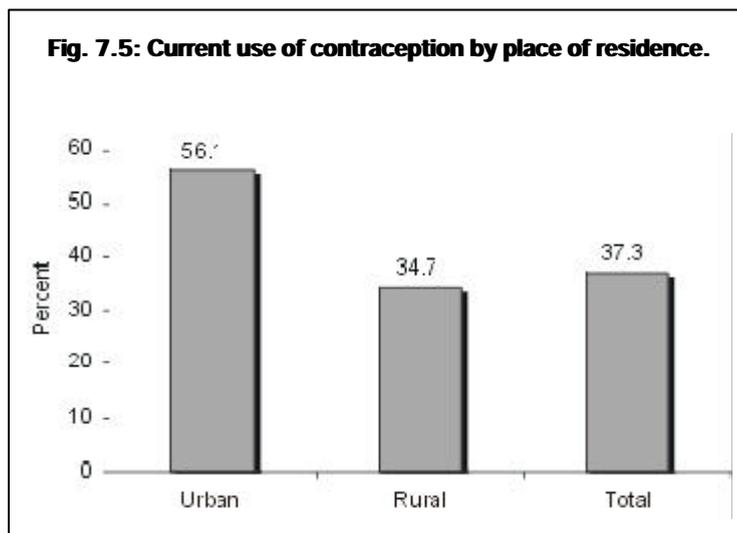


Table 7.6A: Current use of family planning among non-pregnant women by background variables.

Background Variable	Current use of contraception among non-pregnant women (%)	
	YES	NO
Age in Categories		
Less than 25	25.9	2,786
25-34	42.1	3,568
35+	42.0	3,071
Residence		
Urban	56.1	1,139
Rural	34.7	8,286
Ecological Zone		
Mountains	34.2	740
Hills	38.4	4,313
Terai	36.7	4,371
Sub Region		
Eastern Terai	43.3	1,414
Central Terai	28.2	1,526
Western Terai	36.9	634
Mid-western Terai	40.2	468
Far-western Terai	42.8	330

Table 7.6 provides information on the trend of current use of contraception as indicated by different surveys carried out in the past. The general trend in the growth of current use of contraception was observed to be 1 percentage point per year during 1991 and 1996. The current figure indicates an increase of nearly 2 percentage points in the last four years, from 1996 to 2000.

This increased rate of growth in the current use of contraception during the last four years could be due to the fact that nearly 300,000 sterilisations were performed in the last five years. Also, there was an increase in the number of Depo-Provera users (nearly 200,000 in the fiscal year 1998/1999 alone).

The current use of contraception increased with an increase in age. For example, for non-pregnant women less than 25 years of age, current use was 26%, while it was 42% for older non pregnant women. This again reflects the fact that older women are high parity women who would need contraception as their desired fertility had already been met.

Urban non pregnant women had a higher rate of current use of contraception compared to their rural counterparts. In fact, the desired family size was smaller for urban women than for rural women. At the same time, urban women are better educated than their rural counterparts, and there is a greater choice of contraception available in urban areas. Possibly, these factors accounted for the higher use of contraception in urban areas.

There was not much difference in the use of contraception by ecological zones. The current use of contraception was slightly higher in the Hill region, followed by the Terai and the Mountains, respectively.

The education of respondents played an important role in the current use of contraception. With an increase in the educational level of the respondent, there was an increase in the current use of contraception. From a low 35 % for non-pregnant women with no education, current

use increased to 45 % for such women with secondary or higher education.

A similar picture emerges with respect to the literacy of women. For example, among illiterate women, the level of current use was 33.4%, while it increased to 45% for literate group. Women that reported currently using a method were asked to describe the current family planning method used. The data is presented in Table 7.7.

Table 7.7: Frequency distribution of family planning method currently used.

Methods	Current use of contraception among non-pregnant women (%)
Female sterilisation	38.9
Depo-Provera	28.4
Vasectomy	20.6
Pills	6.5
Condom	3.7
Norplant	0.8
No sexual intercourse in unsafe period	0.6
Foaming tabs/jelly/foams	0.3
IUD	0.2

As indicated by the table, the most common method of contraception used in Nepal was female sterilisation, which accounted for 39% of contraceptive use. The second highest proportion was injectables (28%), which has been slowly gaining popularity in Nepal in recent years. Vasectomy accounted for 21% of the current use of family planning, while oral pills accounted for 6% of current use. Injectables with both male and female sterilisation accounted for 88 % of current use.

This indicates that the programme should also emphasise other spacing methods of contraception so that the proportion of sterilisation decreases and the notion of birth spacing as well as planned family increases.

Informed consent and sterilisation regret

Informed consent regarding the use of contraception is an integral part of the quality of a family planning programme. In this survey, women of sterilised couples

Table 7.6A: Continued.

Background Variable	Current use of contraception among non-pregnant women (%)	
	YES	NO
Eastern Hills	34.6	676
Central Hills	51.4	1,349
Central Hills (ex Ktm Valley)	36.9	795
Western Hills	32.8	1,162
Mid-western Hills	32.9	750
Far-western Hills	26.7	375
E + C + W Mountains	38.4	392
MW + FW Mountains	29.5	348
Kathmandu Valley	72.2	555
Educational status		
None	35.1	7,105
Primary	43.0	840
Secondary and above	45.4	1,406
Literacy		
Illiterate	33.9	6,634
Literate	45.2	2,791
Nepal	37.3	9,425

Notes: Abbreviations same as in table 7.1

Fig. 7.6: Current use of contraception by educational status.

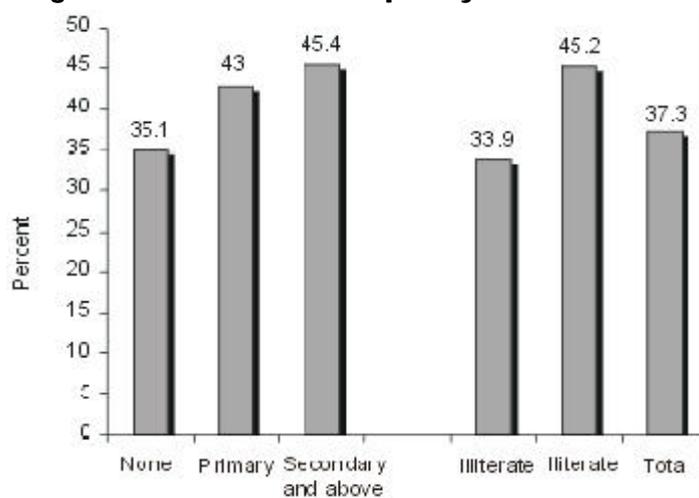


Fig. 7.7: Family planning method currently used.

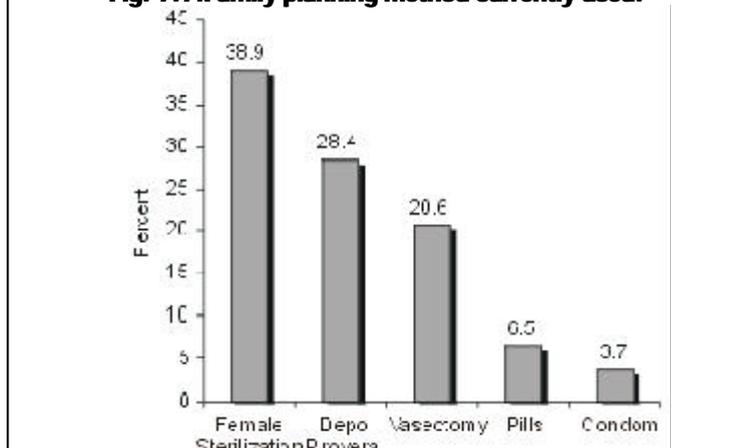


Table 7.8: Frequency distribution of women from sterilised couple who said they signed consent form for sterilisation.

Women from sterilised couple who said	Percent
Yes	90.3
No	9.7

were asked if they signed an informed consent form just before sterilisation. This data has been summarised in Table 7.8 below. Nearly 10% of the respondents said that they did not sign any consent form before sterilisation. Since the survey covers women who could have been sterilised some time ago, it is possible they forgot that they signed the form or that the form had not been introduced then.

Often a client opts for a sterilisation procedure and later regrets undergoing the surgical procedure. This happens because of the change in demographic status such as the death of children (often a son in this case). Note that as sterilisation is an irreversible process, clients can hardly be helped (although in some vasectomy cases, reversal has been successful). That is why counseling and the signing of a consent form before sterilisation is very important. During the signing of the consent form, clients are also informed about other available methods of contraception so that they have other options and they can use any of the available alternative methods. The data on sterilisation regrets has been summarised in Table 7.9 and 7.10.

Table 7.9: Frequency distribution of regrets of women from sterilised couple of having been sterilised.

Women from sterilised couple who said	Percent
Yes	5.7
No	94.3

Table 7.8 indicates that 6 % of the sterilisation cases indicate regret having undergone the sterilisation procedure. These women gave their main reason for regret and the data has been summarised in Table 7.9. As indicated, the main reason for regret was the side effects of sterilisation (38.2%), followed by a desire for children either by the spouse or by the respondent (33.2). Death of children accounted for 12.2 % of the responses, while the 'others' category accounted for 16.4 %.

Table 7.10 Frequency distribution of reasons for regret for having undergone sterilisation

Reasons given by women from sterilised couple	Percent
Women wanted another child	22.5
Spouse wanted another child	10.7
Side effects	38.2
Death of children	12.2
Others	16.4

Summary and conclusion

While the current use of contraception is gradually increasing over the years, the contraceptive mix is heavily tilted towards sterilisation and use of Depo-Provera. The programme needs to focus more on non-clinical methods such as condoms as well as oral pills for a better-balanced contraceptive mix.

The concept of spacing is very limited among Nepalese couples, as indicated by the smaller proportion of women using temporary methods compared to women opting for sterilisation. The programme should also emphasise and popularise the concept of birth spacing. Specifically, if this could be targeted at younger women, the fertility effect of contraception could be much higher.

Side effects play an important role in the use and non-use of contraception in Nepal. Consequently, the programme needs to focus its educational efforts and counseling on this issue so as to further increase current use.

Although the proportion of respondents that expressed regret over sterilisation was low, extra efforts are needed in counseling.

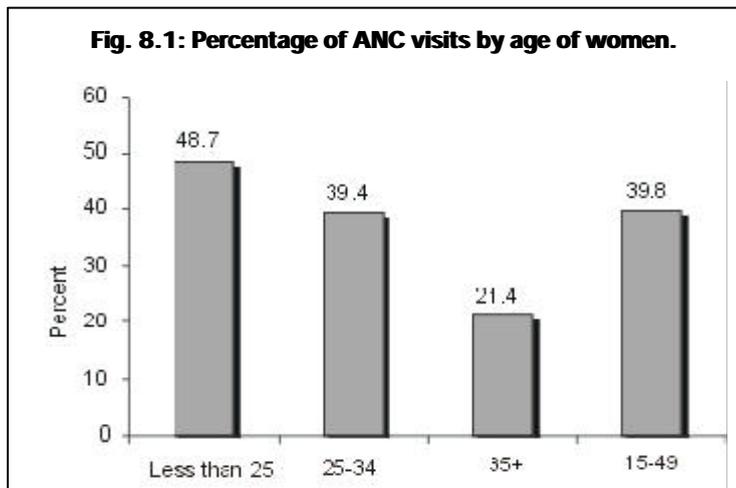
chapter 8

ANC Services

Munishwor Mool

Introduction

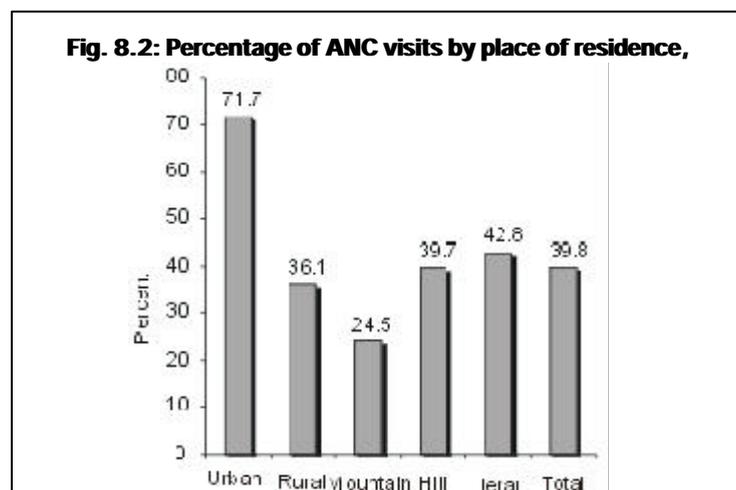
The use of antenatal service is one of the important process indicator used as a proxy for maternal mortality rates/ratios. That is, if quality antenatal services are provided to expectant mothers, maternal mortality will go down. The Safe Motherhood Programme in Nepal recommends that pregnant women be examined at least four times during a pregnancy and that the first ANC check-up be as early in the pregnancy as possible.



be as early in the pregnancy as possible.

Coverage of ANC services and differentials

In this survey, currently married women of reproductive age were asked if they had delivered a baby during the last five years or are currently pregnant. If they said yes, they were asked if they had gone for ANC services. Among such women, 39.8% (Table 8.1) had gone for an ANC check-up. This figure is close to the NFHS 1996 figure of 43.9%. It should be noted that the figure for NFHS 1996 referred to women who gave birth to a child in the last three years, while the current figure is based on five-year period. The mean number of ANC services received by pregnant women was 3.4 against 4, the recommended number of check-ups under safer motherhood programme.



The relationship of age to the utilisation of ANC services was negative. As the age of women increased, the percentage of women receiving ANC services decreased. Perhaps it is indicative of two things: first, since younger women are better educated, a higher proportion

Unless and otherwise stated women, throughout this chapter 8, refer to currently married women of reproductive age who delivered a baby in the last five years or is currently pregnant.

of them go for ANC services; second, younger women with lower parity may believe they need ANC services in contrast to older women who have already given birth to a larger number of children.

It was found that a high proportion of women in urban as compared to those in rural areas go for ANC services. In fact urban women were twice as likely to receive ANC services compared to their rural counterparts.

For example, the proportion of women receiving ANC services in rural areas was 36.1%, while the figure for urban areas was nearly twice that (71.7%). Once again, this may be a reflection of the level of knowledge regarding the need for ANC services as well as the accessibility and quality of these services are accessible in urban areas. Furthermore, urban women were better educated than rural women.

The highest level of coverage of ANC services for the ecological zones was observed for the Terai (43%), followed by the Hills and the Mountains (40% and 24%, respectively). In terms of sub-regions, the highest level of coverage of 82% was observed for Kathmandu Valley, followed by Eastern Terai at 55%. The lowest level of ANC service coverage (18.6%) was observed for the Mid-western and Far-western Mountain region.

According to the survey, literate women used ANC services more often than did illiterate women (70% versus 28%). This pattern was also clearly discerned when looking at the percentage of women receiving ANC service according to educational status. For example, the proportion of women receiving ANC services among women with no education was 28.7%. That figure increased to 83.2% when the educational level of women increased to secondary level and above.

Regarding the mean number of ANC visits, differential patterns are clearly seen by the literacy as well as educational status of respondents. Women that were illiterate or did not have any formal schooling had a lower mean number of ANC visits, whereas literate women and women with formal schooling had a higher mean number of ANC visits. Also, women who lived in urban areas had a higher mean number of ANC visits compared to their rural counterparts. Among urban women, women who lived in Kathmandu Valley had the highest mean number of ANC visits (nearly six ANC visits). The mean number of ANC visits was the least in the Mid-western Hills as well as the Mid-western Terai, where it was less than 3 visits.

Place of ANC service and ANC service provider

Women were also asked where they went for ANC services and who provided the

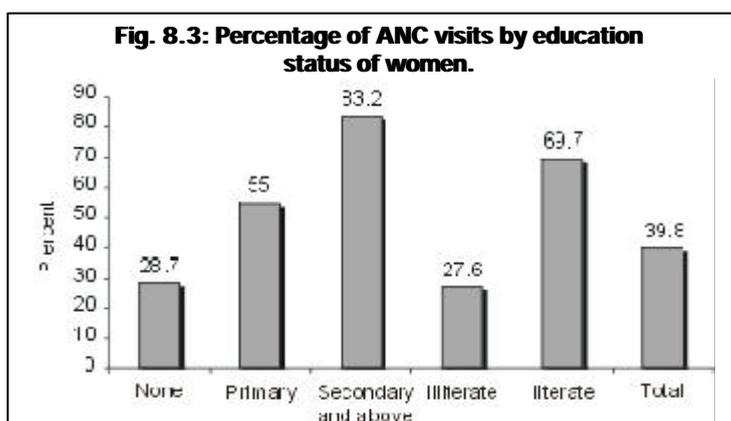


Table 8.1: Percentage of women receiving ANC services and mean number of ANC visits by selected variables.

Selected Variable	Women (%) Receiving ANC Service During Pregnancy	Mean Number of times ANC	Number of Cases
Age in Categories			
Less than 25	48.7	3.39	2,038
25-34	39.4	3.54	2,463
35+	21.4	3.04	926
Residence			
Urban	71.7	4.71	575
Rural	36.1	3.13	4,852
Ecological Zones			
Mountains	24.5	3.04	453
Hills	39.7	3.73	2,460
Terai	42.8	3.19	2,513
Sub-Region			
Eastern Terai	54.2	3.53	761
Central Terai	32.6	2.93	929
Western Terai	55.2	3.83	331
Mid-western Terai	34.2	2.49	28

Table 8.1: Continued.

Selected Variable	Women (%) Receiving ANC Service During Pregnancy	Mean Number of times ANC	Number of Cases
Far-western Terai	38.1	2.71	205
Eastern Hills	34.8	3.04	375
Central Hills	62.4	4.27	707
Central Hills (ex Ktm Valley)	50.2	3.23	440
Western Hills	40.0	3.17	638
Mid-western Hills	20.9	2.59	494
Far-western Hills	19.9	3.12	245
E + C + W Mountains	30.2	3.09	233
MW + FW Mountains	18.4	2.95	221
Kathmandu Valley	81.7	5.99	267
Educational status of women			
None	28.7	2.91	4,019
Primary	55.0	3.30	506
Secondary and above	83.2	4.31	860
Literacy of women			
Illiterate	27.6	2.89	3,779
Literate	69.7	3.94	1,578
Nepal	39.8	3.43	5,427

Note: Abbreviations same as in table 7.1

service. Findings are given in tables 8.2 and 8.3. Of the women who went for ANC services, a high proportion of them (97.8%) went to a health institution (either public or private). Virtually all such women received ANC services from trained medical personnel and only 0.7% received services from others (i.e., non-medical personnel). A high percentage of respondents said they visited a hospital, but villages often regard a health post or sub-health post as a “hospital,” in spite of interviewers reminding them of the distinction.

Table 8.2: Frequency distribution of places visited by women for ANC services.

Place for ANC Service	Women (%)
PHC outreach clinic	1.9
SHP/HP	43.2
Health centre/PHC	6.7
Hospital	42.2
Private clinic	3.8
Others	2.1
Total Cases	(2154)

Table 8.3: Frequency distribution of women by ANC service providers.

ANC Service Provider	Women (%)
Doctor	28.9
Nurse/ANM	39.1
Health assistant	7.6
AHW	14.1
MCHW	6.6
VHW	2.9
Others	0.7

Subjects discussed during ANC services

Subjects discussed during women’s ANC visits have been summarised in Table 8.4. It is encouraging to note that these important issues were discussed in more than 60% of the cases, with scope for further improvement in this regard. The need for tetanus toxoid immunization was discussed in 79% of the cases, while place of delivery was discussed in the least number of cases (61.4%).

Table 8.4: Percentage of women informed about place of delivery, breast feeding, TT, nutrition and sanitation by background variables.

Background Variable	Women (%) who received information on				
	Place of delivery	Breast feeding	TT	Nutrition	Sanitation
Age in Categories					
Less than 25	60.2	71.2	78.6	61.1	64.8
25-34	63.0	71.5	79.1	63.2	65.2
35+	61.1	67.5	76.4	59.1	61.0
Residence					
Urban	59.8	72.8	83.7	67.6	65.5
Rural	61.9	70.6	77.5	60.5	64.4

Differences in what was discussed during ANC visits can be clearly seen for urban and rural residence of respondents. Urban women were likely to receive more information than their rural counterparts. Likewise, literate or educated women got more information than did illiterate or women with no formal schooling. Far more discussion was reported by women in the sub-regions of the Central Hills and Western Hills than in others. Likewise, the most discussion took place in the Hills, followed by the Terai and Mountains, respectively.

Time taken to reach health institution

In keeping with government policy, sub-health posts have been established in nearly all the VDCs of the country. Besides these health institutions, three to five out-reach clinics have also been operating in most VDCs, and yet 67% of women who went for ANC services needed one hour or more to reach a health institution for ANC services. It is possible some women visited higher-level health institutions for ANC services, thus requiring more time to reach the health institution of their choice. Table 8.5 provides the frequency distribution of time taken to reach a health institution for the service.

Table 8.5: Frequency distribution of women who went for ANC services by time taken to reach health institution (hours).

Time	Women (%)
Less than an hour	33.3
1 – 2 hours	37.8
2 – 3 hours	18.9
3 – 4 hours	5.9
4 or more	4.1
Total cases	(2142)

Time of first ANC service

The data shown in Table 8.6 suggest that most women that received ANC services went for these services rather late in their pregnancy. This is clearly seen when one looks at the percentage of women receiving ANC services in the first trimester (37.3%). Most such women received ANC services between three to six months in their pregnancy (77%), and 2.6% of them received ANC services in the eighth month of pregnancy or later. Early visits to a health institution for ANC services are much more effective in reducing maternal mortality because pregnancy problems diagnosed earlier can be corrected early,

Table 8.6: Frequency distribution of women who went for first ANC services by duration of pregnancy.

Duration of pregnancy	Women (%) who went for first ANC service
Three months or less	37.3
4-5 months	38.6
6-7 months	21.6
8 or more months	2.6

Table 8.4: Continued.

Background Variable	Women (%) who received information on				
	Place of delivery	Breast feeding	TT	Nutrition	Sanitation
Ecological Zone					
Mountains	45.8	54.5	66.2	52.5	53.4
Hills	67.7	76.0	83.7	68.9	65.6
Terai	57.6	68.1	75.3	56.4	64.9
Sub-region					
Eastern Terai	62.6	77.2	86.1	64.5	68.4
Central Terai	50.3	59.1	65.5	42.4	57.9
Western Terai	64.1	72.6	76.6	67.6	75.8
Mid-western Terai	46.3	54.6	62.0	50.0	56.7
Far-western Terai	57.4	59.6	69.8	49.0	57.6
Eastern Hills	65.4	76.7	88.0	69.3	67.9
Central Hills	66.1	76.5	82.0	74.4	68.5
Central Hills (ex Ktm Valley)	73.3	74.5	75.5	74.5	75.5
Western Hills	85.6	88.5	90.5	70.9	67.3
Mid-western Hills	44.6	57.2	65.6	52.5	59.7
Far-western Hills	43.2	43.3	53.5	42.7	37.9
E + C + W Mountains	45.7	57.1	56.8	47.3	45.0
MW + FW Mountains	45.8	50.0	82.3	61.5	67.7
Kathmandu Valley	58.7	78.6	96.8	74.1	61.2
Educational status of women					
None	56.2	66.2	71.8	53.3	56.9
Primary	66.9	76.5	82.9	66.7	70.8
Secondary and above	68.4	76.6	88.1	74.2	74.8
Literacy					
Illiterate	55.4	65.2	70.8	52.1	55.8
Literate	67.5	76.3	86.1	71.2	73.0
Nepal	61.5	71.0	78.7	61.9	64.6
Background Variable					
	Iron folic acid tablets	Danger signs of pregnancy	Danger signs during delivery	Place to go when danger signs observed	Family planning
Age in Categories					
Less than 25	56.7	46.1	43.9	44.1	45.7
25-34	59.6	49.5	47.9	45.5	49.0
35+	52.0	40.4	36.4	35.2	39.4
Residence					
Urban	70.6	53.9	54.9	55.3	53.9
Rural	54.5	45.5	42.7	41.2	44.8
Ecological Zone					
Mountains	44.2	33.9	32.5	33.4	33.4
Hills	64.7	50.2	49.7	48.2	55.2
Terai	52.4	45.6	42.0	41.0	40.1
Sub-Region					
Eastern Terai	63.8	50.2	44.0	42.2	36.9
Central Terai	38.6	40.5	36.8	39.0	38.0
Western Terai	58.4	49.3	47.8	42.1	49.9
Mid-western Terai	37.7	39.7	38.9	40.2	39.1
Far-western Terai	49.9	40.2	40.9	41.5	43.4

Table 8.4: Continued.

Background Variable	Women (%) who received information on				
	Iron folic acid tablets	Danger signs of pregnancy	Danger signs during delivery	Place to go when danger signs observed	Family planning
Eastern Hills	48.8	45.4	46.2	46.2	47.6
Central Hills	82.6	62.4	61.4	62.3	61.8
Central Hills (ex Ktm Valley)	73.5	71.1	71.1	71.1	73.4
Western Hills	56.2	40.4	39.3	30.4	60.7
Mid-western Hills	39.8	39.6	40.1	41.8	36.9
Far-western Hills	44.1	27.5	28.5	31.7	25.8
E+ C+ W Mountains	39.0	32.8	31.1	30.2	32.0
MW+ FW Mountains	53.1	35.8	34.7	38.9	35.0
Kathmandu Valley	91.8	53.4	51.5	53.5	50.0
Educational status of women					
None	48.3	40.7	38.6	36.2	39.6
Primary	62.3	49.0	47.0	46.3	48.8
Secondary and above	70.8	57.0	55.0	56.1	57.3
Literacy					
Illiterate	47.2	39.5	37.0	34.7	37.0
Literate	67.3	54.6	52.9	53.0	55.0
Nepal	57.4	47.1	45.0	43.9	46.6

Note: Abbreviations same as in table 7.1

Fig. 8.4: Percentage of ANC visits by duration of pregnancy.

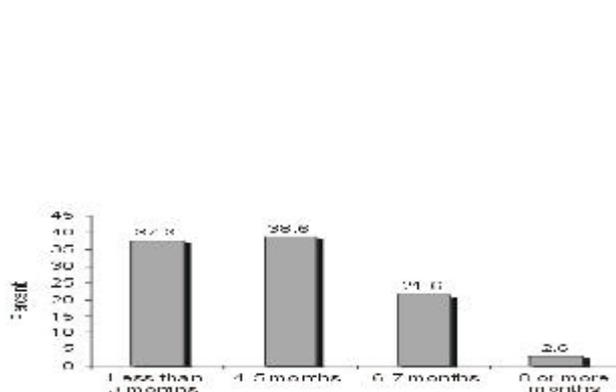


Table 8.7: The frequency distribution of number of TT shots in last pregnancy and number of TT shots in the previous to last pregnancy.

Number of shots	Women (%) by TT shots in last pregnancy	Women (%) by TT shots in last to previous pregnancy
1	11.1	42.7
2	48.3	34.3
3	37.9	19.9
4 or more	2.7	3.1
Total	100.0 (2012)	100.0 (154)

especially in nutrition-related or other minor problems.

Although women went for ANC services rather late in their pregnancy, the mean number of visits of those that made ANC visits was 3.43. This is close to the minimum of four visits suggested by the Safe Motherhood Programme. The service providers need to inform women that they should visit health institutions for ANC services more often so as to reduce their health problems. This is vital considering most deliveries in Nepal take place at home.

TT shots during pregnancy

Women were also asked if they had TT shots during their last pregnancy. It is encouraging to note that 93% of women that received ANC services had TT shots. Among women that received TT shots, 89% had at least two TT shots. This indicates that TT services have become a routine part of the ANC services. Women who had taken one TT shot or none at all in their last pregnancy were asked whether they had taken any TT shot in their previous pregnancy. Table 8.7 shows that 43% of these women had taken one TT shot during a previous pregnancy and 57% had taken two or more shots.

Iron and Folic Acid

Table 8.8 shows data on iron/folic acid tablets. Although iron and folic acid are an integral component of ANC services, its coverage in Nepal was only 48.8%. Among those women that received these tablets, nearly 66% took these tablets for one month or less. In a country where 75% of pregnant mothers are anaemic (NMSS-1998), these tablets should be continued much longer. Why this is not the case could be due to a

Table 8.8 Frequency distribution of women who took iron/folic acid tablets by duration of iron/folic acid tablets taken.

Duration of tablets taken	Women (%) who took iron/folic acid tablets
One month or less	66.6
More than one month but less than two	4.1
Two or more months	29.3

shortage of supplies at the health institution or service providers not being fully aware of the high prevalence of anaemia and the need for iron folic acid tablets.

Pregnancy-related problems and help sought

The data regarding problems experienced by women during pregnancy, the type of problems and whether help was sought are summarised below. Nearly a fifth of women (21.3%) experienced some health problems in their pregnancy. Of the health problems experienced, the most frequent problem was high blood pressure (58.7%), followed by severe abdominal pain (49.8), oedema (32.9%), anaemia (24.4%) and high fever (19.5%).

Only two-thirds of women that experienced problems during their last pregnancy sought help. Of those that sought help, 54.3% reported going to hospital for treatment. It should be noted, however, that rural people commonly regard any health institution as a hospital, thus increasing the figure that go to the hospital.

A high 92.4% of women who faced problems during their last pregnancy and have gone for health services were satisfied with services they received. The small number of such women that were not satisfied with the treatment cited reasons such as no improvement in their condition by treatment (64.1%) and no medicine available at the health institution (24.4%).

Tobacco and alcohol consumption during pregnancy

Table 8.9 provides a summary of the data on women by smoking and alcohol consumption during their last pregnancy. Twenty-one percent of women smoked during pregnancy. The practice of smoking was lowest in educated and urban areas and high in the Mountains, Hills and parts of the Terai. One would have expected a smaller proportion of women that smoked in the Terai, but the findings indicate a high prevalence of smoking in the Far-western and Mid-western Terai. This may be because of the area's large population of Tharu community, among whom smoking habit of women is common and widespread.

According to the survey, 16.3 % of women drank alcohol during their last pregnancy. Alcohol consumption among pregnant women was higher in the Eastern Central and Western Mountains, Eastern Central and Western Hills and the Far-western and Mid-western Terai. The high

Table 8.9: Proportion of women that smoked tobacco, consumed alcohol and suffered from nightblindness during last pregnancy by background variables.

Background Variable	Proportion of women who		
	Smoked tobacco During Pregnancy	Drank alcohol in pregnancy	Suffered from Night-blindness
Age in Categories			
Less than 25	12.8	12.3	9.6
25-34	21.2	16.1	10.9
35+	36.7	25.8	12.6
Residence			
Urban	10.0	11.4	4.3
Rural	22.0	16.9	11.5
Ecological Zone			
Mountains	38.1	23.9	16.3
Hills	25.0	24.1	7.8
Terai	13.3	7.4	12.6
Sub-Region			
Eastern Terai	10.6	8.0	10.5
Central Terai	10.5	2.4	16.5
Western Terai	7.7	6.4	8.6
Mid-western Terai	23.5	19.1	9.8
Far-western Terai	30.8	12.6	12.8
Eastern Hills	25.2	27.6	8.5
Central Hills	20.2	27.3	3.8
Central Hills (ex Ktm Valley)	27.6	33.5	4.7
Western Hills	23.9	28.5	3.5
Mid-western Hills	35.5	22.6	15.3
Far-western Hills	20.4	1.0	14.1
E + C + W Mountains	37.1	44.8	14.1
MW + FW Mountains	39.2	1.9	18.7
Kathmandu Valley	8.1	16.8	2.3
Educational status of women			
None	25.7	19.2	12.7
Primary	10.0	13.7	6.7
Secondary and above	4.0	4.9	4.0
Literacy			
Illiterate	26.1	19.4	12.6
Literate	8.0	9.0	6.2
Nepal	20.7	16.3	10.7

Note: Abbreviations same as in table 7.1

level of alcohol consumption during pregnancy in the Far-western and Mid-western Terai regions can be partly explained by the higher proportion of Tharu women in these areas.

Nightblindness during last pregnancy

Table 8.9 also provides data on whether women suffered from night blindness during their last pregnancy. As indicated, 11% of women suffered from night blindness because of a deficiency of vitamin A. This reinforces the need to provide low-dose vitamin A supplementation to expectant mothers as a part of the Safe Motherhood Programme. Here too the incorporation of health education emphasising vitamin A and ensuring its availability in locally found foods is urgently needed besides supplementation activities.

Table 8.10: Percentage distribution of women whose food intake increased, decreased or remained same during last pregnancy by background variables.

Background Variable	Women (%) by food intake during last pregnancy		
	Increased	Decreased	Same
Age in Categories			
Less than 25	14.7	50.4	34.9
25-34	12.8	50.5	36.7
35+	11.5	50.8	37.7
Residence			
Urban	20.7	43.5	35.8
Rural	12.4	51.4	36.2
Ecological Zone			
Mountain	6.8	51.9	41.4
Hills	13.5	46.1	40.3
Terai	14.2	54.6	31.2
Sub-Region			
Eastern Terai	17.0	55.0	28.0
Central Terai	12.4	57.6	30.1
Western Terai	20.6	49.3	30.1
Mid-western Terai	9.2	51.3	39.5
Far-western Terai	9.1	52.6	38.3
Eastern Hills	14.0	45.7	40.2
Central Hills	15.6	39.8	44.6
Central Hills (ex Ktm Valley)	11.9	51.3	36.7
Western Hills	14.6	49.7	35.7
Mid-western Hills	10.5	48.4	41.1
Far-western Hills	9.4	51.5	39.1
E+ C+ W Mountains	8.0	51.5	40.5
MW+ FW Mountains	5.6	52.3	42.1
Kathmandu Valley	22.3	20.5	57.3
Educational status of women			
None	11.2	52.7	36.1
Primary	15.0	47.6	37.4
Secondary and above	21.7	42.2	36.1
Literacy			
Illiterate	10.8	52.9	36.2
Literate	18.9	44.7	36.3
Nepal	13.3	50.5	36.2

Note: Abbreviations same as in table 7.1

The prevalence of nightblindness among illiterate women was nearly twice that of literate women. This may be because educated women are better informed about nutrition. Another reason could be that these women belong to a higher socio-economic group among whom nutritional deficiency is less prevalent than women from lower socio-economic groups. Also, younger women seem to be slightly better off than older women in terms of vitamin A deficiency, as reflected in the occurrence of nightblindness during pregnancy. The prevalence of nightblindness among urban women was one-third of that among their rural counterparts.

There was a higher prevalence of nightblindness in the Terai and Mountains than in the Hills. Women from the Far-western and Mid-western Hills and Mountains also reported a higher incidence of nightblindness. Information education and communication activities should target specific groups and specific areas so that the overall occurrence of vitamin A deficiency among women is substantially reduced.

Food intake during pregnancy

Women were asked to provide information on whether their food intake during pregnancy increased, decreased or remained the same. The data obtained is presented in Table 8.10. A high proportion of women of reproductive age was underweight (NFHS-1996 and NMSS-1998). Food intake should increase during pregnancy for the sake of the baby's and mother's health. However, as Table 8.10 indicates, 51% of women reported decreasing their food intake and 36% reported maintaining the same food intake. Only 13% of women reported an increase in food intake during pregnancy.

The differential in the food intake pattern can be discerned for urban and rural residence too. Urban women seemed slightly better off in food intake during pregnancy. Younger women too seemed to increase their food intake during pregnancy. As age increased, the proportion of women increasing their food intake during pregnancy decreased.

The food intake was slightly better among Hill and Terai women as compared to women in the Mountains. Similarly, women in Kathmandu Valley, the Western Terai and Eastern Terai were better in food intake during pregnancy with more than 17% reporting increased food intake.

Summary and Conclusion

Keeping in view the low coverage of ANC services, extensive IEC services are needed to motivate pregnant women, their in-laws and husbands, on the importance of ANC service for the life of women and the unborn child.

This survey has found that nearly 60 percent of pregnant women never go for the ANC services. Among women who go for ANC service, the mean ANC visit is 3.4. As per the recommendation of the safer motherhood program, there should be at least 4 ANC visits during each pregnancy. To increase the number of ANC service during a pregnancy, IEC activities need to be planned and implemented. At the same time, efforts to increase the quality of service by health institutions are also required.

Among women who go for the ANC service, only slightly more than a third of the women receive ANC during their first trimester of pregnancy. For ANC service to be more effective, the sooner the women go for the services the better. Once again these need to be addressed through increased IEC efforts.

Nearly 10 percent of mothers complain of nightblindness during pregnancy. At present, the Ministry of Health does not have policy to address this problem. Perhaps some nutritional support in terms of low-dose vitamin A supplementation is needed. For the time being community level health institutions should provide IEC activities regarding the locally available food rich in vitamin A.

Nearly one in five women smoked during pregnancy and nearly 16 percent report taking alcohol during pregnancy. Consumption of these items during pregnancy adversely affects the health of the children as well as their birth weight. Consequently local level IEC activities relating these to the health of mothers and their unborn children need to be emphasised.

Nepal Micronutrient Status Survey 1998 clearly shows that nearly three-quarters of pregnant women were anaemic. In this context two thirds of the mothers who went for ANC service took iron/folic acid supplementation for only one month or less.

To rectify the situation, following suggestions could be made.

1. Distribute iron and folic acid supplementation during the first visit.
2. During the distribution of iron/folic acid, make sure that mothers understand the importance of taking these pills regularly and for a longer duration of time.
3. At times low distribution of these pills could also be due to low supply level, and thus the Safer Motherhood Programme needs to provide these pills to health institutions in adequate quantities.

Chapter 9

DELIVERY AND POST NATAL CARE

Tek B. Dangl

Introduction

Delivery and postnatal care is one of the important and essential components for the reduction of maternal mortality. Generally, most deliveries in Nepal are done at home with the assistance of non-medical personnel. If these deliveries were supervised by medically trained personnel under hygienic conditions, a substantial number of maternal deaths could be avoided. Thus, the objective of the safe motherhood programmes is to reduce maternal deaths by bringing more and more mothers to deliver at health institutions and by ensuring trained attendance in case of home delivery.

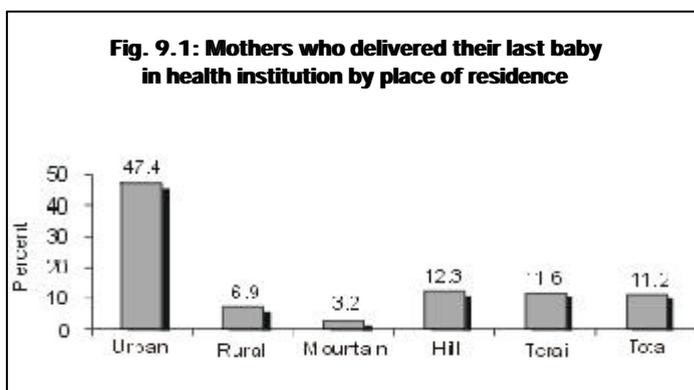
Table 9.1: Percentage distribution of mothers who delivered their last child by place of delivery.

Place of delivery	Mothers (%)
Home	85.6
Cowshed	2.5
Hospital/PHCC/HC	10.5
HP/SHP	0.3
Private clinic-nursing home	0.3
Others	0.7

Place of delivery

In this survey, mothers were asked where they delivered their last baby and who assisted them during childbirth. According to the data summarised in Table 9.1, 88 % of the deliveries of such mothers took place in the house or the cowshed. Most deliveries in the cowshed occurred in the Far-western and Mid-western districts. The proportion of mothers reporting delivery of their last child at health institutions was 11% at the national level, which is a slight improvement over 7.6% in the 1996 Nepal Family Health Survey. There is scope for further improvement, however.

As indicated in Table 9.1, different categories for place of delivery have been identified, such as home, cowshed, and health institutions, including private and public institutions.



Looking at the place of delivery by the age of mothers, mothers of younger age groups were more prone than older mothers to use health institutions during delivery. As the age of the mother increased, there was a decrease in the use of health institutions for delivery. Perhaps this was because younger mothers are more literate and thus more knowledgeable

Unless and otherwise stated “mothers” through out this chapter 9, refer to currently married women of reproductive age group who had given birth to at least one baby.

about health institutions than their older counterparts.

In Nepal, urban areas have better facilities, and urban mothers are better educated than rural mothers and are thus more knowledgeable about available health facilities. This was reflected in the higher proportion of deliveries at health institutions in urban areas (47%) as compared to those in rural areas (7%).

The Hill and Terai mothers were more prone to use health institutions for delivery as compared to Mountain mothers. This may be because there are fewer health institutions in mountain areas and they are also less accessible. While the proportion of such mothers for Hill and Terai areas was approximately 12%, the figure for Mountains areas was only 3%. Fig. 9.1 presents the comparative proportion of mothers who delivered their last baby in health institutions by area of residence and by ecological zone.

The education and literacy of mothers was also closely associated with the level of health institution delivery. As the educational level increased, so did the proportion of mothers delivering at health institutions. For example, among mothers with no formal schooling, the proportion of mothers who delivered the last baby at health institutions was 5%. This increased to 38% for mothers with secondary or higher level education. A similar picture emerges when looking at the pattern for literate and illiterate mothers. Literate mothers were more than five times as likely to use health institutions for delivery as were illiterate mothers.

Kathmandu Valley ranked highest in the proportion of health institution delivery (69.2%), while the lowest proportion of deliveries at health institutions was observed in the Mid-Western and Far-Western Mountains.

Persons assisting in delivery
Mothers that had delivered at least a baby during the last five years including those who had delivered at home were asked who assisted them in the last child birth. The data in Table 9.3 indicates that 13% of deliveries were assisted by medically

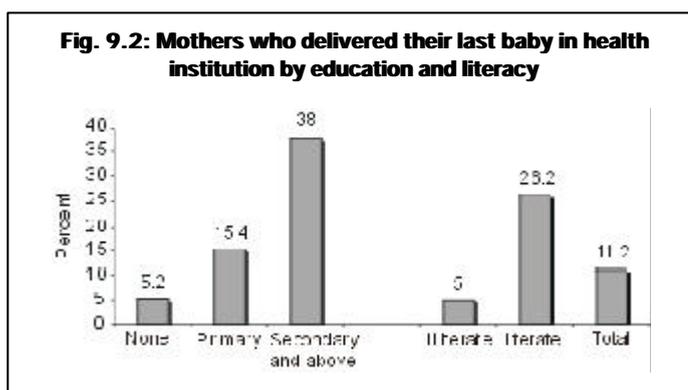


Table 9.2: Percentage distribution of mothers by place of delivery by selected variables.

Selected Variable	Mothers (%) who gave birth to last child in		
	*Home	**Health Institutions	Others
Age in Categories			
Less than 25	84.7	14.7	0.6
25-34	88.4	10.9	0.7
35+	94.6	4.7	0.8
Residence			
Urban	52.4	47.4	0.2
Rural	92.3	6.9	0.7
Ecological Zone			
Mountains	95.0	3.2	1.8
Hills	87.2	12.3	0.5
Terai	87.8	11.6	0.6
Sub Region			
Eastern Terai	82.2	17.5	0.3
Central Terai	90.3	8.9	0.8
Western Terai	84.4	15.3	0.3
Mid-western Terai	93.2	5.4	1.4
Far-western Terai	95.0	4.0	1.0
Eastern Hills	95.1	4.9	0.0
Central Hills	68.7	31.1	0.2
Central Hills (ex Ktm Valley)	91.4	8.6	0.0
Western Hills	92.9	6.5	0.6
Mid-western Hills	95.4	3.3	1.2
Far-western Hills	96.2	2.5	1.3
E+ C+ W Mountains	92.4	5.3	2.2
MW+ FW Mountains	97.7	0.9	1.4
Kathmandu Valley	30.4	69.2	0.4
Educational status of mother			
None	94.1	5.2	0.7
Primary	82.9	15.4	1.7
Secondary and above	61.7	38.0	0.2
Literacy			
Illiterate	94.2	5.0	0.8
Literate	73.3	26.2	0.5
Nepal	88.1	11.2	0.7

Note: Abbreviations same as in table 7.1

*Home includes in the house and cowshed.

**Health Institution includes, hospital/PHCC/HP/SHP/Private clinics.

Table 9.3: Mothers (%) by persons assisting in delivery.

Mothers assisted by	Mothers (%)
Doctor	4.5
Nurse/ANM	7.4
HA-AHW	0.5
VHW	0.0
MCHW	0.5
Trained TBA	7.2
Untrained TBA	7.5
FCHV	1.5
Relatives/friend	52.6
None	12.3
Others	6.1

trained personnel. However, the proportion of delivery assisted by MCHW was found much less than expected, because there is at least one mid-wife trained MCHW in each and every VDCs. Trained and untrained TBAs accounted for 15 % of the cases. The proportion of deliveries assisted by friends and relatives in Nepal was 53 %. In 12.3 % of such mothers, mothers delivered by themselves without anyone assisting them. This shows that increasing the number of trained health staff to deliver babies would be useful in minimising the risk of maternal mortality, by ensuring clean delivery and timely referral in case of emergency given the strains and problems of increasing coverage through medically trained personnel.

Whether Home Delivery Kit used

Of the mothers who delivered their last baby in places other than health institutions, only 10.6% of such mothers reported using a Home Delivery Kit during delivery. The most common source of getting the Home Delivery Kit was for such mother was the pharmacy, accounting for 44% of total HDK users. The second most common source of the kits were trained TBAs, followed by Female Community Health Volunteer (FCHV).

Given how long it has been since the HDK was introduced in Nepal and supported by various donor agencies, it is surprising that the proportion of deliveries done at places other than health institutions that used HDK was only 10.6%. Additional efforts are needed to propagate the use of HDK in home deliveries to increase the coverage of HDK.

Table 9.4 also provides data on differentials in the use of HDK. As indicated, HDK was used more often by younger mother, urban mother, and educated mother. For example, as the age decreased, mother tended to use HDK more often, indicating a negative association between HDK use and the mother's age. However, a positive association between educational status of the mother and use of HDK was observed. For example, among women with no formal schooling, the level of HDK use was 8 %, which increased to 29% among mothers with secondary or higher education. Likewise, literate mothers were three times more likely than illiterate mothers to use HDK during delivery.

By geographic areas, the least proportion of HDK use was observed in the

Fig. 9.3: Persons assisting in the last delivery of mothers.

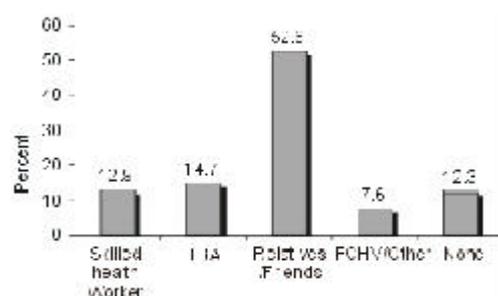


Table 9.4: Percentage distribution of mothers who delivered their last baby in places other than health institutions by use of Home Delivery Kits and by selected variables.

Selected Variable	Mothers (%) who		(n)
	Used HDK	Not used HDK	
Age in Categories			
Less than 25	12.7	87.3	1,635
25-34	11.3	88.7	2,182
35+	5.1	94.9	879
Residence			
Urban	20.5	79.5	293
Rural	10.0	90.0	4,403
Ecological Zone			
Mountains	4.7	95.3	426
Hills	9.4	90.6	2,101
Terai	13.0	87.0	2,169
Sub Region			
Eastern Terai	15.5	84.5	621
Central Terai	11.8	88.2	819
Western Terai	8.5	91.5	272
Mid-western Terai	12.8	87.2	265

Mid-western and Far-western Mountains, while the highest was found in the Central Hills.

Umbilical cord

The use of unsterilised instruments to cut the umbilical cord can cause tetanus in newborn babies, which is one of the main causes of neonatal deaths. It is still surprising that in nearly a quarter of the deliveries done at places other than health institutions, instruments that were not sterilised were used to cut the umbilical cord. Seventy percent of the mothers reported using a new blade to cut the umbilical cord, while 6% of mothers reported using a boiled instrument to cut the umbilical cord. Table 9.5 provides the frequency

Table 9.5 Percentage distribution of mothers who delivered their last baby at places other than health institutions by instruments used for cutting umbilical cord.

Instruments	Mothers (%)
New blade	69.9
Old blade boiled	4.9
Old blade not boiled	4.6
Other instruments boiled	0.8
Other instruments not boiled	19.9

According to the findings of the survey, 39% of mothers who delivered their babies at places other than health institutions, did not use anything to treat the cord, while 21.8% said oil and ghee were used to treat the cord. Other substances were used in 26% of the cases. In this regard, two things are striking: first, the use of cowdung in 0.5% of the cases resulting in very high chances of infection, and second, the high proportion of mothers that did not use anything to treat the cord. This suggests the need for intensive IEC activities to inform mothers and delivery attendants about the possibility of infection, and the morbidity and mortality due to infection of the umbilical cord.

Size of baby at birth

In Nepal, as most deliveries take place at home, babies are not weighed at birth. Thus, it is difficult to know whether the child was

Table 9.4: Continued

Selected Variable	Mothers (%) who		n
	Used HDK	Not used HDK	
Far-western Terai	15.7	84.3	191
Eastern Hills	9.0	91.0	346
Central Hills	15.4	84.6	468
Central Hills (ex Ktm Valley)	17.9	82.1	390
Western Hills	9.2	90.8	589
Mid-western Hills	6.4	93.6	466
Far-western Hills	4.7	95.3	232
E + C + W Mountains	7.5	92.5	213
MW + FW Mountains	1.9	98.1	213
Kathmandu Valley	2.6	97.4	78
Educational status of mother			
None	7.7	92.3	3,749
Primary	14.8	85.2	399
Secondary and above	28.7	71.3	506
Literacy			
Illiterate	7.2	92.8	3,563
Literate	21.5	78.5	1,133
Nepal	10.6	89.4	4,696

Note: Abbreviations same as in table 7.1

Fig. 9.4: Instruments used to cut umbilical cord.

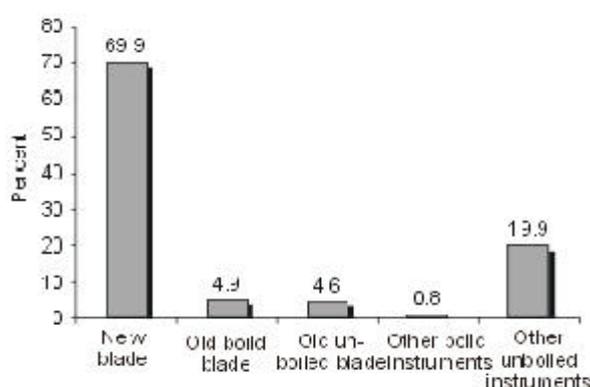
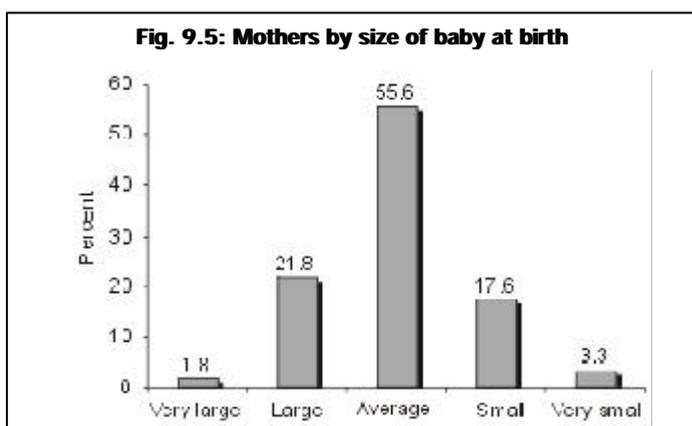


Table 9.6: Percentage distribution of mothers who delivered their last baby at places other than health institutions by items used to treat umbilical cord.

Items used to treat	Mother (%)
Nothing	39.4
Anti-septic	5.4
Ash	4.6
Oil ghee	21.8
Cowdung	0.5
Herbal medicine	2.5
Others	25.9



underweight at birth or not. One simple way that has been adopted in demographic health surveys is to ask mothers what size their babies were at birth on a three-to-five-point scale which is based on the subjective judgement of mothers. Thus, children said to be below average size are regarded as underweight babies. In fact, many average-size babies are also underweight, but they are often not regarded as being underweight. Through this method, it is possible to arrive at a conservative estimate of underweight

Table 9.7: Percentage distribution of mothers by size of last baby at birth by selected variables.

Selected Variable	Mothers (%) who delivered last baby sized				
	Very large	Large	Average	Small	Very small
Age in Categories					
Less than 25	1.9	22.8	54.2	17.5	3.6
25-34	2.1	21.7	56.3	16.7	3.2
35+	1.0	19.8	56.4	19.9	3.0
Residence					
Urban	1.4	21.5	59.0	15.3	2.7
Rural	1.9	21.8	55.2	17.8	3.4
Ecological Zone					
Mountains	1.1	16.5	56.7	19.7	6.0
Hills	1.2	21.6	59.8	15.1	2.3
Terai	2.6	22.8	51.2	19.6	3.8
Sub Region					
Eastern Terai	1.5	27.7	53.6	15.9	1.3
Central Terai	4.2	14.7	55.2	19.5	6.5
Western Terai	3.1	29.2	48.3	15.7	3.8
Mid-western Terai	0.7	33.7	38.0	26.1	1.4
Far-western Terai	1.0	16.2	47.0	30.8	5.1
Eastern Hills	1.4	25.8	61.1	10.7	1.1
Central Hills	1.9	18.0	67.4	9.5	3.2
Central Hills (ex Ktm Valley)	2.8	20.3	63.3	9.3	4.2
Western Hills	1.1	20.7	63.2	13.9	1.1
Mid-western Hills	0.6	30.8	41.3	25.2	2.1
Far-western Hills	0	9.4	64.5	20.9	5.1
E+ C+ W Mountains	2.2	21.5	50.2	19.3	6.7
MW+ FW Mountains	0.0	10.8	63.7	20.3	5.2
Kathmandu Valley	0.4	14.2	74.4	9.8	1.2
Educational status of mother					
None	1.5	19.4	55.9	19.5	3.8
Primary	3.2	29.0	52.9	13.1	1.9
Secondary and above	2.8	28.4	55.8	11.0	2.0
Literacy					
Illiterate	1.3	18.8	56.7	19.6	3.6
Literate	3.1	29.1	52.8	12.5	2.5
Nepal	1.8	21.8	55.6	17.6	3.3

Note: Abbreviations same as in table 7.1

babies. The data obtained in this survey is provided in Table 9.7

Postpartum check-up received
The Safe Motherhood Programme recommends that mothers should have postpartum check-ups soon after delivery. In Nepal, postnatal check-ups are very limited. Usually postnatal check-ups take place only when there is a problem or the delivery is at a health institution. According to BCHIMES, only 7% of mothers receive postpartum check-ups within 24 hours.

Problems experienced during delivery
Mothers were asked if they experienced any danger signs during or after delivery of the last baby. The common danger signs were prolonged labour, excessive bleeding, foul smelling vaginal discharge, and convulsions. Data obtained are summarised in Table 9.8. As the table indicates, nearly a third of mothers experienced the three major problems of prolonged labour, excessive bleeding, and convulsion, while 19% of mothers experienced foul smelling vaginal discharge.

It is surprising that 69 % of mothers did not go anywhere for treatment despite experiencing problems during delivery or after delivery. Only 13% reported going to government health institutions for these problems. The frequency distribution of where they went for treatment is provided.

Summary and Conclusions:

In view of the fact that a large proportion of deliveries are still being carried out at home, the following issues need to be addressed:

- a) **IEC activities on the importance of health institution delivery need to be emphasised through different media including interpersonal communication during ANC services.**
- b) **In case health institution delivery is not possible, then the importance of the presence of medically trained personnel during delivery needs to be emphasised through different media.**

Only about 10 percent of the mothers use the home delivery kit (HDK) when delivering at home. As HDK is in expensive and effective, IEC activities need to focus more on the importance and use of HDK during delivery to avoid infections to the mother and her baby.

In nearly 25% of the home deliveries, unsterilised instruments cut the umbilical chord, thus this could be a major source of infection. For this, awareness-creating programs need to be geared up to discourage family from using unsterilised instruments in cutting the umbilical chord.

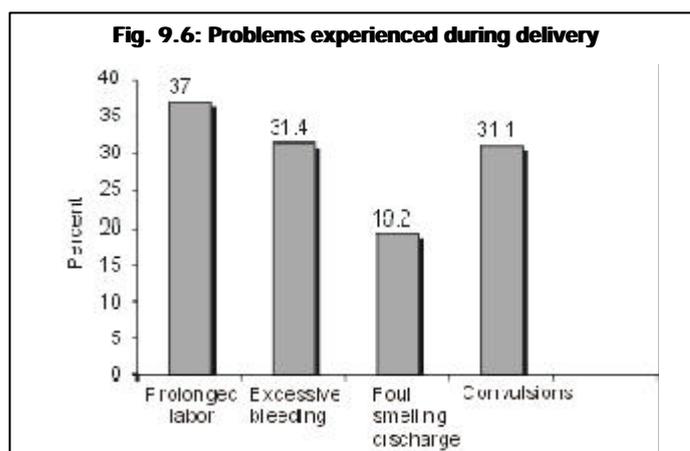


Table 9.8: Mothers (%) who experienced problems during delivery of last child by type of problems.

Type of problems	Mothers (%) who	
	Had problems	Did not have problems
Prolonged labour	37.0	63.0
Excessive bleeding	31.4	68.6
Foul smelling discharge	19.2	80.8
Convulsion	31.1	68.9

Table 9.9: Frequency distribution of mothers who faced problems during or after delivery of last baby by place visited for treatment.

Places visited for treatment	Mothers (%)
Nowhere	69.3
Trained TBA	2.5
Untrained TBA	0.9
FCHV	1.6
HP/SHP	2.3
HC/PHCC/Hospital	10.9
Private clinic	0.5
Pharmacy	1.4
Faith healers	1.7
Home service by medical personnel	2.3

Chapter 10

INFORMATION, EDUCATION AND COMMUNICATION (IEC)

Laxmi Raman Ban

Introduction

In the first long-term health plan, health education was stated as the means to improve and impart health knowledge, develop favourable attitudes and adopt health practices for personal hygiene, environmental health, nutrition education and the control of communicable diseases. Therefore, the health education programme has been developed to be an integral part of all promotive, preventive and curative health services, besides creating health awareness and seeking people's active participation towards better health by using various communication methods and media. Such a mandate prompted the Ministry of Health to give high priority to health education and communication and to establish the National Health Education Information and Communication Centre (NHEICC) in 1993 under the National Health Policy and Structure 1991.

The policy stated that one of the main reasons for the low health standards of people is the lack of public awareness of health matters. Therefore, health education was to be provided in an effective manner from the centre to rural areas. Toward this, political workers, teachers, students, social organisations, women and volunteers would be mobilised extensively up to the ward level. Further, the national Reproductive Health/Family Planning and IEC Strategy 1996 included the development of the NHEICC as a resource centre for health education and communication. The NHEICC is launching various activities to create health awareness and support for on-going health programmes using various methods and media of which the print and electronic media are the most common.

In Nepal, health education and communication programmes have been carried out for the past four decades through the use of various methods and media, but the effectiveness of these methods in media have not been assessed. A few studies on Family Planning CDD and ARI-related issues, however, have incorporated questions on media (such as the NFHS1996). Specific surveys on the use of electronic and print media are necessary to examine how far these media are utilised by targeted audiences to change their existing health and health-related knowledge, beliefs and practices. This BCHIMES survey focuses on IEC for family planning, HIV/AIDS but it also provides data on media utilisation practices of the targeted audiences. The findings of this survey are expected to be highly useful for communication experts and media planners.

Unless and otherwise stated women, throughout this chapter 10, refers to currently married women of reproductive age.

Table 10.1: Percentage distribution of women by number of times newspaper/ magazine read in a week by selected variables.

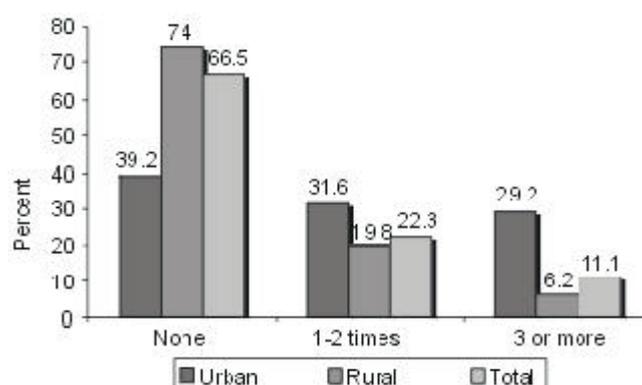
Selected Variable	Women (%) who read newspaper/magazine in a week			
	None	1-2 times	3 or more	No.
Age in Categories				
Less than 25	68.1	23.9	7.9	1,289
25-34	63.4	21.7	14.9	1,145
35+	69.4	19.9	10.7	535
Residence				
Urban	39.2	31.6	29.2	638
Rural	74.0	19.8	6.2	2,332
Ecological Zone				
Mountains	81.9	16.0	2.1	142
Hills	67.3	20.7	12.1	1,541
Terai	64.0	25.0	11.0	1,286
Sub Region				
Eastern Terai	62.7	29.7	7.6	529
Central Terai	71.9	19.4	8.7	338
Western Terai	40.8	30.4	28.7	199
Mid-western Terai	76.5	16.7	6.8	133
Far-western Terai	74.7	18.7	6.6	87
Eastern Hills	74.4	21.7	3.9	255
Central Hills	53.2	25.0	21.8	567
Central Hills (ex Ktm Valley)	79.4	15.0	5.6	250
Western Hills	67.9	21.9	10.2	467
Mid-western Hills	90.9	7.9	1.2	206
Far-western Hills	88.1	6.5	5.4	46
E+ C+ W Mountains	78.3	19.6	2.1	103
MW+ FW Mountains	91.3	6.5	2.2	39
Kathmandu Valley	32.7	32.9	34.4	317
Educational status of women				
None	91.8	7.1	1.1	706
Primary	81.6	14.2	4.2	821
Secondary and above	44.7	35.0	20.3	1399
Nepal	66.5	22.3	11.1	2,970

Note: Abbreviations same as in table 7.1

Exposure of currently married women of reproductive age to print media

Women were asked how often they read newspapers/magazines in a week. As presented in Table 10.1, the exposure to the print media of women by age group did not show any clear pattern. Urban women (61%) were twice as likely to be exposed to print media than were rural women (26%). This could be due to the higher level of education of urban women. It could also be that urban women belong to a higher socio-economic status and thus have access to these sources.

Fig. 10.1: Number of times newspaper/ magazine read in a week.



The women of the Terai and Hills (36% and 33%, respectively) have a higher rate of access to the print media as compared to their mountain counterparts (18%). This is because of the higher availability and accessibility of these resources in the Terai and Hill areas.

Exposure to the print media was highest in Kathmandu Valley, where 67% of women read newspapers/magazines at least once a week. The second highest exposure was in the Western Terai, with an exposure to the print media of 59%. The least exposure to the print media was observed in the Mid-western Hills (9%) and Mid-western and Far-western Mountains (9%).

The educational level was an important factor in respondents' exposure to the print media. This can easily be seen when one looks at the exposure to print media by the educational status of respondents. As the table indicates, the higher the educational level of women, the higher their exposure to the print media. For example, among women that did not have any formal schooling, exposure to the print media was 8%, which increased to 55 % when the educational level was secondary school or higher.

Exposure to radio

It is common for Nepalese to listen to the radio of neighbours/friends if they do not have their own. All women in this survey were thus asked how many times they listened to the radio in a day. As presented in Table 10.2, 44% of women listened to the radio at least once a day. There was no discernible association of age with radio listening, although older women listened to the radio slightly less than younger women.

Table 10.2: Percentage distribution of women by number of times they listened to radio in a day and by selected variables.

Selected Variable	Women (%) who listened to radio in a day				(n)
	None	1 time	2 times	3 or more times	
Age in Categories					
Less than 25	54.0	11.8	21.9	12.2	2,777
25-34	55.3	11.9	22.0	10.7	3,544
35+	59.4	10.9	20.1	9.5	3,056
Residence					
Urban	37.5	13.4	31.2	17.9	1,133
Rural	58.9	11.3	20.1	9.8	8,245
Ecological Zone					
Mountains	61.5	16.6	18.1	3.8	738
Hills	43.7	15.4	28.1	12.9	4,280
Terai	67.8	7.0	15.4	9.8	4,360
Sub Region					
Eastern Terai	63.3	5.9	16.6	14.2	1,414
Central Terai	78.5	5.7	9.8	6.0	1,518
Western Terai	62.2	5.3	18.8	13.7	632
Mid-western Terai	57.7	11.2	24.5	6.5	466
Far-western Terai	63.2	14.8	16.4	5.7	330
Eastern Hills	43.3	10.4	27.2	19.2	676
Central Hills	39.4	14.3	29.9	16.4	1,339
Central Hills (ex Ktm Valley)	50.0	6.3	31.5	12.2	787
Western Hills	34.0	17.9	33.6	14.5	1,162
Mid-western Hills	53.8	18.4	23.6	4.2	727
Far-western Hills	69.0	15.1	14.6	1.2	375
E+ C+ W Mountains	51.8	17.5	24.9	5.9	392

Table 10.2: Continued.

Selected Variable	Women (%) who listened to radio in a day				(n)
	None	1 time	2 times	3 or more times	
MW+ FW Mountains	72.6	15.5	10.4	1.5	346
Kathmandu Valley	24.8	25.6	27.5	22.1	552
Educational status of women					
None	66.0	10.1	17.0	6.8	7,062
Primary	35.7	18.3	29.1	16.9	854
Secondary and above	20.6	14.4	38.6	26.4	1,406
Literacy					
Illiterate	67.8	9.8	15.7	6.6	6,537
Literate	28.8	15.6	35.1	20.5	2,735
Nepal	56.3	11.6	21.4	10.7	9,378

Note: Abbreviations same as in table 7.1

Urban women were more likely to listen to the radio as compared to rural women. In urban areas, 63% of women listened to the radio at least once a week as compared to 41% of rural women.

The lowest exposure to radio messages was obtained for the Central Terai (22%), while the highest exposure was recorded for Kathmandu Valley (75%).

As in the case of the print media, radio listening was also associated with the educational level of respondents. For example, among women with no formal schooling, exposure to the radio was 34%, which increased to 79% among women with secondary education or higher. A similar pattern of association in radio listening was observed by the literacy status of respondents. Literate women listened (71%) to the radio twice more often than did their illiterate counterparts (32%).

Exposure to television

There are fewer television sets than radios in the country, especially in the Hills and Mountains where the supply of electricity is very limited and TV sets are less common. All women were asked how often they watched television in a week. The data is summarised in Table 10.3

Table 10.3: Percentage distribution of women by number of times they watched TV in a week and by selected variables.

Selected Variable	Women (%) who watched TV in a week				(n)
	None	1 time	2 times	3 or more times	
Age in Categories					
Less than 25	82.5	1.0	1.9	14.6	2,754
25-34	79.9	2.2	2.5	15.4	3,506
35+	81.6	2.2	2.3	14.0	3,039
Residence					
Urban	37.1	2.7	4.6	55.6	1,126
Rural	87.3	1.7	1.9	9.1	8,173
Ecological Zone					
Mountains	95.9	0.8	0.9	2.4	721
Hills	79.9	0.8	2.1	17.1	4,263
Terai	80.1	3.0	2.6	14.4	4,315

Table 10.3: Continued.

Selected Variable	Women (%) who watched TV in a week				(n)
	None	1 time	2 times	3 or more times	
Sub Region					
Eastern Terai	73.5	3.5	3.0	20.0	1,412
Central Terai	84.7	3.0	2.4	9.8	1,482
Western Terai	69.8	2.0	4.0	24.1	633
Mid-western Terai	93.8	1.2	0.3	4.7	460
Far-western Terai	88.3	4.4	1.4	6.0	327
Eastern Hills	93.6	0.7	1.2	4.5	674
Central Hills	53.4	1.0	2.7	42.9	1,334
Central Hills (ex Ktm Valley)	77.1	1.6	2.4	18.9	782
Western Hills	85.5	1.3	3.4	9.7	1,159
Mid-western Hills	97.5	0.1	0.9	1.6	724
Far-western Hills	98.6	0.4	0.4	0.6	373
E+ C+ W Mountains	92.1	1.6	1.8	4.5	377
MW+ FW Mountains	100.0	-	-	-	345
Kathmandu Valley	19.8	0.1	3.1	77.0	552
Educational status of women					
None	89.2	1.6	1.7	7.5	6,994
Primary	70.8	3.0	4.4	22.8	849
Secondary and above	47.5	2.3	3.7	46.4	1,400
Literacy					
Illiterate	90.0	1.4	1.6	7.1	6,472
Literate	60.4	2.9	3.8	33.0	2,722
Nepal	81.2	1.8	2.2	14.7	9,299

Note: Abbreviations same as in table 7.1

Nepalese women who watched television at least once a week made up 19% of all women. Table 10.3 did not show any discernible association between TV watching and age of the respondent.

Urban women (63%) were nearly five times more likely to be exposed to TV than were their rural counterparts (13%).

The lowest exposure to TV was found in the Mid- and Far-western Mountains (100% of women did not watch TV), while the highest level of TV watching was observed for Kathmandu Valley (80%).

A distinct positive association between education/literacy and TV watching can be observed in Table 10.3. For example, among women who did not have any formal schooling the proportion of those watching TV at least once a week was 11 %, which gradually increased to 53 % when the level of education increased to secondary schooling or higher. This can partly be explained by the fact that women who are literate/educated come from higher socio-economic group.

“Ghanti Heri Haad Nilnu”

Ghanti heri haad nilnu is a radio programme designed to provide information on different aspects of health, including family planning. This programme was designed in 1995/96 and has been on the air since then. The overall coverage of this programme in this survey, was 29%. The coverage in 1996 was 21.2%, indicating a 7 % increase in the last four years.

Younger and urban women listened to this programme more often than did their rural and older counterparts. Women in the Hill and Terai listened to this programme slightly more often than did women in the Mountains. The highest exposure to this programme was observed in the Eastern Hills (47%) and Kathmandu Valley (42%). The lowest exposure to this programme was found in the Far-western Hills and Mid-western and Far-western Mountains (15%).

Literate women were nearly three times (54%) more likely to have been exposed to this programme than were their rural counterparts (18%). Likewise, exposure to the programme increased as the education level of the respondents increased. For example, among women with no formal schooling exposure to “Ghanti Heri Haad Nilnu” was 20 %, which doubled to 44% for women with primary level education. It tripled when the educational level increased to secondary schooling or higher (61%)

Women were asked what they were interested to see or hear on TV or radio. Data in Table 10.5 shows the most women expressed their likings to see or hear information on sanitation (39%), followed by diarrhoea (35%), family planning methods (33%) and its side effects (22%).

Women were also asked to indicate the suitable time these messages should be broadcast. Table 10.6 shows that 6 to 9 o'clock in the evening as the most

Table 10.5: Frequency distribution of women by preferences for information to receive for radio or TV.

Information on	Women(%)
FP methods	32.9
Side effects	21.6
STD	7.2
HIV/AIDS	4.9
Safe Motherhood	8.4
Diarrhoea	35.0
ARI	7.3
Immunisation	11.0
Nutrition	9.3
Sanitation	38.7
Others	34.1

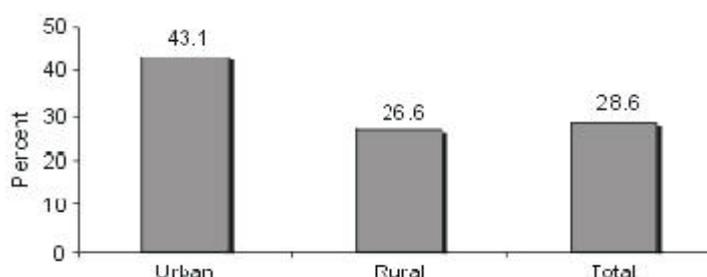
Note: Percentage total exceeded 100 because of multiple responses (upto 3)

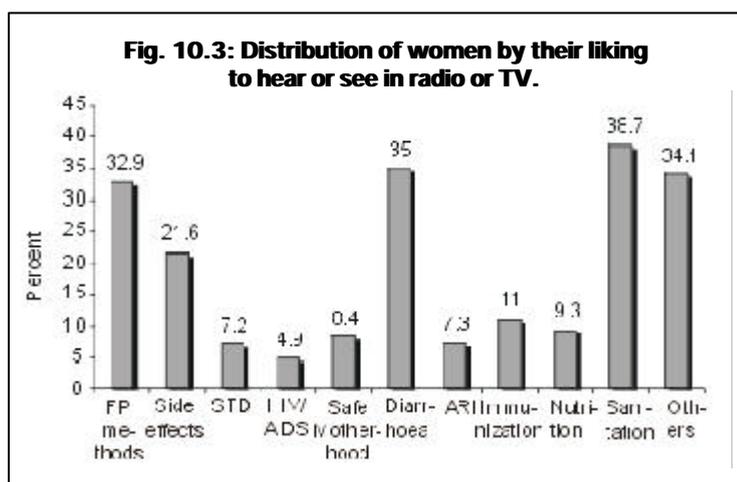
Table 10.4: Percentage distribution of women who have listened to “Ghanti Heri Haad Nilnu” programme by selected variables.

Selected Variable	Women (%) who		(n)
	Listened	Not listened	
Age in Categories			
Less than 25	30.7	69.3	2,781
25-34	29.5	70.5	3,555
35+	25.6	74.4	3,061
Residence			
Urban	43.1	56.9	1,139
Rural	26.6	73.4	8,258
Ecological Zone			
Mountains	30.4	69.6	739
Hills	33.8	66.2	4,309
Terai	23.2	76.8	4,347
Sub Region			
Eastern Terai	32.9	67.1	1,408
Central Terai	10.6	89.4	1,519
Western Terai	25.2	74.8	631
Mid-western Terai	30.4	69.6	463
Far-western Terai	25.7	74.3	329
Eastern Hills	46.8	53.2	676
Central Hills	36.3	63.7	1,350
Central Hills (ex Ktm Valley)	32.2	67.8	795
Western Hills	28.0	72.0	1,161
Mid-western Hills	35.9	64.1	748
Far-western Hills	14.7	85.3	374
E+ C+ W Mountains	43.8	56.2	392
MW+ FW Mountains	15.3	84.7	347
Kathmandu Valley	42.2	57.8	555
Educational status of women			
None	20.3	79.7	7,086
Primary	43.4	56.6	848
Secondary and above	61.4	38.6	1,405
Literacy			
Illiterate	18.2	81.8	6,555
Literate	53.8	46.2	2,729
Nepal	28.6	71.4	9,397

Note: Abbreviations same as in table 7.1

Fig. 10.2: Percentage of women who have listened to “Ghanti Heri Haad Nilnu” programme.





preferred broadcasting time among Nepalese women. Thus, the concept of 'prime time' is also relevant in Nepal.

Women who had heard of family planning were asked what their source was (Table 10.7). This was a multiple response question and the women were allowed up to three responses. Therefore, percentages shown in this table do not add to 100. The most common source of information on family planning for these women in Nepal was radio (48%), followed by friends (31%), health worker (26%), and husband (23%).

Table 10.6: Percentage distribution of women by preferred broadcasting time to hear or watch health/FP messages by selected variables.

Selected Variable	Women (%) by preferred broadcasting time				
	M6-9	M9-12	D12-6	E6-9	N9-12
Age in Categories					
Less than 25	8.9	4.6	16.6	61.8	8.2
25-34	8.3	4.0	14.1	64.4	9.2
35+	8.4	3.4	16.9	63.6	7.7
Residence					
Urban	9.1	2.3	23.2	57.5	7.9
Rural	8.4	4.3	14.6	64.3	8.5
Ecological Zone					
Mountains	4.7	1.5	12.2	77.3	4.3
Hills	10.3	4.4	14.4	64.2	6.7
Terai	6.9	3.8	17.9	60.3	11.0
Sub Region					
Eastern Terai	6.5	0.7	9.7	81.1	1.9
Central Terai	1.2	2.7	13.5	54.3	28.3
Western Terai	12.1	11.7	39.5	31.2	5.5
Mid-western Terai	9.9	3.1	11.3	59.9	15.8
Far-western Terai	9.2	5.3	30.6	46.6	8.3
Eastern Hills	3.9	0.4	10.1	83.5	2.2
Central Hills	1.9	0.2	15.4	72.7	9.7
Central Hills (ex Ktm Valley)	1.1	-	9.2	84.0	5.7
Western Hills	26.7	10.3	16.5	39.6	6.9
Mid-western Hills	6.7	6.8	10.2	70.4	5.9
Far-western Hills	8.9	3.6	24.7	55.2	7.6
E+ C+ W Mountains	4.5	-	9.0	84.5	2.0
MW+ FW Mountains	4.9	3.6	16.8	67.2	7.5
Kathmandu Valley	2.8	0.3	21.4	62.0	13.4
Educational status of women					
None	7.7	4.0	15.5	64.6	8.2
Primary	9.2	4.2	16.7	62.0	8.0
Secondary and above	10.6	3.9	16.5	59.9	9.1
Literacy					
Illiterate	8.2	4.1	16.1	63.2	8.4
Literate	9.0	3.8	15.3	63.5	8.4
Nepal	8.5	4.0	15.8	63.3	8.4

Note: Abbreviations same as in table 7.1
M = Morning, D = Day, E = Evening

Likewise, women who had heard of STD and HIV/AIDS were also asked to provide information on how they came to know about STDs and HIV/AIDS (Table 10.8 and 10.9). As seen in Table 10.8, radio was the most common source of information regarding STDs (83%). Other common sources of information were TV (40%), friends and relatives (37%), and husband (28%)

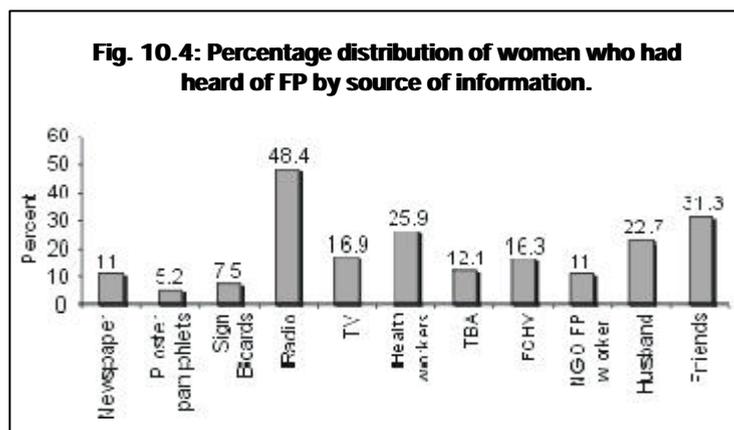


Table 10.7: Frequency distribution of women who had heard of FP by source of information.

Source of information	Women who had heard of FP (%)
Newspapers	11.0
Poster/pamphlets	5.2
Signboards	7.5
Radio	48.4
TV	16.9
Health workers	25.9
TBA	12.1
FCHV	16.3
NGO FP workers	11.0
Husband	22.7
Friends	31.3

Note: Same as in table 10.5

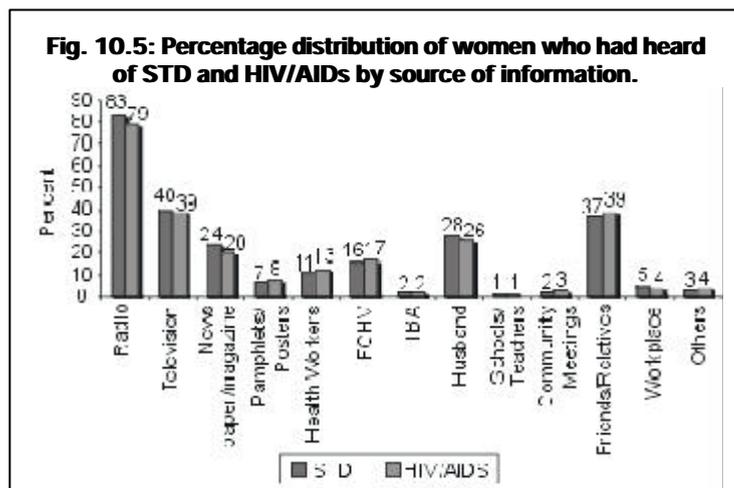


Table 10.8: Frequency distribution of women who had heard of STD by source of information.

Source of information	Women who had heard of STD (%)
Radio	82.7
Television	39.8
Newspaper/magazine	24.4
Pamphlets/posters	7.3
Health workers	10.7
FCHV	15.5
TBA	2.4
Husband	27.6
Schools/teachers	0.7
Community meetings	2.3
Friends/relatives	36.5
Workplace	4.5
Others	2.7

Note: Same as in table 10.5

Table 10.9 Frequency distribution of women who had heard of HIV/AIDS by source of information.

Source of information	Women who had heard of HIV/AIDS (%)
Radio	78.9
Television	38.9
Newspapers/magazines	19.5
Pamphlets/posters	8.1
Health workers	13.0
FCHV	16.6
TBA	2.1
Husband	25.9
Schools/teachers	0.6
Community meetings	3.0
Friends/relatives	38.7
Workplace	4.3
Others	3.8

Note: Same as in table 10.5

A similar picture emerges (Table 10.9) regarding the source of information about HIV/AIDS. Again radio, television, husband and relatives were the major sources of information.

Summary and Conclusion

Among the major source of health information including family planning radio clearly stands out. Thus to be more effective in providing the radio messages on health the prime time period of 6-9 PM needs to be taken into account.

Other factors responsible for information on FP and health are health workers. These health workers need to be trained on interpersonal communication methods, so that they can effectively communicate the messages, through individual as well as group meetings.

Although there have been a positive increase in the listening of “Ghaanti Heri Haad Nilnu” over the years, to make it more effective local media as well as local language transmissions need to be further emphasised. It should be noted here that in fact certain IEC activities have already been decentralised and IEC materials are also being produced locally.

Chapter 11

STD/HIV/AIDS

Sharad Raj Nepal

Introduction

The disease known as Acquired Immune Deficiency Syndrome (AIDS) was first recognised in 1981. It is estimated that in 2000, nearly 5.3 million people in the world were newly infected with HIV. Among them 4.7 million were adults, 2.2 million women and 0.6 million children under 15 years. An estimated 36.1 million people are living with HIV/AIDS, among them 34.7 million adults and 1.4 million children under 15 years of age. Of the 34.7 million adults infected with HIV/AIDS, 16.4 million are women. In the year 2000 alone, about three million people died of AIDS. Of that number, 2.5 million were adults and nearly half of them were women. Half a million children under 15 have also died during the same period. The total number of deaths due to AIDS since the beginning of the epidemic has been estimated at 21.8 million. Of that number, 17.5 million were adults, of which 9 million were women. The total number of children less than 15 years of age who have died of AIDS is 4.3 million (UNAIDS Press release, 28 November 2000).

Epidemiological studies have identified sexual intercourse, intravenous injection, blood transfusions and fetal transmission from infected mothers as the main routes of transmission of HIV. The AIDS pandemic has had a tragic impact on the fulfilment of children's rights and has greatly affected the trajectory of human development in the 1990s. Nearly 95% of all HIV-infected people live in developing countries. It is a disease of poverty, ignorance and gender discrimination that has the greatest effect on poor women and children.

AIDS was first identified in Nepal in 1988. During the early 1990s, HIV Sero-Prevalence surveys showed a gradual increase in the prevalence of HIV infection among people with sexually transmitted diseases (STD) and among female commercial sex workers. The potential of HIV spreading in Nepal is considered to be high because of the extensive use of commercial sex workers, high rates of STD, low condom use, and pockets of intravenous drug users. As of December 31, 2000, a total of 455 AIDS cases (out of total HIV) and 1807 HIV positive case (including AIDS cases) have been reported to the Ministry of Health's National Centre for AIDS and STD Control (NCASC).

As indicated by Table 11.1, the reported number of female sex workers infected with HIV reached 384. A total of 1,095 HIV cases were found among clients of SWs/STD, of

Unless and otherwise stated "women", throughout the BCHIMES findings in this chapter 11, refers to currently married women of reproductive age (15-49 years).

which 1,063 were male and 32 were female. The data shows that 110 housewives were also infected with HIV. A total of 195 male intravenous drug users were also infected with HIV. Thus, a total of 1,807 persons were infected with HIV as of 31 December 2000, as reported to NCASC. It should be noted that these figures are only indicative of different modes of transmission of HIV in Nepal. It is not possible to gauge the magnitude of the HIV/AIDS problem by these figures alone

Table 11.2 shows that 19 children under 14 years of age were infected with HIV. A large number of persons aged 14 - 39 were infected with HIV (1676). In this age range, the number of men infected with AIDS was more than twice (1165) that of women (511). Among persons aged 40 and above, a total of 112 persons were found to be infected, and of them 19 were women.

His Majesty's Government of Nepal is committed to the prevention and control of AIDS and other STDs in Nepal through a multi-sectoral approach. In 1987, the government initiated the National AIDS Prevention and Control Project (NAPCP), with financial and technical support from World Health Organization (WHO). Organisational change in the Ministry of Health in 1993 established the NCASC (National Centre for AIDS and STD Control). The Centre's aim is to prevent HIV transmission in the following areas:

- a) Sexual transmission of HIV,
- b) Blood transfusion, and
- c) Prenatal transmission.

The main activities of NCASC are the following:

- a. Screening of blood samples,
- b. Conducting the surveillance of AIDS and HIV,
- c. Design and publication of information, education and communication (IEC) materials for the general public and high-risk groups,
- d. Distribution and promotion of condoms,
- e. Treatment of STDs,
- f. Launching advocacy and counselling persons at risk and those who tested positive for HIV, and
- g. Training of health workers in the clinical management of HIV/AIDS patients.

NCASC's main strategies for reducing the rate of HIV/AIDS infection is to bring about a change in sexual practices and behavior and to promote accurate knowledge regarding the mode of HIV/AIDS transmission, as well as the ways of its prevention.

Knowledge of STD/AIDS

In the BCHIMES survey, currently married women between 15-49 were asked whether they had heard of AIDS and STD. Among currently married women aged 15-49 in Nepal, 38.9 % had heard of AIDS and 29.6 % had heard of STD (Table 11.3).

The knowledge of AIDS and STD was higher among urban women (71% and 58%, respectively) than their rural counterparts (35 % and 26 %). More women from the Hill region had heard of AIDS and STD (45% and 36%, respectively) than those in the Mountain

Table 11.1: Cumulative HIV infection by sub-group and sex*

Sub-group	Male	Female	Total
Sex workers (SW)	-	384	384
Clients of SWs/STD	1,063	32	1,095
Housewives	-	110	110
Blood transmission /transplant	2	1	3
Injecting drug use	195	1	196
Peri-natal transmission	11	8	19
Total	1,271	536	1,807

*Source:NCASC

Table 11.2: Cumulative HIV infection by age group*

Age Group	Male	Female	Total
Less than 14	13	6	19
14 to 39	1,165	511	1,676
40 and above	93	19	112
Total	1,271	536	1,807

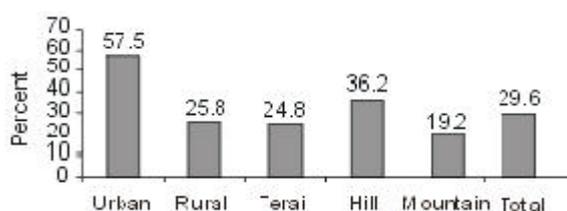
*Source:NCASC

Table 11.3: Percentage distribution of women that had heard about STD and AIDS by selected variables.

Selected Variable	Women (%)			Women (%)		
	Heard of STD	Not heard of STD	No of women	Heard of AIDS	Not heard of AIDS	No of women
Residence						
Urban	57.5	42.5	1,139	70.8	29.2	1,139
Rural	25.8	74.2	8,282	34.6	65.4	8,282
Ecological zone						
Terai	24.8	75.2	4,368	34.1	65.9	4,368
Hills	36.2	63.8	4,313	45.2	54.8	4,313
Mountains	19.2	80.8	740	30.7	69.3	740
Sub-Region						
Eastern Terai	30.9	69.1	1,414	43.8	56.2	1,414
Central Terai	15.3	84.7	1,523	25.3	74.7	1,523
Western Terai	30.9	69.1	634	33.5	66.5	634
Mid-western Terai	28.9	71.1	467	36.4	63.6	467
Far-western Terai	25.1	74.9	330	31.6	68.4	330
E+ C+ W Mountains	27.5	72.5	392	47.1	52.9	392
F+ MW Mountains	9.9	90.1	347	12.2	87.8	347
Kathmandu Valley	61.6	38.4	555	84.9	15.1	555
Eastern Hills	33.9	66.1	676	46.1	53.9	676
Central Hills	43.2	56.8	1,350	66.6	33.4	1,350
C. Hills (ex Ktm Valley)	30.3	69.7	795	53.8	46.2	795
Western Hills	45.4	54.6	1,162	39.7	60.3	1,162
Mid-western Hills	22.5	77.5	750	27.4	72.6	750
Far-western Hills	14.3	85.7	375	19.3	80.7	375
Literacy						
Illiterate	15.8	84.2	6,572	23.5	76.5	6,572
Literate	62.9	37.1	2,736	76.1	23.9	2,736
Educational Status						
No/ schooling	17.6	82.4	7,105	26.1	73.9	7,105
Primary	45.6	54.4	853	60.9	39.1	853
Secondary +	80.0	20.0	1,406	90.1	9.9	1,406
Age in categories						
15-24	35.4	64.6	2,786	45.3	54.7	2,786
25-34	30.4	69.6	3,565	39.4	60.6	3,565
35+	23.4	76.6	3,070	32.6	67.4	3,070
Nepal	29.6	70.4	9,421	38.9	61.1	9,421

Note: Abbreviations same as in table 7.1

Fig. 11.1 Women who had heard of STD by geographical areas



region (31 % and 19%, respectively). Women from the Far- and Mid-western Mountains had heard least about AIDS (12 %).

This result shows that the proportion of women in Nepal who have heard of AIDS was higher than that of sexually transmitted diseases (STD). This may be due to the high priority given to this programme and the high publicity accorded to HIV/AIDS in Nepal through various communication media like radio, television, newspapers/

magazines, pamphlets, hoarding boards and friends/relatives.

Of the sub-regions, the proportion of women who had heard of AIDS (85%) and STD (62%) was highest in Kathmandu valley. After Kathmandu Valley, more women in the Central Hills had heard of AIDS and STD than women in other regions.

The knowledge of AIDS varies with literacy status and level of education of women. Among literate women, 76 % had heard about AIDS as compared to only 24% of illiterate women. Table 11.3 shows that women’s schooling is positively related to the knowledge of AIDS and STD. Ninety percent of women with secondary education or higher had heard of AIDS, whereas only 80 % of these women had heard of STD. The proportion of women with no schooling were 26% and 18%, respectively.

The knowledge of AIDS and STD was negatively associated with age. That is, as age increased fewer women had heard about AIDS. For example, among younger women (aged 15-24 years), the proportions of women who had knowledge of AIDS and STDs was 45% and 35%, respectively, and it decreased to 33 % and 23% for women aged 35 and over. This may be an indication that younger women are more literate and thus exposed to more media than their older counterparts.

Knowledge of HIV testing place and ever been tested

Women that had heard of AIDS were asked if they knew a place for HIV-testing. If they did, they were asked if they had been tested. The data is summarised in Table 11.4.

As indicated in Table 11.4, we find that 30% of women aged 15-49 years living in urban areas were knowledgeable about an HIV-testing place and 2% had been tested. By comparison, only 6.8 % of rural women knew of a testing site and had been tested for HIV. More women from the Terai knew about HIV-testing places (9%) as compared to women in the Mountains (3%). No women had been tested for HIV in the

Fig. 11.2: Women who had heard of AIDS by Geographical areas.

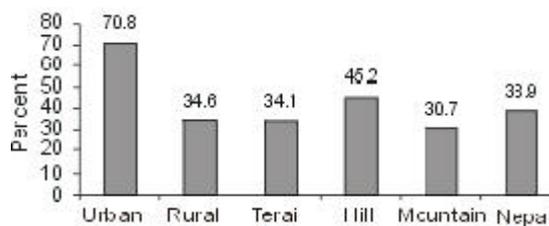


Fig. 11.3: Women who had heard of STD by educational status.

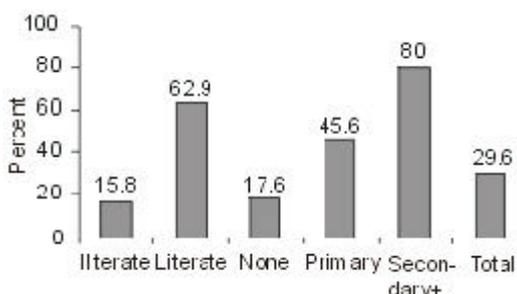


Fig. 11.4: Women who had heard of AIDS by educational status.

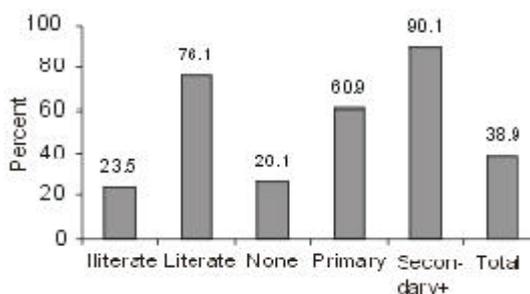


Fig. 11.5: Women who had heard of STD by age categories.

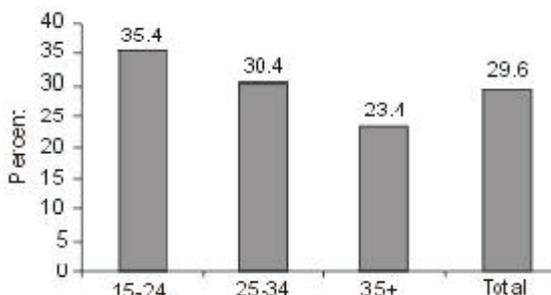


Fig. 11.6: Women who had heard of AIDS by age categories.

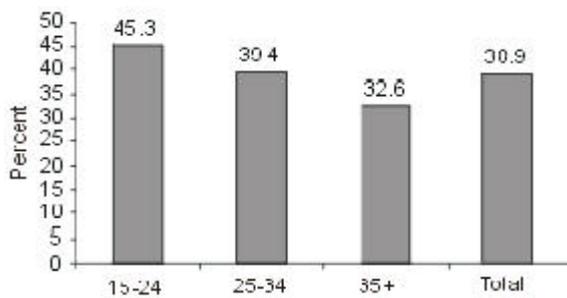


Fig. 11.7: Women who had knowledge of HIV testing place by geographical areas.

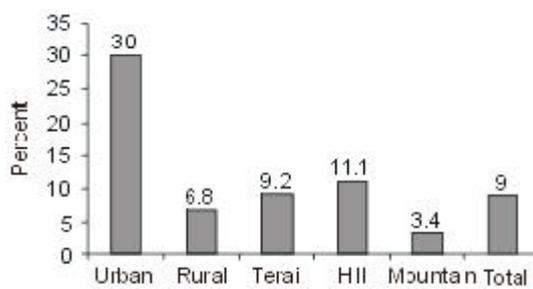


Fig. 11.8: Women who had been tested for HIV for geographical areas.

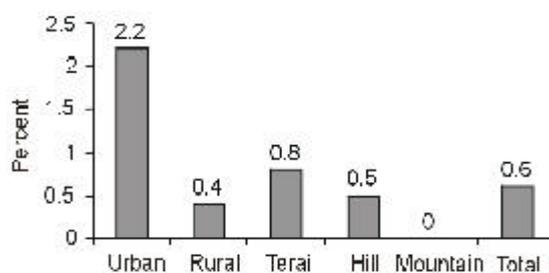
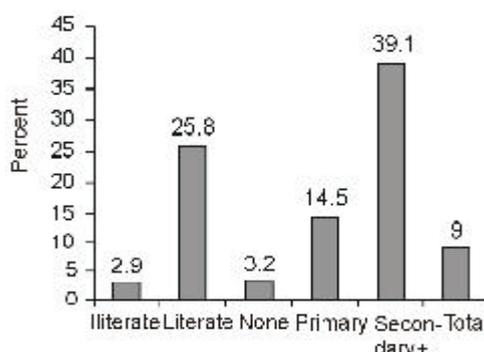


Fig. 11.9: Knowledge of HIV testing place by educational status.



Mountains. Women in the Western Terai who knew about an HIV-testing place made up 13%, whereas those in the Central Hills made up 15%. One percent of women had been tested for HIV in the Mid-western Terai, but none had been tested in the Eastern, Central, Western, Far- and Mid-western Mountains and the Central Hills (excluding Kathmandu Valley).

Again, 3% of illiterate women knew about an HIV-testing place and 0.1% of women aged 15-49 had been tested for HIV. Among literate women, 26% of them had knowledge about an HIV-testing place and 2% had been tested.

Similarly, 3% of women with no education had knowledge about an HIV-testing place and only 0.1% had ever been tested. Fifteen percent of women with primary-level schooling had knowledge about an HIV-testing place and 0.4% had ever been tested. As the level of education increased, so did the number of women aware of an HIV-testing place and of women ever tested for HIV. For example, among women with no formal education, 3.2% were aware of an HIV-testing place and 0.1% had ever been tested. This figure increased to 39.1% and 3.3% when the educational level increased to secondary-level schooling and higher.

Knowledge of ways to avoid AIDS

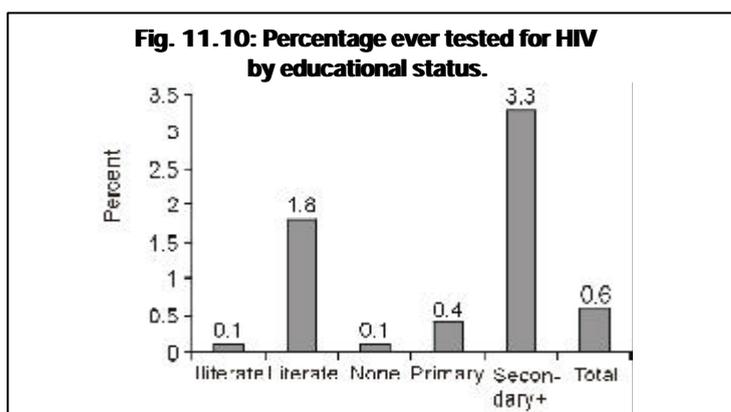
In the current survey, overall 70% of women who had heard of HIV/AIDS responded that there were ways to avoid AIDS (Table 11.5). Eighty-two percent of urban women said that they were aware of methods to avoid AIDS as compared to 67% of rural women.

Seventy-five percent of women in the Hills and 51% of women in the Mountains said there were ways to avoid AIDS. Eighty-four percent of women from the Western Hills said they knew the methods to avoid AIDS as compared to 72% of women in the Western Terai. In Kathmandu Valley, 90% of women said they knew the methods to avoid AIDS.

About 81% of literate women and 56% of illiterate women said they knew the methods to avoid AIDS. A similar picture

emerges considering the variable of education level. For example, 57% of women with no schooling were aware of methods to prevent HIV/AIDS, while it was 88% for women with secondary education or higher.

A negative relationship between age and awareness of avoiding getting AIDS was also observed. While 61% of older women (35+) were aware of methods to avoid AIDS, the figure for younger women (15-24) was 76%.



Perceptions about healthy-looking person

Overall, 60 % of currently married women between 15-49 said that a healthy-looking person could have HIV. In urban areas, 73% women said that a healthy-looking person could be infected with HIV. In the rural areas, 56% of women believed that a healthy-looking person can be HIV positive.

In the Hills, 62 % of women said that a healthy-looking person could have HIV. While 70% of women in the Mid-western Hills said that a healthy-looking person could have HIV, In Kathmandu Valley, 82% of women believed a healthy-looking person can have HIV.

In Nepal overall, 70% of literate women believed a healthy-looking person can have HIV as compared to only 47% of illiterate women that believed this. Likewise, 77% of

Table 11.4: Percentage distribution of women by their knowledge of HIV-testing place, by whether they had been tested and by background variable.

Background variable	Women (%)		No. of women	Women (%)		No. of women
	Knew the HIV testing place	Did not Know the HIV testing place		Ever been tested for HIV/AIDS	Not tested for HIV/AIDS	
Residence						
Urban	30.0	70.0	1,139	2.2	97.8	1,139
Rural	6.8	93.2	8,286	0.4	99.6	8,286
Ecological Zone						
Terai	9.2	90.8	4,372	0.8	99.2	4,372
Hills	11.1	88.9	4,313	0.5	99.5	4,313
Mountains	3.4	96.6	740	0.0	100.0	740
Sub-region						
Eastern Terai	13.5	86.5	1,414	1.0	99.0	1,414
Central Terai	4.4	95.6	1,526	0.4	99.6	1,526
Western Terai	13.2	86.8	634	1.1	98.9	634
Mid-western Terai	8.0	92.0	468	1.3	98.7	468
Far-western Terai	6.8	93.2	330	0.4	99.6	330
E+ C+ W Mountains	4.6	95.4	392	0.0	100.0	392
F+ MW Mountains	2.1	97.9	348	0.0	100.0	348
Kathmandu Valley	31.3	68.7	555	2.1	97.9	555
Eastern Hills	7.0	93.0	676	0.3	99.7	676
Central Hills	14.5	85.5	1,386	0.8	99.2	1,386
C. Hills (ex Ktm Valley)	3.2	96.8	831	0.0	100.0	831
Western Hills	15.9	84.1	1,162	0.4	99.6	1,162
Mid-western Hills	5.3	94.7	750	0.2	99.8	750
Far-western Hills	2.1	97.9	375	0.1	99.9	375

Table 11.4: Continued.

Background variable	Women (%)		No. of women	Women (%)		No. of women
	Knew the HIV testing place	Did not Know the HIV testing place		Ever been tested for HIV/AIDS	Not tested for HIV/AIDS	
Literacy						
Illiterate	2.9	97.1	6,573	0.1	99.9	6,573
Literate	25.8	74.2	2,738	1.8	98.2	2,738
Educational status of mother						
No schooling	3.2	96.8	7,106	0.1	99.9	7,106
Primary	14.5	85.5	855	0.4	99.6	855
Secondary +	39.1	60.9	1,406	3.3	96.7	1,406
Age in categories						
15-24	11.3	88.7	2,786	0.4	99.6	2,786
25-34	10.7	89.3	3,568	0.9	99.1	3,568
35+	6.9	93.1	3,071	0.5	99.5	3,071
Nepal	9.0	91.0	9,425	0.6	99.4	9,425

Note: Abbreviations same as in table 7.1

Table 11.5: Women who had heard of HIV/AIDS by their knowledge of whether HIV/AIDS can be avoided (methods to avoid HIV/AIDS) and by their perception about healthy looking person, for geographical areas.

Background variable	Women (%) who said there was a way to avoid HIV/AIDS.			Women (%) who believe healthy looking persons can have HIV/AIDS			No. of women heard of HIV/AIDS
	YES	NO	No. of women	Can have HIV/AIDS	Can not have HIV/AIDS	Don't Known	
Residence							
Urban	82.1	17.9	807	72.9	9.3	17.9	806
Rural	66.9	33.1	2,858	56.2	12.6	31.2	2,841
Ecological Zone							
Terai	67.0	33.0	1,492	58.2	12.7	29.1	1,486
Hills	75.0	25.0	1,948	62.1	11.2	26.7	1,939
Mountains	50.9	49.1	225	51.0	12.3	36.8	222
Sub-Region							
Eastern Terai	68.2	31.8	620	62.2	10.4	27.4	618
Central Terai	59.8	40.2	385	46.0	8.8	45.2	385
Western Terai	71.8	28.2	213	60.6	20.6	18.8	212
Mid-western Terai	66.4	33.6	170	63.4	20.0	16.6	168
Far-western Terai	78.0	22.0	104	65.8	13.0	21.1	104
E + C + W Mountains	45.6	54.4	183	52.1	10.6	37.3	181
F + MW Mountains	74.0	26.0	42	45.9	19.4	34.7	42
Kathmandu Valley	89.9	10.1	471	81.9	6.4	11.6	471
Eastern Hills	59.1	40.9	310	59.0	6.5	34.5	306
Central Hills	77.3	22.7	899	64.5	8.2	27.3	898
C. Hills (ex Ktm Valley)	63.4	36.6	428	45.3	10.2	44.4	427
Western Hills	84.1	15.9	461	58.5	16.5	25.0	461

Table 11.5: Continued.

Background variable	Women (%) who said there was a way to avoid HIV/AIDS.			Women (%) who believe healthy looking persons can have HIV/AIDS			No. of women heard of HIV/AIDS
	YES	NO	No. of women	Can have HIV/AIDS	Can not have HIV/AIDS	Don't Known	
Mid-western Hills	72.1	27.9	205	69.7	19.7	10.6	203
Far-western Hills	64.8	35.2	73	48.2	10.0	41.8	71
Literacy							
Illiterate	56.1	43.9	1,542	46.8	12.2	40.9	1,529
Literate	80.8	19.2	2,081	69.8	11.5	18.7	2,077
Educational status							
No schooling	57.2	42.8	1,850	48.2	12.2	39.7	1,836
Primary	73.4	26.6	520	59.9	14.9	25.2	516
Secondary +	88.2	11.8	1,266	77.1	10.1	12.9	1,266
Age in three categories							
15-24	75.8	24.2	1,258	65.4	11.3	23.4	1,255
25-34	72.2	27.8	1,406	59.3	12.7	28.0	1,396
35+	60.6	39.4	1,001	53.7	11.4	34.9	997
Nepal	70.3	29.7	3,665	59.9	11.9	28.3	3,64

Note: Only for currently married women, aged 15-49 years who had heard of HIV/AIDS

Table 11.6: Percentage distribution of women who had heard of HIV/AIDS by their perceptions about the chance of getting AIDS to them for different background variables.

Background Variable	Women (%) perceived as their chance of getting AIDS is						Number Of women
	Small	Moderate	High	Not possible at all	Not known	Others	
Residence							
Urban	13.8	1.4	1.5	57.9	25.3	-	804
Rural	14.5	2.5	0.5	60.0	22.5	0.1	2,838
Ecological Zone							
Terai	15.4	3.5	1.3	61.7	17.9	0.1	1,485
Hills	14.5	1.6	0.2	57.6	26.1	-	1,935
Mountains	6.0	0.3	0.5	61.6	31.6	-	223
Sub-Region							
Eastern Terai	12.8	2.8	2.5	65.7	15.9	0.3	618
Central Terai	4.1	-	-	69.3	26.5	-	383
Western Terai	24.6	1.3	1.7	58.3	14.2	-	212
Mid-western Terai	66.4	12.0	0.8	40.2	10.6	-	169
Far-western Terai	20.2	11.0	-	41.8	17.0	-	104
E+ C+ W Mountain	4.5	0.4	0.6	61.4	33.0	-	181
FW+ MW Mountain	12.1	-	-	62.6	25.3	-	42
Eastern Hills	6.4	1.0	-	84.3	8.3	-	306
Central Hills	10.1	0.3	-	50.2	39.5	-	895
C.Hills(ex Ktm Valley)	6.6	-	-	54.2	39.2	-	427
Western Hills	19.3	0.8	0.4	57.7	21.8	-	461
Mid-western Hills	36.9	9.5	0.9	48.7	4.0	-	203

Table 11.6: Continued.

Background Variable	Women (%) perceived as their chance of getting AIDS is						Number Of women
	Small	Moderate	High	Not possible at all	Not known	Others	
Far-western Hills	10.7	2.9	0.7	61.5	24.2	-	70
Kathmandu Valley	13.2	0.5	-	46.5	39.8	-	468
Literacy							
Illiterate	11.1	2.3	0.4	56.3	29.9	0.1	1,526
Literate	16.8	2.3	0.9	61.9	18.0	-	2,075
Schooling status of women							
No schooling	12.1	2.3	0.3	57.6	27.6	0.1	1,833
Primary	16.7	2.6	1.4	55.7	23.6	-	516
Secondary & above	16.7	2.2	1.0	63.9	16.3	-	1,264
Age in three categories							
15-24	16.0	3.4	0.5	61.9	18.1	-	1,252
25-34	14.5	1.9	1.1	59.3	23.1	-	1,396
35+	12.1	1.4	0.3	56.7	29.2	0.2	995
Total	14.4	2.3	0.7	59.5	23.1	0.1	3,643

Note: Abbreviations same as in table 7.1

women with secondary education or higher believed a healthy-looking person can have HIV as compared to only 48% of women with no education that believed this.

Younger women (65%) were more likely than older women (54%) to believe that a healthy-looking person could have HIV. This may reflect the fact that younger women are better educated.

Chances of getting AIDS

Women who had heard about AIDS were also asked whether their chance of getting AIDS was none, small, moderate, or great/high. The data obtained is summarised in Table 11.6.

Fourteen percent of such women said they had a small risk of getting AIDS, 2% said they had a moderate chance, and only 0.7 % believed they were at great/high risk. Respondents that said they had no risk at all made up 60%, while 23% of women did not know.

About 60% of women in rural areas said they had no risk at all of getting AIDS as compared to 58% of urban women. Sixty-two percent of women in the Terai and Mountains said they had no risk of getting AIDS. Twenty-five percent of women in the Western Terai said their chances of getting HIV/AIDS was small, while 2% believed they had a great/high chance of getting AIDS.

In Kathmandu Valley, 13% of women said they had a small chance of getting AIDS, while 47 % believed they were at no risk.

Among literate women, 17% said that they had a small risk of getting AIDS, while 0.9 % believed they were at high risk of getting AIDS. Women with secondary education and above that believed they had a small chance of getting AIDS made up 17%, while 1% said they were at a high risk. Women without any schooling that said they had a small risk of getting AIDS was 12% and those that believed they were at high risk was 0.3%.

Very minor differentials in this variable were observed by the age of respondents. While 16 % of younger women (15-24) said they had a small chance of getting AIDS, older women (35+) that said they had a small chance of getting AIDS was 12 %.

Methods for avoiding AIDS

Women who responded that there were ways to avoid AIDS were asked to list the methods they know. Where answers were not forthcoming, the women were probed with possible answers, both correct and incorrect. (see questionnaire for details).

Sixty-seven percent of women who had heard of HIV/AIDS believed that safe sex can be an important way to avoid getting AIDS, while 81% believed that the use of condom was one of the main methods of avoiding AIDS. Nearly 47% of women said that having only one sex partner could help prevent AIDS (Table 11.7). Seventy-one percent of

Table 11.7: Percentage distribution of women who had heard of HIV/AIDS with knowledge of methods to avoid HIV/AIDS by method and by background variables.

Methods to avoid HIV/AIDS	Ecological Zone			Residence		Literacy Status	
	Tera	Hills	Mountains	Urban	Rural	Illiterate	Literate
Safe sex	70.6	65.8	59.5	73.4	65.3	57.5	72.7
Abstain from sex	14.8	12.7	8.4	9.7	14.5	12.1	14.0
Use condoms	79.1	83.5	78.5	85.4	80.2	78.6	83.3
Only one sex partner	34.6	57.6	26.0	60.9	42.5	40.9	50.7
Avoid sex with prostitute	28.0	52.1	16.4	50.1	38.0	41.9	40.6
Avoid sex with homosexual	2.7	3.1	0.4	6.0	1.7	0.8	3.9
Avoid blood transfusion	24.0	21.0	15.3	22.9	21.6	15.0	25.4
Avoid injection	13.9	14.7	7.3	19.5	12.2	11.3	15.6
Avoid kissing	0.6	0.9	0.6	0.9	0.7	0.8	0.8
Avoid mosquito bites	3.2	2.1	0.0	1.6	2.7	2.2	2.6
Treatment from traditional healer	0.3	0.1	0.0	0.4	0.1	0.1	0.3
Others	2.1	0.2	4.6	1.2	1.2	1.4	1.1

Methods	Level of Education (Schooling Status)			Age in three categories			Total	
	None	Primary	Secondary and above	15-24	25-34	35+	%	N
Safe sex	58.5	67.0	76.1	68.6	67.9	64.8	67.4	1,737
Abstain from sex	13.5	12.5	13.6	13.3	13.3	13.2	13.3	343
Use condoms	77.8	85.0	83.8	83.1	81.8	78.7	81.6	2,102
Only one sex partner	40.6	47.2	53.8	48.1	51.2	39.2	47.2	1,217
Avoid sex with prostitute	39.6	35.8	44.3	39.3	41.6	43.2	41.1	1,060
Avoid sex with homosexual	0.8	0.4	5.6	3.0	3.3	1.8	2.8	73
Avoid blood transfusion	16.5	19.3	27.8	23.5	22.7	18.2	21.9	565
Avoid injection	12.4	11.7	16.6	12.9	14.8	14.7	14.1	363
Avoid kissing	0.8	0.1	1.0	1.0	0.9	0.2	0.8	20
Avoid mosquito bites	2.0	0.6	3.6	3.0	1.8	2.7	2.5	63
Treatment from traditional healer	0.1	0.0	0.4	0.4	0.2	0.0	0.2	5
Others	1.5	0.5	1.1	0.9	0.9	2.0	1.2	30

women from the Terai said that safe sex was the main method of avoiding AIDS. Women that believed this in the Hills and the Mountains made up 66% and 60%, respectively.

Seventy-nine percent of women from both the Terai and Mountains and 84% from the Hills said that the use of condoms helps to prevent AIDS. Eighty-three percent of literate and 79 % of illiterate women believed that using condoms can prevent AIDS. It should be borne in mind that only 5% of women in Nepal are currently using condoms for family planning. Fifty-percent of urban women said that the method of avoiding AIDS was not to have sex with a prostitute.

Very little differentials by age were observed in this variable. For example, for all the three categories of age, the use of condoms, safe sex, and avoiding sex with a prostitute were described as the three main ways of avoiding getting AIDS.

Source of information about sexually transmitted diseases

In the BCHIMES survey, women were asked about their main sources of information (upto 3) about sexually transmitted diseases (STD). Approximately 83% of women said that they got information about STD from the radio. Similarly, the second and third popular sources were television and friends/relatives. About 40% of women said they heard about STD on television and 37% said they heard about STD from friends and relatives.

According to respondents in the Terai and the Hills, the main sources of information about STD were radio, television and friends/relatives, whereas in the Mountain areas the three most common sources of information were radio, husband, and friends/relatives. There were also some differences regarding the three main sources of information about STD according to urban/rural residence. For urban mothers, the main three sources of information were radio (89%), television (81%), and newspapers/ magazines (42 %), whereas the three main sources of information for women of the rural area were radio (81%), friends/relatives (39 %), and husband (31%).

Among women who were illiterate, the three most common sources were radio (76%), friends/relatives (49 %), and husband (35%), whereas for literate mothers were radio (87%), television (47%) and newspaper/magazines (38%). Similarly, the three

Table 11.8: Percentage distribution of women who had heard of STD by source of information and by background variables.

Source of information	Ecological Zone			Urban/Rural Residence		Literacy Status	
	Terai	Hills	Mountains	Urban	Rural	Illiterate	Literate
Radio	73.9	88.3	87.4	88.7	80.8	75.5	86.8
Television	45.9	38.2	11.6	80.8	27.2	27.8	47.0
Newspapers/ magazines	27.0	23.7	12.0	42.1	18.9	1.6	38.3
Pamphlets/posters	5.1	9.0	5.8	9.4	6.6	2.8	10.0
Health workers	9.3	11.8	8.6	4.4	12.6	12.4	9.7
FCHV	12.1	18.6	7.2	2.6	19.5	18.8	13.5
TBA	1.5	3.1	0.5	0.4	3.0	3.7	1.6
Husband	29.3	26.8	21.5	17.8	30.6	35.3	22.9
School teachers	0.6	0.6	1.6	0.7	0.6	0.3	0.9
Community meetings	2.2	2.4	2.1	0.7	2.8	3.4	1.7
Friends/relatives	40.3	35.3	20.4	27.7	39.2	48.6	29.3
Workplace	3.2	5.4	4.1	1.9	5.3	8.0	2.2
Others	3.1	2.2	5.4	0.7	3.3	2.7	2.7

Table 11.8: Continued.

Source of information	Level of Education (Schooling Status)			Age in three categories			Total	
	None	Primary	Secondary and above	15-24	25-34	35+	%	N
Radio	77.2	85.5	87.6	80.5	84.1	83.5	82.7	2,296
Television	27.5	32.7	56.0	34.2	43.0	42.8	39.8	1,106
Newspapers/ magazines	2.5	22.6	49.5	30.2	25.2	15.2	24.4	678
Pamphlets/posters	3.5	6.9	11.7	11.3	6.0	3.7	7.3	202
Health workers	12.3	9.6	9.2	10.6	10.3	11.2	10.7	296
FCHV	18.9	15.5	11.9	15.5	16.4	14.2	15.5	431
TBA	3.2	3.8	1.0	2.7	2.7	1.4	2.4	66
Husband	32.2	33.8	20.1	29.0	26.4	27.3	27.6	765
School teachers	0.2	0.4	1.3	1.1	0.6	0.1	0.7	18
Community meetings	3.6	2.8	0.8	1.4	2.7	3.0	2.3	65
Friends/relatives	47.9	36.8	23.9	36.7	34.5	39.4	36.5	1,014
Workplace	7.5	2.7	1.5	3.6	3.8	6.7	4.5	125
Others	4.0	0.7	1.9	2.8	1.7	4.0	2.7	75

Note: based on multiple response up to 3.

most popular media for mothers with secondary education and higher were radio (88 %), television (56%), and newspapers/magazine (50 %).

The three most common sources of information for younger women (15-24 years) regarding STDs were radio (81%), friends and relatives (37%), and television (34%). With older women (35+), the three most common sources were radio (84%), television (43%), and friends and relatives (39%).

Source of information about HIV/AIDS

In the BCHIMES survey, women were asked what their three main sources of information about HIV/AIDS were. Overall, 79 % of women said they got their information about

Table 11.9: Percentage distribution of women who had heard of HIV/AIDS by source of information and by background variables.

Source of information	Ecological Zone			Urban/Rural Residence		Literacy Status	
	Terai	Hills	Mountains	Urban	Rural	Illiterate	Literate
Radio	70.9	84.6	81.4	85.7	76.9	72.1	83.9
Television	43.2	38.9	10.7	77.7	27.9	27.4	47.3
Newspapers/ magazines	20.4	20.0	8.7	35.7	14.9	0.9	33.4
Pamphlets/posters	6.2	9.9	5.7	10.3	7.5	4.0	11.3
Health workers	12.0	14.5	6.6	3.6	15.6	16.1	10.8
FCHV	14.3	19.2	9.0	3.5	20.3	20.2	13.8
TBA	1.5	2.8	0.6	0.5	2.6	3.2	1.3
Husband	27.0	26.1	17.4	17.2	28.4	29.4	23.1
School teachers	0.7	0.5	0.7	0.6	0.6	0.2	0.9
Community meetings	3.7	2.5	2.4	0.8	3.6	3.9	2.3
Friends/relatives	40.9	38.3	27.5	34.5	39.9	48.3	31.7
Workplace	4.0	4.3	5.6	2.4	4.8	7.1	2.2
Others	4.9	2.4	7.7	1.1	4.5	4.0	3.6

Table 11.9: Continued.

Source of information	Level of Education (Schooling Status)			Age in three categories			Total	
	None	Primary	Secondary and above	15-24	25-34	35+	%	N
Radio	73.1	81.5	86.1	77.7	80.7	77.7	78.9	2,890
Television	27.0	36.4	57.2	34.3	40.6	42.2	38.9	1,425
Newspapers/ magazines	2.0	17.4	45.9	24.7	20.6	11.3	19.5	713
Pamphlets/posters	4.2	8.4	13.7	11.9	6.8	5.1	8.1	297
Health workers	15.4	10.2	10.7	11.9	12.7	14.6	13.0	475
FCHV	20.4	14.2	11.8	16.6	16.2	17.2	16.6	608
TBA	2.8	2.9	0.9	2.6	2.3	1.4	2.1	78
Husband	27.6	32.4	20.4	29.4	24.6	23.4	25.9	950
School teachers	0.2	0.3	1.4	1.0	0.6	0.1	0.6	22
Community meetings	4.0	2.6	1.7	1.8	3.9	3.2	3.0	110
Friends/relatives	48.3	38.7	25.1	38.8	36.7	41.4	38.7	1,418
Workplace	6.7	3.6	0.9	3.1	4.8	5.1	4.3	156
Others	5.4	3.0	1.7	3.0	3.3	5.4	3.8	138

Note: Same as in table 11.8

HIV/AIDS from the radio. The second and third popular sources were television (39%) and friends/relatives (39%).

According to Table 11.9, the three main sources of information about HIV/AIDS among women in the Terai were radio (70.9%), television (43.2%), and friends/relatives (40.9%), whereas in the Hills it was radio (84.6%), television (38.9%), and friends/relatives (38.3%). In the Mountains, the three most common sources of information were radio (81.4%), friends/relatives (27.5%), and husband (17.4%). There were some differences regarding the three main sources of information about HIV/AIDS in terms of urban/rural residence. For urban women, the three main sources of information were radio (86%), television (78%), and newspapers/magazines (36%), whereas for rural women these were radio (77%), friends/relatives (40%), and husband (28%).

For illiterate women the three most effective media for information on HIV/AIDS were radio (72%), friends/relatives (48%), and husband (29%), whereas for literate women it was radio (84%), television (47%) and friends/relatives (32%). For women with secondary level education and above, the three popular media were radio (86%), television (57%) and newspapers/magazines (46%).

The three most common sources of information for younger women (15-24) regarding STDs were radio (78%), friends and relatives (39%), and television (34%). For older women (35+), the three sources were radio (78%), television (42%), and friends and relatives (41%).

Summary and Conclusion

The BCHIMES findings indicate that some changes have occurred in this area. The 1996 Nepal Family Health Survey is the most recent survey regarding HIV/AIDS awareness at national level. In 1996, the survey found that 26.8 % of women had heard of AIDS. BCHIMES has found that this proportion has increased to 38.9 % in 4 years.

Furthermore, in 1996, the proportion of women who reported the use of condoms as the most effective means of preventing the transmission of HIV/AIDS was 31 %, whereas in the current survey, this figure has increased to 82 %.

Although positive changes have taken place over the years, there is still much to be done.

On HIV/AIDS, while an increasing number of women have heard of HIV/AIDS, the fact remains that the majority of women (61.1%) have not. The low knowledge of STD is also a concern in that women with STDS are more at risk of HIV transmission.

The findings on how women learned about STD and AIDS suggests that different communication strategies are required depending on the target group.

Chapter 12

BREAST FEEDING

Krishna Prasad Shrestha

Breast Feeding Practices

Mothers who had children under 5 years (0-59 months) of age were asked questions related to breast feeding (BF) for their last child. Output tables are presented on the basis of responses given by the mothers, with the exception of Table 12.7, where the data is based on the children survived up to the date of survey.

Information on breastfeeding was obtained from 4995 currently married women aged 15-49 who had at least one child under 5 years of age. It was reported that 98% of all mothers ever breastfed their last child regardless of duration. Table 12.1 presents the distribution of mothers who ever breastfed their last child by background characteristics.

Table 12.1 shows that among the ecological zones, the highest proportion of mothers breastfeeding was in the Hills (99%), while the lowest was in the Terai (97%). Proportion of literate mothers or mothers having higher educational status who breastfed was higher as compared to those who were illiterate or have low educational status (99.4% for literate vs 97.4% for illiterate and 99.4% for primary and secondary+ vs 97.5% for no schooling). But 1996 NFHS found that mothers with higher educational levels were less likely to

Table 12.1: Distribution of mothers who breastfed their last child by background characteristics.

Background Characteristics	Mothers				Total	
	Who breastfed		Who did not breastfeed		No.	Percent
	No.	Percent	No.	Percent	No.	Percent
Mother's Literacy						
Illiterate	3,413	97.4	91	2.6	3,504	100.0
Literate	1,424	99.4	8	0.6	1,432	100.0
Mother's Education						
No Schooling	3,628	97.5	93	2.5	3,721	100.0
Primary	451	99.4	3	0.6	454	100.0
Secondary+	778	99.4	5	0.6	783	100.0
Ecological Zones						
Terai	2,247	96.9	73	3.1	2,321	100.0
Hill	2,228	99.0	23	1.0	2,251	100.0
Mountain	418	98.9	5	1.1	423	100.0

Table 12.1: Continued.

Background Characteristics	Mothers				Total	
	Who breastfed No.	Percent	Who did not breastfeed No.	Percent	No.	Percent
Sub Regions						
Eastern Terai	668	99.7	2	0.3	670	100.0
Central Terai	823	93.6	57	6.4	880	100.0
Western Terai	305	98.5	5	1.5	310	100.0
Mid-Western Terai	264	98.2	5	1.8	269	100.0
Far-Western Terai	186	97.4	5	2.6	191	100.0
(E+ C + W) Mountains	214	98.7	3	1.3	216	100.0
(MW+ FW) Mountains	205	99.0	2	1.0	207	100.0
KTM Valley	229	99.3	2	0.7	231	100.0
Eastern Hill	334	99.4	2	0.6	336	100.0
Central Hill	609	97.6	15	2.4	624	100.0
Central Hill(Ex KTM)	380	96.7	13	3.3	393	100.0
Western Hill	598	100.0	-	-	598	100.0
Mid-Western Hill	459	99.8	1	0.2	460	100.0
Far-Western Hill	229	97.7	5	2.3	234	100.0
Sex of Child						
Male	2,574	98.3	45	1.7	2,618	100.0
Female	2,320	97.6	56	2.4	2,376	100.0
Residence						
Urban	497	96.8	17	3.2	513	100.0
Rural	4,397	98.1	84	1.9	4,481	100.0
Nepal	4,894	98.0	101	2.0	4,995	100.0

Note: E= Eastern; C= Central; W= Western; MW= Midwestern; FW= Farwestern; Ex KTM= Excluding Kathmandu Valley

breastfeed than mothers with lower levels of education (93.8% for SLC+ vs 96.6% for primary) (MoH 1997, p. 140). There were no significant differences in both the findings.

Of the sub regions, Western and Mid Western Hill mothers breastfed almost universally and the lowest rate was found for Central Terai (93.6%). Comparing urban and rural areas, it was found that higher percent of mothers from rural areas breastfed compared to their urban counterparts. However there was not much difference by residence, sub regions, sexes and by literacy.

The 1991 Nepal Fertility, Family Planning and Health Survey (NFFHS-1991) found that 97 percent of children born 5 years before the survey were breastfed. NFHS 1996 found that 98 percent of all children born during the three years before the survey were breastfed. (MoH 1997, p.139). The BCHIMES result, that breastfeeding is almost universal in Nepal, was also found in previous years.

Information was collected from the mothers on when breastfeeding was initiated. The figures are presented in Table 12.2. It was found that 16.6% of mothers at the national level started breastfeeding within one hour of birth. At the national level, 44.6% of mothers started breastfeeding between 1 to 2 hours after birth. Table 12.2 shows clearly that about three fifths (61.2%) less than three hours, 72.3% in less than 5 hours and three fourths (76.3%) within 8 hours were ever breastfed at the national level. But 18.2% of children were found breastfed within one hour in NFHS 1996 and 22% in NFHS 1991 (MoH 1998, p.139). According to NMIS Cycle 4, 1997, 37% of children were breastfed within 1 hour of birth, 54% of children breastfed within the first two hours (NPCS/UNICEF, 1997 p.10)

If we examine the data by mother's literacy status, a higher percentage of literate mothers started to breastfeed within one hour of birth compared to illiterate mothers

Table 12.2: Percentage distribution of mothers who started to breastfeed their new born children by the lapse of time after birth and by background characteristics.

Background Characteristics	Mothers (%) who started to breast feed within					Total	
	< 1 hr	1-2 hr	3-4 hr	5-8 hr	9+ hr	Number	Percent
Mother's Literacy							
Illiterate	15.5	42.9	10.2	4.0	27.5	3,373	100.0
Literate	19.4	48.3	13.4	4.6	14.2	1,416	100.0
Mother's Education							
No Schooling	15.8	43.3	10.3	3.9	26.7	3,584	100.0
Primary	15.0	48.0	13.2	4.2	19.5	447	100.0
Secondary+	21.4	47.7	13.8	5.1	12.0	776	100.0
Ecological Zones							
Terai	11.0	36.1	9.7	3.4	39.8	2,217	100.0
Hills	21.1	52.9	12.1	4.7	9.2	2,211	100.0
Mountain	22.2	45.1	12.6	5.0	15.0	416	100.0
Sub Regions							
Eastern Terai	10.3	44.7	8.7	2.1	34.2	665	100.0
Central Terai	5.3	14.4	6.9	5.0	68.4	816	100.0
Western Terai	6.3	43.5	21.8	3.9	24.5	298	100.0
Mid-Western Terai	24.0	64.3	5.1	1.1	5.5	252	100.0
Far-Western Terai	28.8	50.6	12.7	2.9	5.0	186	100.0
(E+ C+ W) Mountains	13.4	47.1	16.4	6.6	16.5	212	100.0
(MW+ FW) Mountains	31.4	43.0	8.7	3.3	13.5	204	100.0
KTM Valley	22.2	61.4	9.7	2.0	4.7	229	100.0
Eastern Hill	24.6	56.6	7.9	2.4	8.4	333	100.0
Central Hill	21.2	51.5	14.0	4.9	8.4	608	100.0
Central Hill(Ex KTM)	20.7	45.4	16.6	6.5	10.7	379	100.0
Western Hill	17.4	45.6	16.9	7.8	12.3	588	100.0
Mid-Western Hill	17.4	62.8	7.4	3.0	9.3	455	100.0
Far-Western Hill	32.1	50.7	10.6	2.6	3.9	228	100.0
Sex of Child							
Male	16.5	44.7	10.9	4.1	23.8	2,546	100.0
Female	16.7	44.4	11.3	4.1	23.5	2,297	100.0
Residence							
Urban	22.9	48.3	10.9	4.3	13.6	494	100.0
Rural	15.9	44.1	11.1	4.1	24.8	4,349	100.0
Nepal	16.6	44.6	11.1	4.1	23.7	4,843	100.0
	(804)	(2,155)	(537)	(199)	(1,148)	(4,843)	-

Note: Same as in Table 12.1

Figures in the parenthesis indicate the number of mothers in the corresponding category.

(19.4% literate vs 15.5% for illiterate). On examining the data by level of education, higher the level of education higher the percent of mothers who started breastfeeding within one hour of birth (21.4% for secondary + vs 15.0% for primary). Among the ecological zones, the highest (22.2%) percentage of mothers breastfeeding their children within one hour of birth was found in the Mountains and the lowest percentage was seen in the Terai (11.0%) (Table 12.2 and Fig. 12.1).

Practices of Colostrum Feeding

Early initiation of breast feeding is beneficial for both mothers and their children. Early suckling stimulates the release of a hormone that helps the uterus to contract and this is beneficial to mothers. The first breast milk is important for babies because it contains colostrum which is rich in antibodies that protect the new born from diseases.

Table 12.3 and Fig. 12.2 presents the status of colostrum fed for different areas and by background characteristics. It was found that 77% (88% for urban and 76% for rural) of mothers fed colostrum to their children at the national level. In 1997, NMIS Cycle 4 found that 36% of women had thrown away the colostrum. The highest proportion of mothers feeding colostrum to their babies was found in the Kathmandu Valey at 98%, and the lowest proportion was seen in the Central Terai

Fig. 12.1: Distribution of mothers who started to breast feed to their new born children within one hour of birth by background characteristics.

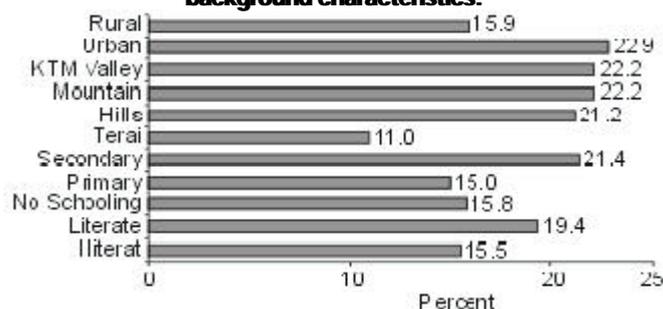


Table 12.3: Distribution of mothers who fed colostrum to their children by background characteristics.

Background Characteristics	Mothers				Total	
	Who fed colostrum		Who did not feed colostrum		No.	%
	No.	%	No.	%	No.	%
Mother's Literacy						
Illiterate	2,439	71.8	960	28.2	3,399	100.0
Literate	1,280	90.1	141	9.9	1,421	100.0
Mother's Education						
No schooling	2,630	72.8	984	27.2	3,614	100.0
Primary	369	82.2	80	17.8	449	100.0
Secondary +	728	93.5	50	6.5	778	100.0
Ecological Zones						
Terai	1,526	68.2	710	31.8	2,236	100.0
Hills	1,899	85.5	322	14.5	2,221	100.0
Mountain	325	77.8	93	22.2	418	100.0
Sub Regions						
Eastern Terai	491	73.4	178	26.6	668	100.0
Central Terai	454	55.7	362	44.3	816	100.0
Western Terai	193	64.1	108	35.9	302	100.0
Mid-Western Terai	224	84.7	40	15.3	264	100.0
Far-Western Terai	164	88.1	22	11.9	186	100.0
(E+ C + W) Mountains	197	92.2	17	7.8	214	100.0
(MW+ FW) Mountains	128	62.7	76	37.3	204	100.0
KTM Valley	225	98.0	5	2.0	229	100.0
Eastern Hill	291	87.5	42	12.5	333	100.0
Central Hill	564	92.6	45	7.4	608	100.0
Central Hill(Ex KTM)	339	89.4	40	10.6	379	100.0
Western Hill	515	86.5	81	13.5	596	100.0
Mid-Western Hill	380	83.2	77	16.8	456	100.0
Far-Western Hill	150	65.5	79	34.5	229	100.0
Sex of Child						
Male	1,984	77.3	581	22.7	2,565	100.0
Female	1,766	76.4	544	23.6	2,310	100.0
Residence						
Urban	435	87.6	62	12.4	497	100.0
Rural	3,315	75.7	1,064	24.3	4,379	100.0
Nepal	3,750	76.9	1,125	23.1	4,875	100.0

Note: Same as in Table 12.1

(56%). Mothers who were literate or had attained higher education levels were more likely to feed colostrum to their children (90% for literate vs 72% for illiterate; and 94% for secondary+ vs 72% for no education).

Among the ecological zones, mothers from Hills were the highest (86%) and those of Terai were the lowest (68%) who fed colostrum to their children.

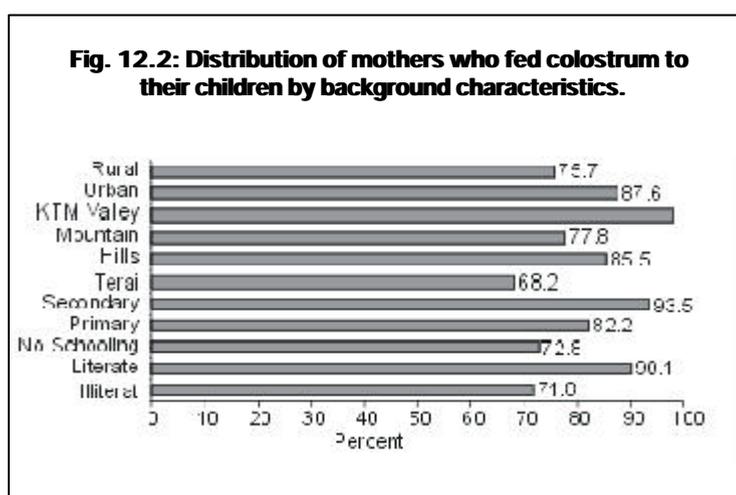
Duration of Breastfeeding

Table 12.4 presents data on children's age when breastfeeding was stopped. Mothers with children under 5 years old were asked at what age they stopped breastfeeding their children. The survey findings show that the majority of children in Nepal are breastfed well into their second year. The timing for stopping breastfeeding was at age less than 12 months for only 4.6% of the children, at the age less than 16 months for 15.5% of the children, and before 24 months for 18.9% of the children.

Drinking Water Given to the Children by Age

Information was collected whether the children were given drinking water or not. Table 12.5 presents the percent distribution of children who were given water at different ages by background characteristics. It was found that 2.2% of all children were given water before 1 month of age and 28.0% between 1 to 3 months and 52.9% between age 4 to 6 months of age. It was observed that more than 80% of the children were given water by 6 months of age. With respect to mother's literacy status, it was found that a

higher percentage of literate mothers gave water to their children aged less than 4 months compared to illiterate mothers (40.1% for literate vs 26.2% for illiterate). On comparing urban and rural differences, more urban children were given water than their rural counterparts before age of 4 months (45.8% for urban vs 28.5% for rural).



Baby Food Given to Children by Age

Mothers were asked information on at what age the children were given baby foods. Table 12.6 and Fig. 12.3 present children who were given food by age of children for different background characteristics. It was found that 11% of the children were given baby food at less than 4 months of age. About one fourth (23%) were given baby food between 4 to 5 months of age. In Nepal, most rice feeding ceremonies (pasni) are held before the infant reaches 6 months of age. That ceremony is the start of giving baby food for infants. Table 12.6 clearly shows that by 9 months of age, nine out of ten (95%) children were given baby food. It was observed that a higher percentage of urban children get baby food compared to rural children (17.9% vs 10.5% for < 4 months and 43.6% vs 33.2% for < 6 months). This pattern holds true for sub national levels and background characteristics with some marginal differences.

Table 12.4: Distribution of children who were stopped from breastfeeding by age of child (in months).

Age (in months)	Number BF stopped	(%) to the total children	Percent	Cumulative Percentage distribution of children who were stopped BF
Mother's Literacy				
< 1	6	0.1	0.6	0.6
1-3	8	0.2	0.9	1.5
4-5	7	0.1	0.8	2.3
6-9	16	0.3	1.6	3.9
10-11	6	0.1	0.7	4.6
12-15	50	1.0	5.3	9.9
16-19	53	1.1	5.6	15.5
20-23	33	0.7	3.4	18.9
24-36	697	13.9	73.5	92.4
37+	72	1.4	7.6	100.0
Total	949	19.0	100.0	

Table 12.5: Percent distribution of children who were given water by age of child and by background characteristics.

Background Characteristics	Children (%) who were given water within the age of					Total children	
	<1 m	1-3 m	4-6 m	7+ m	Not given yet	No.	%
Mother's Literacy							
Illiterate	1.5	24.7	55.3	6.0	12.6	3,351	100.0
Literate	3.8	36.3	47.3	2.4	10.2	1,412	100.0
Mother's Education							
No Schooling	1.5	24.6	55.5	5.9	12.4	3,565	100.0
Primary	4.1	33.7	46.9	2.4	12.9	447	100.0
Secondary	4.1	40.9	44.2	1.6	9.1	773	100.0
Ecological Zones							
Terai	3.1	26.0	49.1	6.7	15.5	2,198	100.0
Hills	1.2	30.5	56.6	3.0	8.7	2,206	100.0
Mountain	3.2	26.1	52.8	5.2	12.6	416	100.0
Sub Regions							
Eastern Terai	7.0	33.7	44.9	2.4	12.0	650	100.0
Central Terai	2.3	19.3	52.3	8.8	17.4	800	100.0
Western Terai	-	23.2	46.8	14.8	15.1	302	100.0
Mid-Western Terai	1.4	20.6	57.6	4.4	16.0	259	100.0
Far-Western Terai	0.9	39.3	42.2	2.8	14.9	186	100.0
(E+ C+ W) Mountains	6.3	47.1	35.6	3.4	7.6	214	100.0
(MW+ FW) Mountains	-	4.0	70.9	7.1	18.0	203	100.0
KTM Valley	1.4	70.0	18.3	3.0	7.3	229	100.0
Eastern Hill	4.7	42.9	42.7	2.1	7.6	333	100.0
Central Hill	0.8	53.7	62.1	1.2	7.3	605	100.0
Central Hill(Ex KTM)	1.2	20.3	71.4	-	7.2	376	100.0
Western Hill	0.3	27.9	56.4	5.6	9.9	592	100.0
Mid-Western Hill	-	22.1	66.1	3.1	8.8	449	100.0
Far-Western Hill	0.2	12.6	73.3	2.6	11.3	227	100.0
Sex of Child							
Male	2.0	28.2	54.5	4.6	10.7	2,534	100.0
Female	2.5	27.8	51.1	5.1	13.4	2,286	100.0
Residence							
Urban	3.2	42.6	38.8	4.3	11.1	493	100.0
Rural	2.1	26.4	54.5	4.9	12.1	4,328	100.0
Nepal	2.2	28.0	52.9	4.9	12.0	-	100.0
	(106)	(1,350)	(2,550)	(236)	(578)	(4,820)	100.0

Note: Same as in Table 12.1
Figures in the parenthesis indicate the number of children in the corresponding category.

Table 12.6: Percent distribution of children who were given baby food by age of child and by background characteristics.

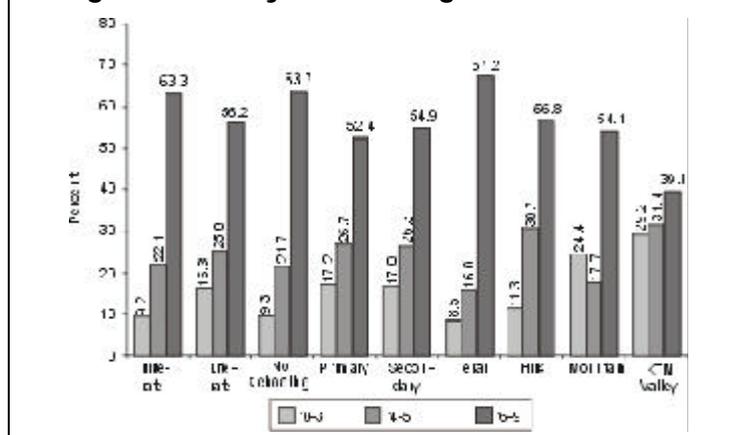
Background Characteristics	Children (%) who were given baby food within the age of						Total children	
	0-3 m	4-5 m	6-9 m	10-11m	12-15m	16+ m	No.	%
Mother's Literacy								
Illiterate	9.2	22.1	63.3	1.6	3.5	0.3	2,921	100.0
Literate	16.3	25.0	56.2	1.1	1.2	0.2	1,246	100.0
Mother's Education								
No Schooling	9.3	21.7	63.7	1.5	3.4	0.3	3,111	100.0

Table 12.6: Continued

Background Characteristics	Children (%) who were given baby food within the age of						Total children	
	0-3 m	4-5 m	6-9 m	10-11m	12-15m	16+m	No.	%
Primary	17.2	26.7	52.4	1.6	2.1	-	381	100.0
Secondary	17.0	26.3	54.9	1.0	0.4	0.4	689	100.0
Ecological Zones								
Terai	8.5	16.0	67.2	2.6	5.0	0.7	1,861	100.0
Hills	11.3	30.7	56.8	0.6	0.7	-	1,978	100.0
Mountain	24.4	17.7	54.1	0.7	3.0	-	368	100.0
Sub Regions								
Eastern Terai	17.7	18.9	53.1	4.1	5.5	0.7	569	100.0
Central Terai	5.1	11.4	74.3	1.4	6.8	1.0	664	100.0
Western Terai	2.8	15.0	77.2	1.4	2.9	0.6	256	100.0
Mid-Western Terai	4.3	20.6	66.2	5.3	3.7	-	220	100.0
Far-Western Terai	5.2	20.5	73.2	0.3	0.8	-	152	100.0
(E+ C+ W) Mountains	43.1	23.5	30.6	1.0	1.7	-	197	100.0
(MW+ FW) Mountains	3.0	11.1	81.2	0.2	4.5	-	171	100.0
KTM Valley	29.2	31.4	39.4	-	-	-	206	100.0
Eastern Hill	25.7	26.3	47.3	-	0.6	-	305	100.0
Central Hill	13.8	30.5	55.8	-	-	-	545	100.0
Central Hill(Ex KTM)	4.3	29.8	65.8	-	-	-	339	100.0
Western Hill	8.9	28.5	60.9	1.4	0.4	-	513	100.0
Mid-Western Hill	5.3	46.1	45.9	0.9	1.8	-	413	100.0
Far-Western Hill	1.2	11.5	85.5	0.5	1.2	-	201	100.0
Sex of Child								
Male	11.0	21.1	63.0	1.8	2.7	0.4	2,244	100.0
Female	11.5	25.3	59.1	1.1	3.0	0.1	1,963	100.0
Residence								
Urban	17.9	25.7	54.5	0.7	1.0	0.2	437	100.0
Rural	10.5	22.7	61.9	1.6	3.0	0.3	3,769	100.0
Nepal	11.2	23.0	61.2	1.5	2.8	0.3	4,206	100.0
	(471)	(967)	(2,574)	(63)	(118)	(13)	(4,206)	100.0

Note: Same as in Table 12.5

Fig. 12.3: Distribution of child who were given baby food by age of child and by different background characteristics



Exclusive breastfeeding, timely complementary feeding and continued feeding rates

In BCHIMES, data was analysed to obtain information on exclusive breastfeeding, timely complementary feeding and continued feeding rates. The data is presented in Table 12.7. Due to problems with data processing, data presented in Table 12.7 is only for the last surviving child, not for all children under 5 years of age as is the case in the rest of the chapter. Thus the total number of children for this analysis is smaller.

Exclusive breastfeeding, that is to say feeding only breastmilk without any other liquid and solids, is recommended for the first 4 to 6 months of the baby's life. The survey found that 72.2% of children under 4 months of age and 57.4% of children under 6 months of age were being exclusively

breastfed. In contrast, the 1996 NFHS found slightly higher proportions of exclusive breastfeeding with 81.6% of children under 4 months and 61.0% of children under 6 months. NMIS cycle 4 (1997) found that 72% of infants under 4 months of age were exclusively breastfed (NPCS/UNICEF 1997, p.11).

The timely complementary feeding rate is the proportion of children 12-15 months of age who are receiving both breastmilk and complementary foods. BCHIMES found this rate to be 73%. The equivalent figure from the 1996 NFHS is 70.8%.

Continued breastfeeding refers to children to children who are still breastfeeding at the age of 12-15 months or 20-23 months. The proportion of children being breastfed at 12-15 months is very high in Nepal at 98%. The corresponding figure in the 1996 NFHS was 97%. As indicated in Table 12.7 the number of last surviving children aged 20-23 months was too small for analysis with only 5 children in this age group.

Due to differences in survey methodology and data processing, it is not advisable to analyze trends over time based on the differences between NFHS 1996 and BCHIMES for this indicator. Nevertheless, BCHIMES has confirmed that breastfeeding continues to be universal in Nepal, with very high rates of initiation, and many children continue to be breastfed well into their second year.

Extent of Bottle-feeding

The extent to which Nepalese children were bottle-fed is shown in Table 12.8. Bottle-feeding is discouraged among very young children because of its potential negative effects on their health. It is often associated with illness, especially diarrhoeal diseases. Table 12.8 presents the distribution of children who were bottle-fed during the night preceding the date of survey by background characteristics. It was observed at the national level that only 2.2 % of children had been bottle-fed.

Bottle-feeding was highest (14.5%) in the Kathmandu valley and lowest in Eastern Hill where there was no bottlefeeding. Bottle-feeding was more common in urban areas than in rural areas. NFHS 1996 (MoH, 1997, p.145) also found that only 3% of children were bottle-fed.

Table 12.7: Percentage distribution of children surviving up to the date of survey by breast feeding status and by age of child.

Age in months	Children (%) with				Total children Percent	Total children Number
	No breast Feeding	Exclusive Breast feeding	Breast feeding with water only	Breast feeding with Baby food		
0-3	2.1	72.2	9.0	16.7	100.0	378
4-5	3.0	57.4	13.2	26.4	100.0	234
6-7	3.9	21.1	14.5	60.4	100.0	257
8-9	1.3	6.1	6.3	86.3	100.0	239
10-11	2.6	3.8	3.2	90.4	100.0	234
12-15	2.0	1.1	5.8	91.2	100.0	1,024
16-19	-	-	9.7	90.3	100.0	23
20-23	*48.2	-	*19.7	*32.1	100.0	5
24-35	1.4	0.2	16.3	82.1	100.0	1,119
36-59	1.9	0.9	51.0	46.2	100.0	1,484
0-3 months	2.1	72.2	9.0	16.7	100.0	378
6-9 months	2.6	13.9	10.5	73.0	100.0	496
12-15 months	2.0	1.1	5.8	91.2	100.0	1,024
20-23 months	*48.2	-	*19.7	*32.1	100.0	5

Note: * Result based on number of cases less than 10.

"Age in months" in the above table refers to the age of the child at the time of the survey.

Table 12.8: Distribution of children who were fed something in bottle on last night by background characteristics.

Background Characteristics	Children (%)				Total children	
	Who were bottle fed		Who were not bottle fed		Number	Percent
	Number	Percent	Number	Percent		
Mother's Literacy						
Illiterate	59	1.7	3,317	98.3	3,376	100.0
Literate	48	3.4	1,362	96.6	1,411	100.0
Mother's Education						
No Schooling	60	1.7	3,531	98.3	3,599	100.0
Primary	11	2.5	431	97.5	442	100.0
Secondary+	36	4.7	738	95.3	775	100.0
Ecological Zones						
Terai	45	2.0	2,185	98.0	2,230	100.0
Hills	60	2.7	2,143	97.3	2,203	100.0
Mountain	3	0.8	408	99.2	411	100.0
Sub Regions						
Eastern Terai	11	1.7	651	98.3	663	100.0
Central Terai	16	1.9	803	98.1	819	100.0
Western Terai	3	1.2	298	98.8	302	100.0
Mid-Western Terai	8	3.2	254	96.8	262	100.0
Far-Western Terai	6	3.3	179	96.7	185	100.0
(E+ C+ W) Mountains	2	0.9	208	99.1	210	100.0
(MW+ FW) Mountains	1	0.6	200	99.4	201	100.0
KTM Valley	33	14.5	195	85.5	228	100.0
Eastern Hill	-	-	331	100.0	331	100.0
Central Hill	36	6.0	568	94.0	604	100.0
Central Hill(Ex KTM)	4	1.0	373	99.0	376	100.0
Western Hill	6	0.9	585	99.1	590	100.0
Mid-Western Hill	11	2.5	440	97.5	451	100.0
Far-Western Hill	6	2.7	221	97.3	227	100.0
Residence						
Urban	34	6.9	462	93.1	497	100.0
Rural	74	1.7	4,274	98.3	4,347	100.0
Nepal	108	2.2	4,736	97.8	4,844	100.0

Note: Same as in Table 12.1

Reason for not Breast feeding

Information was also collected from mothers who are not currently breastfeeding, on reasons for not breastfeeding. Table 12.9 and Fig. 12.5 present the distribution of children by reasons for not breastfeeding. The survey revealed that majority (48.3%) were not breastfeeding due to weaning age of child or age to stop. This is because this question was asked for all mothers regardless of their children's age. Other reasons given were pregnancy (19.1%), child's refusal to breastfeed (15.3%) and not enough breastmilk (7.0%).

Willingness to Continue Breastfeeding

Information on willingness to continue breastfeeding was collected and is presented in Table 12.10. The mothers currently breastfeeding were asked how long they intended to continue breastfeeding. Majority (65.3%) of mothers stated that they would continue breastfeeding their children until the child's age is more than 36 months. The second most common response was as long as possible (20.7%). In all sub regions, other than Kathmandu valley, more than 80% of mothers wanted to continue breastfeeding their child until the child is older than 36 months or for as long as possible.

Table 12.9: Percentage distribution of mothers who are not currently feeding breast milk by reasons and by background characteristics.

Background Characteristics	Mothers (%) who reported the reason as								Total	
	Mother ill	Breast Problem	Not enough milk	Mother Working	Child Refusal	Weaning or Age to stop	Pregnant again	Started contraception	No.	%
Mother's Literacy										
Illiterate	3.9	1.3	6.2	1.9	19.3	45.2	20.5	1.7	488	100
Literate	5.7	-	8.2	4.5	8.5	54.2	16.6	2.2	296	100
Mother's Education										
No Schooling	4.3	1.3	6.1	2.2	18.3	45.0	20.7	2.2	519	100
Primary	4.4	-	10.6	4.3	14.1	48.6	18.0	-	69	100
Secondary+	5.5	-	8.0	4.1	7.4	58.7	14.5	1.7	195	100
Ecological Zones										
Terai	4.1	1.0	9.1	3.7	18.4	42.4	17.9	3.3	313	100
Hills	4.8	0.8	4.7	2.3	13.2	55.0	18.2	0.9	424	100
Mountain	8.2	-	12.8	2.2	14.3	28.7	33.0	0.8	53	100
Sub Regions										
Eastern Terai	2.6	-	9.9	5.6	18.4	44.8	17.4	1.3	148	100
Central Terai	2.9	2.9	11.8	2.9	29.4	26.5	14.7	8.8	77	100
Western Terai	10.4	2.4	4.3	-	9.2	62.1	11.6	-	38	100
Mid-Western Terai	8.7	-	5.6	2.4	2.4	48.8	29.7	2.4	23	100
Far-Western Terai	2.8	-	7.4	1.4	14.2	41.7	28.3	4.2	27	100
(E+ C+ W) Mountains	12.6	-	19.7	3.4	17.1	19.7	27.5	-	35	100
(MW+ FW) Mountains	-	-	-	-	9.1	45.5	43.2	2.3	19	100
KTM Valley	1.5	1.5	9.7	4.4	13.0	69.3	-	0.7	102	100
Eastern Hill	1.5	-	7.5	3.7	18.0	25.2	44.1	-	57	100
Central Hill	5.4	0.9	7.2	4.6	12.4	63.4	4.4	1.7	168	100
Central Hill(Ex KTM)	11.4	-	3.3	4.9	11.4	54.4	11.4	3.3	66	100
Western Hill	4.2	1.4	1.4	-	12.5	64.0	16.6	-	134	100
Mid-Western Hill	10.7	-	4.3	-	11.0	31.2	40.7	2.1	43	100
Far-Western Hill	2.2	-	-	-	15.6	60.0	22.2	-	22	100
Residence										
Urban	7.3	1.1	10.5	4.8	7.4	59.9	8.4	0.5	139	100
Rural	4.3	0.8	6.3	2.4	17.0	45.8	21.4	2.1	652	100
Nepal	4.8	0.8	7.0	2.9	15.3	48.3	19.1	1.9	791	100
	(38)	(6)	(55)	(23)	(121)	(382)	(151)	(15)	(791)	100

Note: Same as in Table 12.1

Table 12.10: Percentage distribution of lactating mothers who are willing to continue breast feeding by age of child (in months) and by background characteristics.

Background Characteristics	Lactating mothers (%) who are willing to continue breast feeding until the child's age is					Total lactating mothers	
	0-11 m	12-23 m	24-35 m	36+ m	As long as possible	Number	Percent
Mother's Literacy							
Illiterate	0.8	1.0	8.9	65.4	23.9	2,609	100.0
Literate	0.9	2.1	19.5	65.0	12.4	1,037	100.0
Mother's Education							
No Schooling	0.8	1.0	8.9	65.8	23.4	2,793	100.0
Primary	0.1	1.5	15.6	68.4	14.4	336	100.0
Secondary+	1.2	2.9	25.3	60.7	10.0	536	100.0

Table 12.10: Continued.

Background Characteristics	Lactating mothers (%) who are willing to continue breast feeding until the child's age is					Total lactating mothers	
	0-11 m	12-23 m	24-35 m	36+ m	As long as possible	Number	Percent
Ecological Zones							
Terai	1.6	2.1	12.5	57.8	26.1	1,654	100.0
Hills	0.3	0.8	12.0	72.4	14.6	1,689	100.0
Mountain	-	0.7	8.5	65.9	24.9	345	100.0
Sub Regions							
Eastern Terai	0.4	1.3	13.7	48.8	35.8	477	100.0
Central Terai	2.8	2.0	15.3	38.5	41.5	570	100.0
Western Terai	-	3.6	11.5	78.4	6.5	248	100.0
Mid-Western Terai	0.5	0.8	3.8	94.6	0.3	216	100.0
Far-Western Terai	5.3	4.0	12.3	73.5	4.8	143	100.0
(E+ C + W) Mountains	-	0.4	7.6	44.0	48.0	167	100.0
(MW + FW) Mountains	-	1.0	9.3	86.4	3.3	178	100.0
KTM Valley	1.2	5.0	63.8	30.0	-	122	100.0
Eastern Hill	-	0.8	10.3	52.2	36.7	267	100.0
Central Hill	0.3	1.5	24.9	55.5	17.8	398	100.0
Central Hill(Ex KTM)	-	-	7.6	66.5	25.9	276	100.0
Western Hill	-	-	7.6	76.4	16.0	430	100.0
Mid-Western Hill	0.7	1.2	6.0	91.9	0.2	393	100.0
Far-Western Hill	-	-	9.6	86.7	3.7	201	100.0
Residence							
Urban	0.5	2.3	28.4	48.9	19.9	316	100.0
Rural	0.9	1.2	10.3	66.8	20.8	3,372	100.0
Nepal	0.8	1.3	11.9	65.3	20.7	3,688	100.0
	(30)	(48)	(439)	(2,408)	(763)	(3,688)	100.0

Note: Same as in Table 12.5

Summary and Conclusion

The survey revealed that breastfeeding is almost universal in the country. About 1 in 6 children started breastfeeding within one hour of their birth and 3 in 5 children started within 3 hours of their birth. A higher percentage of literate and educated mothers started breastfeeding immediately after birth as compared to illiterate and less educated mothers. Similarly, a higher percentage of mothers from urban areas were found to start breastfeeding sooner after birth than their rural counterparts.

About 3 out of 4 children were fed colostrum. The percent of mothers who fed colostrum seems to be increasing over the years (64% in 1997 and 77% in 2000). It was found that almost all mothers from Kathmandu valley fed colostrum to their children.

It was found that breastfeeding is stopped for 1.5% and 4.6% of children before 4 months of age and before 12 months of age respectively.

Proportion of infants less than 4 months (120 days) of age who are exclusively breastfed was 72.2 percent.

Proportion of infants 6-9 months of age who were receiving breast milk and complementary food was found to be 73 percent.

It was also noticed that bottle feeding is very rare in the country. Only 2% was found bottle feeding on the previous day of the survey date at the national level.

It was also noticed from the survey that most (65%) of the Nepalese mothers were willing to breast feed for a prolonged duration (36 + months).

Selected References

- 1. His Majesty Government of Nepal (HMG/N), Ministry of Health (MoH), Department of Health Services (DoHS) 1993:"Nepal Fertility, Family Planning and Health Survey" 1991.**
- 2. (HMG/N, MoH, DoHS 1997. "Nepal Family Health Survey" 1996**
- 3. HMG/N, NPCS, /UNICEF 1996: Nepal Multiple Indicator Surveillance 1995" Cycle 1 Health and Nutrition"**
- 4. HMG/N, NPCS, /UNICEF 1997: Nepal Multiple Indicator Surveillance Cycle 4, "Early Childhood Feeding, Nutritional and Development 1996"**

Endnote

Unless and otherwise stated, "mothers" throughout this chapter 12 refer to currently married women of reproductive age who had at least one child under 5 years of age and "children" refer to their last child under 5 years of age.

Chapter 13

CHILD HEALTH

Ajit Pradhan

Acute Respiratory Infections

Introduction

Acute respiratory infection (ARI) is one of the major public health problems affecting morbidity and mortality among children below 5 years of age in Nepal. The control of ARI is an important component of the child survival programme in the Department of Health Services. The ARI programme focuses on reducing mortality caused by ARI among children below 5 years of age.

Until recently, the clinical classification of ARI was not very well defined (JHU 1990). Nevertheless, the ARI cases in Nepal are classified into four categories as i) no pneumonia, ii) pneumonia, iii) severe pneumonia, and iv) very severe pneumonia (DoHS 1998/99). The pneumonia category of ARI cases is treated with antibacterial drug (cotrimoxazole). The severe and very severe pneumonia cases are referred to hospitals. The FCHVs are trained to recognise ARI by the above categories. The antibacterial treatment can begin at the level of a female community health volunteer, who is provided with antibacterial drugs. The referred cases are often treated with a secondline of antibiotics at a higher level. At the higher level, a budget is provided to purchase the drugs for treating ARI cases. The ARI programme is mainly aimed at reducing mortality due to ARI in children below 5 years.

Prevalence and treatment of acute respiratory infections

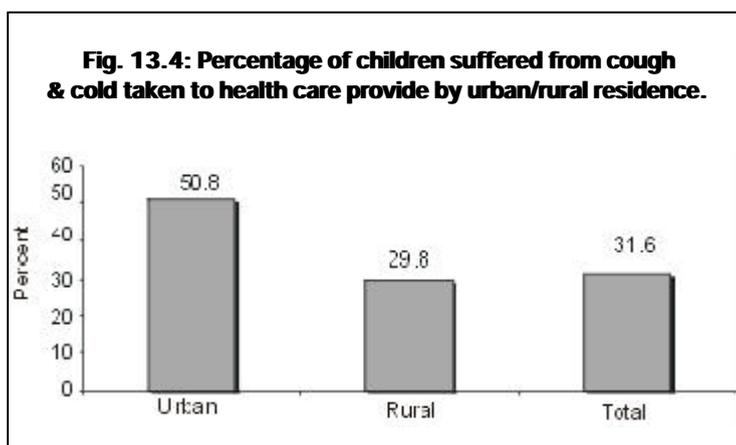
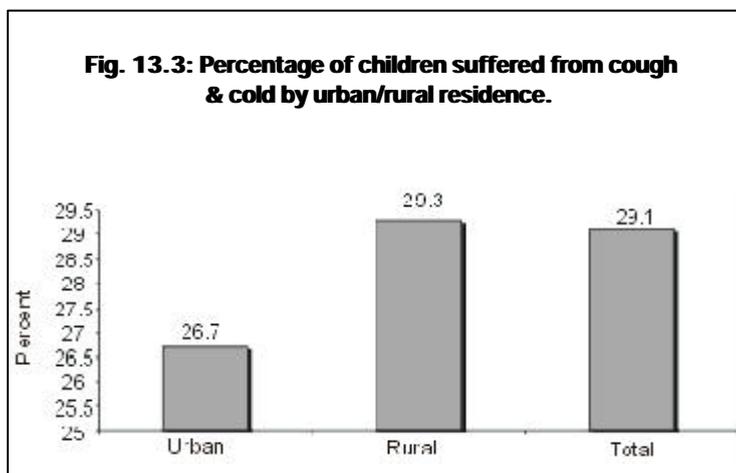
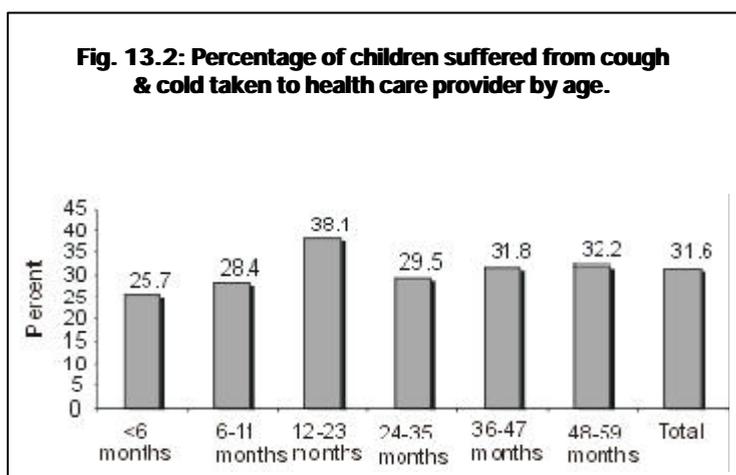
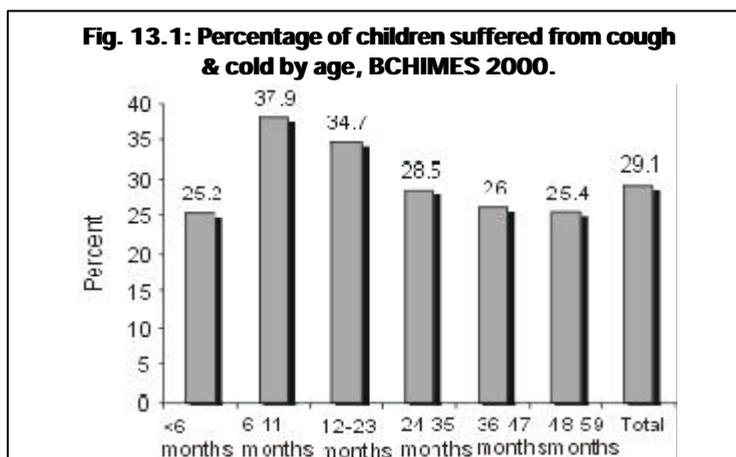
In this survey mothers with children less than 5 years of age were asked about the health of their children, including acute respiratory infections and diarrhoea. This section contains information on ARI summarised in Table 13.1. The prevalence of ARI in the two weeks preceding the survey was 29 %. The ARI prevalence was slightly lower than that found in the Nepal Family Health Survey 1996 (34%). It should be borne in mind that seasonality is an important factor in the prevalence of ARI. These two surveys were carried out at slightly different times; i.e., the current survey was conducted during summer when the prevalence of ARI is likely to be lower. Thus, it may be wrong to conclude that the prevalence of ARI has actually decreased.

Table 13.1 also shows the prevalence of ARI according to selected variables. The age pattern of prevalence of ARI resembles an inverted U. It increases in the earlier months of life, i.e., it goes up until the age of 11 months and decreases as the age of the child

Table 13.1: Percentage distribution of children who suffered from cough and cold (ARI) in past two weeks and that were taken to a health care provider for treatment.

Background variable	Children (%) suffered from ARI	Total number of children under 5 years	Children (%) suffered from ARI taken to Health Care provider	Number of children suffered from ARI
Age Group in Months				
< 6	25.2	615	25.7	149
6-11	37.9	742	28.4	269
12-23	34.7	1,093	38.1	362
24-35	28.5	1,369	29.5	374
36-47	26.0	1,500	31.8	373
48-59	25.4	1,399	32.2	345
Gender of the child				
Male	29.6	3,453	34.6	986
Female	28.5	3,264	28.3	886
Residence				
Urban	26.7	642	50.8	166
Rural;	29.3	6,075	29.8	1,706
Ecological zone				
Terai	28.7	3,212	38.9	877
Hills	28.9	2,948	26.5	817
Mountains	32.3	557	19.4	177
Sub region				
Eastern Terai	33.4	906	36.3	299
Central Terai	30.0	1,270	36.9	352
Western Terai	17.7	406	55.6	68
Mid-western Terai	24.8	360	36.4	87
Far-western Terai	28.1	269	46.7	72
E+ C+ W Mountains	40.7	287	21.8	115
F+ MW Mountains	23.3	270	15.1	63
Kathmandu Valley	29.4	263	46.1	77
Eastern Hills	36.0	461	18.7	159
Central Hills	33.3	776	30.7	243
Central Hills (ex Ktm Valley)	35.3	513	23.6	166
Western Hills	15.4	777	29.9	118
Mid-western Hills	37.1	610	27.6	222
Far-western Hills	24.9	324	21.0	75
Mother's Education				
No schooling	28.1	5,091	26.2	1,367
Primary	32.7	586	44.2	186
Secondary +	31.7	994	47.2	303
Mother's Literacy				
Illiterate	28.2	4,800	26.2	1,290
Literate	31.4	1,836	43.2	557
Nepal	29.1	6,717	31.6	1,872

Note: Abbreviations same as in table 7.1



increases. This pattern of relationship is consistent with the findings of the Nepal Family Health Survey 1996 (NFHS 1996).

The prevalence of ARI according to the gender of the child was not significant. The prevalence of ARI among male children was 29.6%, while that for female children was 28.5%. Similar differences were also observed in the NFHS 1996.

ARI was slightly less prevalent in urban areas than in rural areas. In urban areas, ARI prevalence was 27% against 29% in rural areas. This pattern was also observed in NFHS 1996.

The prevalence of ARI by ecological zone indicates that it was highest in the Mountains. ARI prevalence in the Hills and Terai were virtually the same. As a whole, ARI prevalence in the current survey differed from that in NFHS 1996, but the differences are within the standard bounds of errors.

Children residing in the Eastern/Central/Western Mountain sub-region were most likely to suffer from ARI (41%), followed by children in the Mid-western Hills (37%), Eastern Hills (36%), and Central Hills (ex Kathmandu valley) (35%). Children in the Western Hills (15%) and Western Terai (18%) were comparatively less likely to suffer from ARI. Children in the Western Terai (56%), Far-western Terai (47%) and in Kathmandu Valley (46%) were most likely to receive treatment in the event of an ARI episode. Kathmandu Valley is predominantly urban, with its five municipalities of Nepal, viz., Kathmandu, Lalitpur, Bhaktapur, Kirtipur and Thimi. Children in the Mid- and Far-western Mountains (15%), Far-western Hills (21%) and Eastern Hills (19%) were least likely to receive treatment from the health care provider within the sub-region.

The prevalence of ARI was higher among children of mothers that had primary level or secondary and above education as compared to mothers with no education. For example, 28% of children whose mother has no education or is illiterate had suffered from ARI during the two weeks preceding the survey, while 33% of children whose mother has primary level

of education have reported to have suffered from ARI. This is different from the findings observed in the NFHS 1996.

Table 13.1 shows the proportion of children who were taken to health service providers for the treatment of ARI. Figures in the current survey and those in the NFHS1996 suggest an overall increase of 14 percentage points in the proportion of children taken to health service providers for the treatment of ARI (18% versus 32%). This can be regarded as a positive change among mothers and family regarding the health of their children.

Treatment-seeking behavior has also been disaggregated by selected variables provided in Table 13.1. As can be seen from the table, children of 12-23 months of age were more likely to be taken for the treatment of ARI than were children of other ages.

Treatment for ARI for male children was 6% more than for girl children, indicating a degree of discrimination against girl children. In NFHS 1996, however, no difference was observed in the treatment of boys and girls.

Proportionately, more urban children were taken for the treatment of ARI than their rural counterparts. The figure for urban children was 51%, while it was 30% for rural children. A similar pattern was observed in NFHS 1996 when urban figures were higher than rural figures by 11 percentage points.

Similar differentials in the treatment of ARI were also observed by literacy and education variables. The higher the education level of the mother, the higher the proportion of children taken for the treatment of ARI. This too is consistent with NFHS 1996.

Fig. 13.5: Percentage of children suffered from cough & cold by mother's educational status.

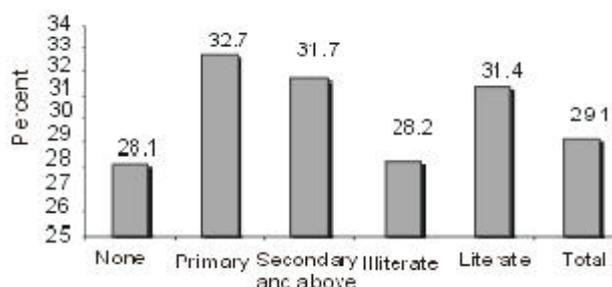


Fig. 13.6: Percentage of children suffered from cough & cold taken to health care provide by mother's educational status.

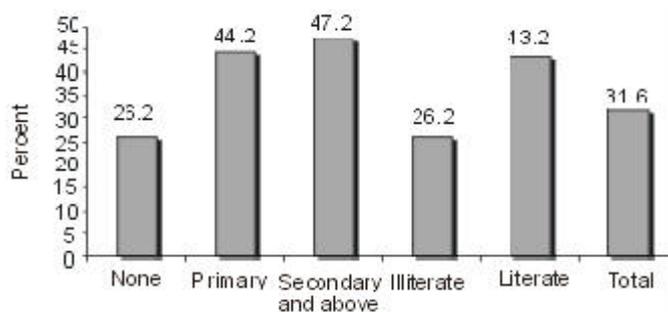


Table 13.2: Percentage distribution of children who suffered from ARI by symptoms associated with ARI.

S#	Symptoms Children	(percent)
1.	Coughing	90.4
2.	Blocked/running nose	73.1
3.	Fever	64.9
4.	Breathing fast	8.0
5.	Difficulty breathing	7.6
6.	Chest-in drawing	3.0
7.	Problems eating/drinking	3.2
8.	Others	2.8

Note: The analysis is based on multiple response

Table 13.3: Percentage distribution of children who suffered from ARI by things given to drink.

S.#	Things given to drink	Children (percent)
1.	Breastmilk	63.2
2.	Cereal soup	15.7
3.	Water during feeding time	34.8
4.	Plain water	34.3
5.	Cow/buffalo/canned milk	23.9
6.	Other fluids	14.5
7.	Yogurt	1.3
8.	Fruit juice	2.4
9.	Nothing	4.8

Note: The analysis is based on multiple response

Table 13.4: Mean number of episodes of ARI during last year by selected variables.

Selected variable	Mean number of episodes of ARI during last year	Number of children
Age Group in months		
< 6	0.3	601
6-11	0.7	739
12-23	1.2	1,092
24-35	1.3	1,365
36-47	1.4	1,496
48-59	1.4	1,396
Gender of the child		
Male	1.2	3,440
Female	1.2	3,249
Residence		
Urban	1.4	635
Rural	1.2	6,054
Ecological Zone		
Terai	1.1	3,202
Hills	1.3	2,932
Mountains	1.0	556
Sub region		
Eastern Terai	0.9	902
Central Terai	1.1	1,265
Western Terai	0.9	406
Mid-western Terai	1.4	360
Far-western Terai	1.7	269
E+ C+ W Mountains	0.8	286
F+ MW Mountains	1.1	270
Kathmandu Valley	2.3	259
Eastern Hills	1.4	459
Central Hills	1.4	770
Central Hills (ex Ktm Valley)	0.9	511
Western Hills	1.3	771
Mid-western Hills	1.1	608
Far-western Hills	1.6	324
Mother's Education		
No schooling	1.2	5,070
Primary	1.2	584
Secondary +	1.2	989
Mother's Literacy		
Illiterate	1.2	4,779
Literate	1.1	1,829
Nepal	1.2	6,689

Note: Abbreviations same as in table 7.1

Symptoms of ARI

Mothers that reported that their children had cough and cold during last two weeks were also asked to describe the symptoms of their child's illness. Up to three responses were allowed and data was processed using the multiple response analysis facility in SPSS. The frequency distribution of these variables is summarised in Table 13.2. As indicated, the most common symptoms reported were cough (90%), blocked/running nose (73%), and fever (65%). Other symptoms were less common.

Mothers were also asked what was given to the child to drink during the episode of ARI. The data is summarised in Table 13.3. The most common drink given to a child suffering from ARI was breastmilk (63%), provided the child was being breastfed, followed by water either separately or during feeding time (34% or 35%). After water, other kinds of milk were given to children (24%). Children that were provided cereal soup to the child during the episode of ARI made up 16%.

Pertinent to the programme managers is data such as the average number of ARI episodes a child suffers in a year as it helps to ascertain the coverage of services and also helps in estimating the cost of drugs required to treat ARI cases. Thus, information was sought regarding the number of episodes of ARI children suffered in the last year. The data is summarised as the mean number of episodes per child in tabular form. It should be noted that since mothers had to recall this event, it is possible that the figures may be underestimated, especially when the mother had more than one child. Allowing for such possible shortcomings in the data, the mean number of episodes of ARI has been provided by selected variables in Table 13.4.

The average number of episodes was found to increase with the age of the child. There was no difference in the mean number of ARI episodes by gender. Children in urban areas were more likely to suffer from ARI compared to children in rural areas. Children in the Hill areas were more likely to suffer from ARI as compared to children from the Mountains or the Terai.

Of the sub-regions, children in Kathmandu Valley were most likely to suffer from ARI, whereas children in the Eastern/Central/Western Mountains were least likely to

suffer from ARI. Children whose mothers are illiterate were more likely to suffer from ARI as compared to children whose mothers are literate. On average, children below 5 years of age in Nepal suffered 1.2 episodes of ARI a year.

Diarrhoeal disease

Introduction

Diarrhoeal diseases in Nepal remain one of the major public health problems, especially among children under 5 years of age. A study conducted in 1991 estimates that, on average, children under 5 years suffer with 3.3 episodes of diarrhoea in a year (MOH 1991).

The National Diarrhoeal Disease Control Programme aims at reducing mortality among children below 5 years through the improved management of diarrhoea cases. In the case of diarrhoea, peripheral health facilities and female community health volunteers provide Oral Rehydration Solution (ORS) packets. Furthermore, selected hospitals, primary health care centres, health posts and sub-health posts provide education and services through the Oral Rehydration Therapy (ORT) Corners.

The Ninth Plan's diarrhoeal disease strategies are:

- Training for various levels of health workers (i.e., VHWs, MCHWs, FCHVs, teachers and community leaders),
- Orientation for community opinion leaders, VDC members and faith healers,
- Supply of ORS packets to health institutions,
- Supply of ORS packets to FCHVs,
- Conducting IEC activities to help reduce episodes of diarrhoea and increase the use of ORS in diarrhoea,
- Emphasise combined child health package, i.e., CDD, EPI and nutrition, and
- Improve the overall programme management.

Prevalence and differentials

In BCHIMES, mothers were asked if their children had suffered from diarrhoea in the last two weeks preceding the survey, if there was blood in the stool, and if the

Fig. 13.7: Percentage of child suffered from diarrhoea by age.

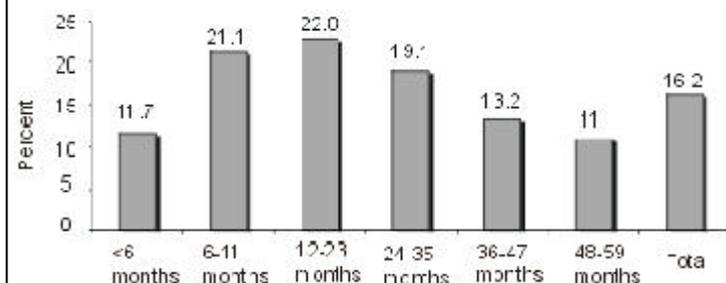


Fig. 13.8: Percentage of children suffered from diarrhoea taken to health care provider by age

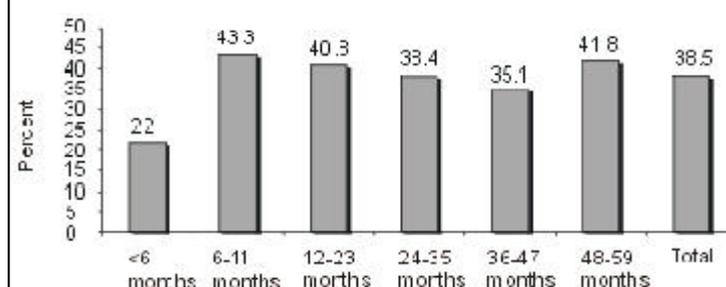


Fig. 13.9: Percentage of children suffered from diarrhoea by urban/rural residence.

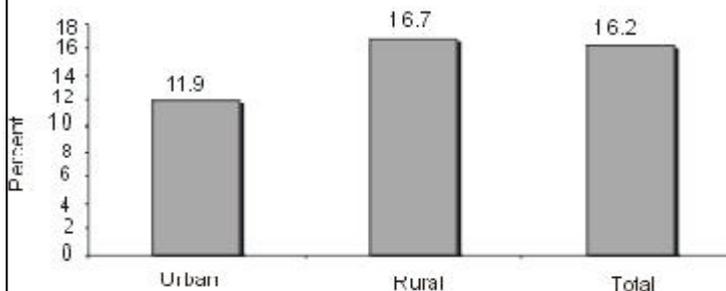


Fig. 13.10: Percentage of children suffered from diarrhoea taken to health care provider by urban/rural residence.

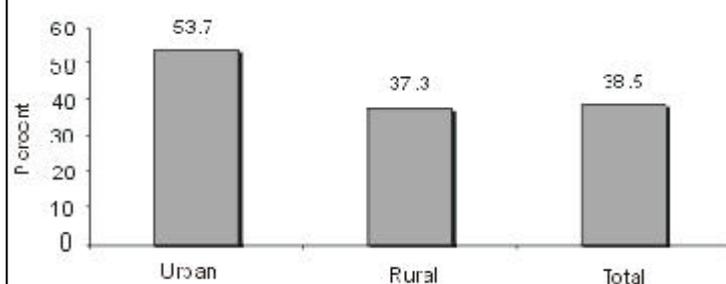


Fig. 13.11: Percentage of children suffered from diarrhoea by mother's educational status.

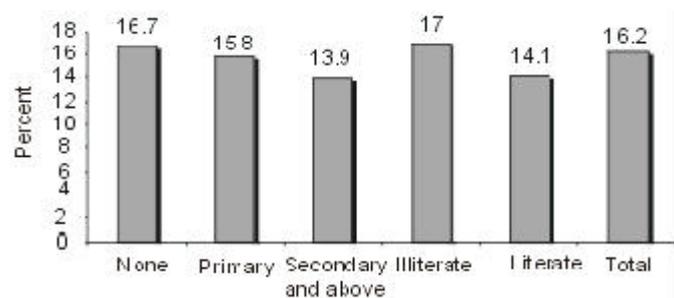
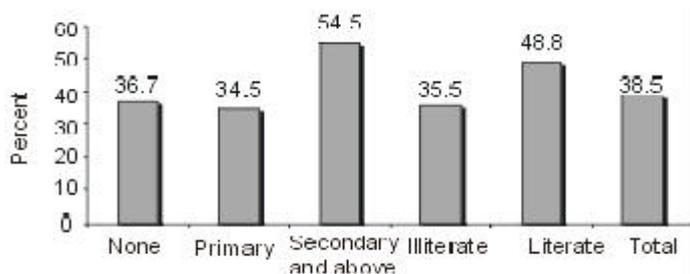


Fig. 13.12: Percentage of children suffered from diarrhoea taken to health care provide by mother's educational status.



child was taken to a health care provider for treatment. The results are summarised in Table 13.5. Overall, the prevalence of diarrhoea in the last two weeks was 16.2%. In comparison, this was lower than the figure obtained by NFHS 1996 (27.5%). There is, however, the factor of seasonality in the prevalence of diarrhoea, and the interview period in these surveys was slightly different. Furthermore, NFHS 1996 provided data for children under 3 years of age while the BCHIMES survey was based on children below 5 years of age. Therefore, these estimates are not strictly comparable.

The prevalence of diarrhoea according to the age of children follows a curvilinear pattern; i.e., as the age increased, so did prevalence, though at later ages prevalence decreased. The highest prevalence of diarrhoea was observed in the age group 12-23 months. A similar pattern was also observed in NFHS 1996.

Gender differences in the prevalence of diarrhoea was rather small. It was within the bounds of sampling errors indicating

that the prevalence of diarrhoea was same in both sexes. This pattern was also observed in NFHS 1996.

As is expected, there was a difference of 5 percentage points in the differential of prevalence of diarrhoea by area of residence (Table 13.5); i.e., the prevalence of diarrhoea in rural areas was 17% as compared to 12% in urban areas.

A marginal difference in the prevalence of diarrhoea was observed between the Terai and the Hills, while the figure for the Mountains was slightly higher. A similar difference in prevalence of diarrhoea by ecological zones was observed in NFHS 1996.

Table 13.5: Percentage of children suffered from diarrhoea, with blood in stool, and taken to a health care provider for treatment.

Background Variable	Children (%) suffered from diarrhoea	No. of children	Children suffered from diarrhoea		Children suffered from diarrhoea taken to health care provider	
			With blood in stool (%)	Number	Percent	Number
Age Group in months						
< 6	11.7	615	14.1	64	22.0	65
6-11	21.1	741	23.3	151	43.3	151
12-23	22.8	1,091	22.8	236	40.8	230
24-35	19.1	1,369	27.0	242	38.4	247
36-47	13.2	1,500	25.8	187	35.1	185
48-59	11.0	1,397	29.6	145	41.8	142

The relationship between literacy/educational level of the mother and the prevalence of diarrhoea in this survey follows the trend observed in NFHS 1996. That is, the prevalence of diarrhoea is lower among children whose mothers are literate or better educated. For example, the prevalence of diarrhoea in the last two weeks among literate mothers was 14%, while the prevalence of diarrhoea was 17 % among their illiterate counterparts.

Blood in the stool

Table 13.5 also provides information on the presence of blood in the stool during an episode of diarrhoea. Among children suffering from diarrhoea during the last two weeks, 25 % of them had blood in their stool.

Table 13.5: Continued.

Background Variable	Children (%) suffered from diarrhoea	No. of children	Children suffered from diarrhoea		Children suffered from diarrhoea taken to health care provider	
			With blood in stool (%)	Number	Percent	Number
Gender of the child						
Male	16.6	3,452	25.9	542	41.6	541
Female	15.8	3,260	23.6	484	35.0	479
Residence						
Urban	11.9	642	15.9	72	53.7	74
Rural	16.7	6,070	25.5	954	37.3	946
Ecological Zone						
Terai	15.8	3,208	24.8	475	49.3	467
Hills	16.0	2,947	24.8	444	31.8	444
Mountains	19.9	557	25.0	107	19.6	108
Sub region						
Eastern Terai	16.5	902	13.1	140	54.3	141
Central Terai	16.7	1,270	29.7	201	43.4	185
Western Terai	12.8	406	36.1	43	60.4	51
Mid-western Terai	13.1	360	20.3	45	45.2	43
Far-western Terai	18.0	269	32.9	46	48.7	47
E+ C+ W Mountains	24.7	287	19.9	70	18.9	69
F+ MW Mountains	14.8	270	34.5	37	20.9	39
Kathmandu Valley	10.3	263	17.3	26	48.7	26
Eastern Hills	22.0	461	29.1	97	20.6	100
Central Hills	12.4	776	20.1	89	37.3	90
Central Hills (ex Ktm Valley)	13.5	513	21.3	63	32.7	64
Western Hills	11.3	777	11.2	84	23.4	80
Mid-western Hills	20.6	609	31.9	116	46.1	117
Far-western Hills	18.5	324	30.5	57	24.6	56
Mother's Education						
No schooling	16.7	5,086	27.6	796	36.7	781
Primary	15.8	586	17.6	86	34.5	91
Secondary +	13.9	994	14.9	133	54.5	137
Mother's Literacy						
Illiterate	17.0	4,795	27.4	766	35.5	754
Literate	14.1	1,836	17.6	244	48.8	250
Nepal	16.2	6,712	24.8	1025	38.5	1019

Note: Abbreviations same as in table 7.1

Treatment of diarrhoea

Of interest in terms of service provision is when and with whom mothers sought services when their child suffered from diarrhoea. As indicated by Table 13.5, about 39 % of children who suffered from diarrhoea were taken for treatment to a health service provider. Among those children more likely to be taken to a health care provider for treatment were children aged 6-23 months of age, male children, children living in urban areas, children of the Terai, Western, Eastern & Far-Western Terai, and children whose mothers were literate and better educated.

During bouts of diarrhoea, if a child is provided adequate quantity of fluids, his/her chances of dehydration decreases and hence the chance of survival increases. Therefore, it is recommended that more fluids be given to a child during diarrhoea. Mothers were asked whether they provided more, less or the same amount of fluids when their children had diarrhoea. The data is summarized in Table 13.6. About 10% of the children were not given any fluids during diarrhoea, and 30% were given less fluid than usual. Altogether 41% of children were given the same amount of fluids and 20% were given more fluids than usual while having diarrhoea. This indicates that mothers need to be motivated and educated to provide more fluids to children during bouts of diarrhoea to prevent their children from dehydration.

Table 13.6: Percentage distribution of children suffered from diarrhoea by amount of fluids given

Background Variable	Children Percent of children by fluids given				No. of Children
	None	Less	Same	More	
Age Group in months					
< 6	38.4	31.6	24.1	5.9	69
6-11	11.3	29.9	39.9	18.9	154
12-23	6.5	31.7	36.9	24.9	246
24-35	9.5	28.0	40.5	21.9	258
36-47	5.8	32.7	45.9	15.5	193
48-59	7.0	23.4	51.0	18.6	150
Gender of the child					
Male	9.2	30.3	40.5	20.0	561
Female	10.8	28.8	41.5	18.9	509
Residence					
Urban	13.9	14.7	39.0	32.4	75
Rural	9.6	30.7	41.1	18.6	995
Ecological Zone					
Terai	13.0	28.3	41.1	17.6	498
Hills	7.2	31.0	39.5	22.3	462
Mountains	7.8	29.2	46.3	16.6	110
Sub Region					
Eastern Terai	9.7	26.9	36.6	26.8	148
Central Terai	12.9	29.8	48.5	8.8	207
Western Terai	15.7	26.0	37.3	21.1	52
Mid-western Terai	17.6	35.2	23.8	23.4	43
Far-western Terai	16.7	22.4	42.6	18.2	47
E+ C+ W Mountains	4.9	17.8	54.3	23.0	70
F+ MW Mountains	12.9	49.5	32.3	5.4	40
Kathmandu Valley	8.3		61.1	30.6	27
Eastern Hills	6.4	34.8	32.2	26.6	101

Table 13.6: Continued

Background Variable	Children Percent of children by fluids given				No. of Children
	None	Less	Same	More	
Central Hills	4.3	28.3	38.0	29.3	93
Central Hills (ex Ktm Valley)	3.4	26.3	39.8	30.6	66
Western Hills	2.2	21.9	58.4	17.5	86
Mid-western Hills	8.9	44.4	26.5	20.2	123
Far-western Hills	15.7	29.7	41.7	13.0	59
Mother's Education					
No schooling	10.3	32.7	42.5	14.4	830
Primary	16.2	14.1	39.4	30.3	91
Secondary +	3.1	20.6	31.7	44.7	138
Mother's Literacy					
Illiterate	10.5	31.9	43.6	13.9	799
Literate	7.4	21.7	32.7	38.2	255
Total	9.9	29.6	41.0	19.5	1,070

Note: Abbreviations same as in table 7.1

On the whole, the evidence of children getting more fluids during a bout of diarrhoea irrespective of age groups, sex, residence, ecological/sub-region was very low (a minimum of 5% to 37%). The importance of administering more fluids to children suffering from diarrhoea needs to be understood and practiced by Nepali mothers.

Table 13.7 provides information on whether children were provided more, less or the same amount of food when suffering from diarrhoea. Overall, 13 % of children did not get any food during diarrhoea, while 44 % got less food than usual. That is, 57 % of children did not get any food or less food than normal during bouts of diarrhoea. It should be noted that children in Kathmandu Valley (64%) and urban areas (48%) were provided the same amount of food. In the rest of the areas, the majority of children were given no food or less food when having diarrhoea. Greater IEC activities could inform mothers so that at least same amount of food is provided to children while suffering from diarrhoea.

Table 13.8 provides data on the mean number of episodes of diarrhoea occurrence. The over all mean number of episodes per child was 1.7. It should be noted that the average number of episodes of diarrhoea among children below 5 years of age was 3.3 in 1990 (MoH 1991). This decline may be attributable to increased access and use of piped drinking water facilities in the country and the changing social and hygienic behavior of people in general.

The average number of episodes of diarrhoea increased with increase in the age of the child. The average number of episodes was highest in children aged 24-47 months and lowest in children less than 6 months old. The fewer episodes of diarrhoea among children below 6 months of age may be due to the protective effects of breastfeeding, as 99.5 % of them were breastfed (NFHS 1996). No gender difference in the mean number of diarrhoea episodes was observed. There were no differences in the mean number of episodes of diarrhoea by urban/rural residence.

Children in the Hills were more likely to suffer from diarrhoea compared to children in the Terai and the Mountains. Within the sub-region, children in the Central Hills were most likely to suffer from diarrhoea and children in the Mid- and Far-western

Mountains were least likely to suffer from diarrhoea. Children whose mothers are literate and better educated were likely to suffer from fewer episodes of diarrhoea compared to children whose mothers are less educated or illiterate. The mean number of episodes seems to be higher among illiterate mothers, mothers with no education, and mothers residing in the Hills.

Table 13.9 is a summary of the type of fluid given to children during episodes of diarrhoea. Among all children who were still breastfed, 61 % of them were given breast-

Table 13.7: Percentage distribution of children suffered from diarrhoea by amount of food given.

Background Variable	Percentage of children by food given during diarrhoea				No. of Children
	None	Less	Same	More	
Age Group in months					
< 6	58.9	25.1	14.7	1.4	68
6-11	20.5	32.3	39.1	8.1	152
12-23	12.5	46.4	31.7	9.4	246
24-35	7.8	49.0	36.4	6.8	252
36-47	5.3	50.2	36.0	8.6	194
48-59	3.9	44.7	45.8	5.6	147
Gender of the child					
Male	11.2	47.6	32.9	8.3	555
Female	15.0	40.2	38.4	6.4	503
Residence					
Urban	13.5	23.4	48.2	14.9	71
Rural	13.0	45.6	34.6	6.9	987
Ecological Zone					
Terai	18.5	42.6	31.5	7.5	489
Hills	7.7	44.9	39.5	7.9	460
Mountains	10.9	47.2	36.8	5.1	110
Sub Region					
Eastern Terai	16.7	36.2	37.0	10.1	148
Central Terai	21.8	49.4	26.4	2.3	199
Western Terai	16.3	45.1	26.1	12.5	50
Mid-western Terai	16.4	46.8	24.8	12.0	43
Far-western Terai	14.1	27.3	47.2	11.5	47
E+ C+ W Mountains	11.0	41.6	41.9	5.5	70
F+ MW Mountains	10.8	57.0	28.0	4.3	40
Kathmandu Valley	11.0	17.1	63.8	8.1	27
Eastern Hills	9.6	52.0	28.9	9.5	101
Central Hills	7.6	32.6	55.4	3.3	92
Central Hills (ex Ktm Valley)	6.9	38.7	52.7	1.7	65
Western Hills	4.4	34.7	54.4	6.6	86
Mid-western Hills	6.7	53.0	28.4	11.9	123
Far-western Hills	10.5	50.9	33.3	5.3	58
Mother's Education					
No schooling	13.0	47.1	35.2	4.7	826
Primary	20.8	35.3	37.2	6.7	88
Secondary +	7.6	31.5	36.0	25.0	136
Mother's Literacy					
Illiterate	12.8	47.0	36.0	4.2	791
Literate	11.9	35.6	34.8	17.7	254
Nepal	13.0	44.1	35.5	7.4	1,058

Note: Abbreviations same as in table 7.1

milk. It is important to note that 7% of children did not get any fluids during bouts of diarrhoea. Nearly 40% of children were provided either ORS or homemade solutions, which is important in dehydration therapy. This is an improvement as NFHS 1996 revealed that only 29% of children were provided with ORS.

In the survey, mothers were asked what symptoms in their sick children would lead them to seek institutional health care. The responses are summarised in Table 13.10.

The analysis indicates that mothers tended to regard fever and frequent diarrhoea as the major symptoms needing immediate attention (more than 70 % of the responses cited these symptoms). Other symptoms in descending order of importance were when the child stops drinking and eating (43%), presence of blood in the stool (40%), fast/difficulty in breathing (27%), and vomiting immediately after eating (24%). This clearly indicates that mothers need to be provided health education on the danger signs of diarrhoea among children.

Summary and Conclusions:

The prevalence of acute respiratory infection (ARI) among children of currently married women of reproductive age, under 5 years of age, in the last two weeks of the survey was 29.1%. On an average, a child in Nepal was found to suffer 1.2 episodes of ARI in a year. Only a marginal gender difference was found in the prevalence of ARI.

Children in the mountains suffered more from cough and cold as compared to

Table 13.9: Percentage distribution of children who suffered from diarrhoea by fluids given.

Type of fluid given during diarrhoea	Children (percent)
1. Breastmilk	60.6
2. Cereal soup	13.7
3. Yogurt	2.9
4. Fruit juice	2.2
5. Salt sugar solution (home made)	13.7
6. Cow/buffalo/canned milk	13.0
7. ORS/Jeevanjal/Navjeevan	26.0
8. Water during food	26.2
9. Plain water	31.6
10. Other fluids	8.7
11. Nothing	7.0

Note: The analysis is based on multiple response

Table 13.8: Mean number of episodes of diarrhoea during the last year by selected variables.

Background variable	Mean # of episodes of diarrhoea during last year	Number of children
Age Group in months		
< 6	0.3	598
6-11	1.0	734
12-23	1.8	1,087
24-35	2.0	1,359
36-47	2.0	1,490
48-59	1.9	1,391
Gender of the child		
Male	1.7	3,423
Female	1.7	3,236
Residence		
Urban	1.7	635
Rural	1.7	6,024
Ecological Zone		
Terai	1.6	3,171
Hills	1.8	2,932
Mountains	1.5	555
Sub Region		
Eastern Terai	1.4	888
Central Terai	1.8	1,251
Western Terai	1.3	406
Mid-western Terai	1.6	358
Far-western Terai	1.8	268
E + C + W Mountains	1.9	285
F + MW Mountains	1.2	270
Kathmandu Valley	1.6	260
Eastern Hills	1.9	461
Central Hills	1.9	772
Central Hills (ex Ktm Valley)	2.1	512
Western Hills	1.6	774
Mid-western Hills	2.0	603
Far-western Hills	1.5	322
Mother's Education		
No schooling	1.7	5,040
Primary	1.6	583
Secondary +	1.5	990
Mother's Literacy		
Illiterate	1.7	4,753
Literate	1.6	1,825
Nepal	1.7	6,659

Note: Abbreviations same as in table 7.1

Table 13.10: Percentage distribution of mothers who seek institutional child health care by symptoms in the sick children.

S#Symptoms Children	Mothers (percent)
1. When the child stops drinking/feeding	43.4
2. Chest-in drawing	20.1
3. High fever	76.3
4. Lethargic/unconsciousness	19.3
5. Fast/difficulty breathing	27.1
6. Blood in stool	39.8
7. Vomit immediately after eating	23.8
8. Frequent diarrhoea	73.4
9. Excessively thirsty	5.9
10. Others	0.0

Note: The analysis is based on multiple response

those in the Hills or the Terai. Similarly, more children in the Eastern, Central and Western Mountains suffered from ARI as compared to those in other sub-regions.

Children of illiterate mothers suffered less from ARI as compared to those of literate mother. Most common symptoms in ARI, as reported, were coughing (90%), blocked/running nose (73%), and fever (65%).

The prevalence of diarrhoea among children under 5 years of age, in the last two weeks of the survey was 16.2%. More children in the rural areas have suffered from diarrhoea than their urban counterparts.

Prevalence of diarrhoea was lower among children of literate mothers. Among children suffering from diarrhoea, 24.8% had the presence of blood in their stool. 39% of children suffering from diarrhoea were taken to a health care provider for treatment.

Most children (44.1%) were given less food than usual whereas very few children (7.4%) were given more food than usual when they were suffering from diarrhoea. Children of urban areas were more likely to be given more fluid and food, during bouts of diarrhoea than are their rural counterparts.

Similarly, children from Hill region were more likely to be given more fluid and food as compared to those in Mountainous and Terai region during bouts of diarrhoea. The mean number of episodes of diarrhoea among children below 5 years was found to be 1.7 per year.

chapter 14

VITAMIN A

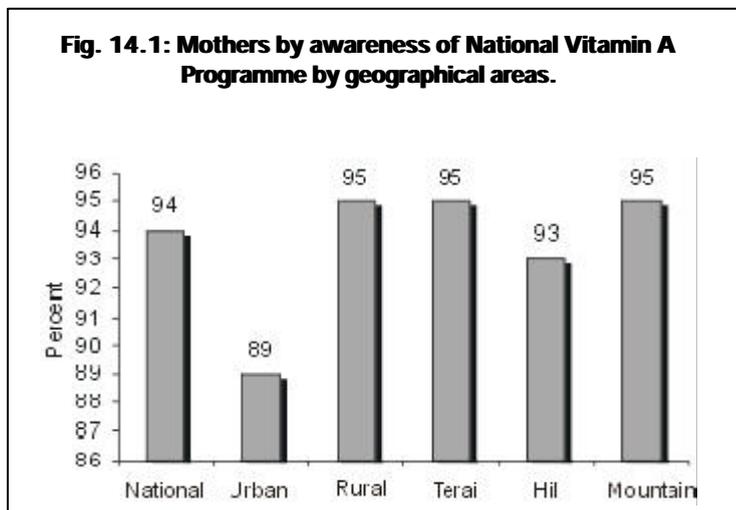
Nebin Lal Shrestha

Introduction

Vitamin A deficiency impairs children's immune system, increases their chances of dying from common diseases, and undermines the health of pregnant and lactating women. It can also cause eye damage and blindness in children. The misfortunes can be easily prevented by the Vitamin A supplementation or food fortification. UNICEF and WHO recommend a Vitamin A control programme in all countries with high under-5 mortality rates (greater than 70 per 1000 live births) and those that have Vitamin A deficiency as a public health problem. Based on UNICEF/WHO guidelines, the Ministry of Health recommends that children aged 6-12 months be given one dose of Vitamin A capsule of 100,000 IU every six months and children older than one year be given one high dose of 200,000 IU every six months.

Realising the importance of Vitamin A, the Ministry of Health has been launching the National Vitamin A Programme (NVAP) biannually since 1993 (2050 BS), with the support of USAID and UNICEF/Nepal. Each year, Vitamin A capsules are given to children of age 6-59 months in every Baisakh 6-7 (April) and Kartik 2-3 (October) through female community health volunteers. During the time of the survey, NVAP covered 64 districts of the country.

Fig. 14.1: Mothers by awareness of National Vitamin A Programme by geographical areas.



Beside this, Vitamin A capsules have also been given to children aged 6-59 months in non-NVAP districts on National Immunisation Days (NID). Once NVAP covers all 75 districts, NID will stop providing Vitamin A capsules.

Awareness of the national Vitamin A programme (NVAP)

In this survey, questions on Vitamin A were asked to all currently married women aged 15-49 having at least one child under five years of age. A total of 5,166 mothers (weighted number) were interviewed and

information on Vitamin A supplementation to the children were obtained for 5,907 children (weighted number). Mothers were asked:

- Whether they were aware of NVAP,
- Whether Vitamin A capsules had been given to their children in the last six months prior to the survey date, and
- About activities related to Vitamin A capsule.

Table 14.1 presents the percentage of mothers who were aware of NVAP by background characteristics. Overall, 94 % of mothers were aware of the programme. Due to the initial impact of the programme in rural areas, more rural mothers were aware of the programme than urban mothers (95% versus 90 %). The level of programme awareness of mothers also varied by ecological zones. Mother's from the Hill region were less likely to be aware of the programme (93%) than mothers in the Terai and Mountain (95%).

Programme awareness by sub-regions ranged from 82 % in the Western Terai to nearly 100% in the Western Hills. As NVAP was not launched in Kathmandu Valley at the time of the survey, it was found that mothers in Kathmandu Valley had the lowest level of programme awareness (68.4 %) as compared to mothers in other regions.

As expected, literate mothers were more aware of the programme than illiterate mothers (97 % versus 93 %). As the level of education rose, there was likely to be a greater awareness of the programme (93% for no schooling to 96% for primary education and 97% for secondary or higher education level).

Vitamin A supplementation

Table 14.2 presents the percentage of children who received Vitamin A capsules by background characteristics. Overall, 90 % of children of age 6-59 months received Vitamin A capsules. Rural children were more likely to receive Vitamin A capsules than urban children (90 % versus 82 %), reflecting the initial programme impact in

Table 14.1: Percentage of mothers by awareness of the NVAP by background variables.

Background Variable	Mothers	
	Percent Aware	Number
Residence	p=0.000	
Urban	89.3	456
Rural	94.5	4,710
Ecological zone	p=0.003	
Terai	95.0	2,461
Hills	92.8	2,266
Mountains	95.1	439
Sub-Region	p=0.000	
Eastern Terai	96.8	709
Central Terai	97.9	960
Western Terai	81.9	314
Mid-western Terai	97.2	275
Far-western Terai	92.7	204
Eastern Hills	98.7	360
Central Hills	85.3	580
Western Hills	99.7	628
Mid-western Hills	86.3	447
Far-western Hills	96.1	249
Eastern, Central & Western Mountains	93.1	228
Mid- and Far-western Mountains	97.2	212
Central Hills (ex Ktm valley)	93.4	394
Kathmandu Valley	68.4	186
Mother's literacy	p=0.000	
Literate	96.9	1,430
Illiterate	93.0	3,736
Mother's education level	p=0.000	
No schooling	93.3	3,940
Primary	96.2	451
Secondary +	96.8	775
Total	94.1	5,166

Fig. 14.2: Percentage of children who received vitamin A capsule by geographical areas.

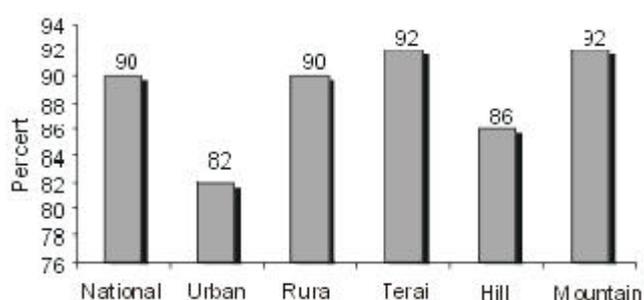


Table 14.2: Percentage of children who received Vitamin A supplement in the last 6 months prior to the survey date by background variables.

Background variable		Children	
		Percent Received	Number of Children
Residence	p=0.000		
Urban		82.1	526
Rural		90.3	5,381
Ecological zone	p=0.000		
Terai		92.1	2,814
Hills		86.3	2,590
Mountains		91.7	503
Sub-Region	p=0.000		
Eastern Terai		92.8	812
Central Terai		95.4	1,098
Western Terai		79.7	356
Mid-western Terai		93.5	316
Far-western Terai		91.1	232
Eastern Hills		96.9	414
Central Hills		60.7	667
Western Hills		98.7	718
Mid-western Hills		78.2	501
Far-western Hills		91.5	291
Eastern, Central & Western Mountains		88.6	262
Mid- and Far-western Mountains		95.2	240
Central Hills (ex Ktm Valley)		81.3	459
Kathmandu Valley		45.7	208
Programme Area	p=0.000		
Programme districts		92.8	5,082
Non-programme districts		69.7	825
Mother's literacy	p=0.061		
Literate		90.7	1,635
Illiterate		89.1	4,272
Mother's education level	p=0.055		
No schooling		89.3	4,506
Primary		92.5	515
Secondary +		88.9	886
Child age	p=0.000		
6-11 months		75.2	705
12-23 months		90.2	1,058
24-35 months		90.9	1,336
36-47 months		92.2	1,443
48-59 months		92.3	1,365
Child sex	p=0.498		
Male		89.3	3,068
Female		89.8	2,839
Nepal		89.5	5,907

the rural areas. Children from the Hills were less likely to have received Vitamin A capsules (86%) than children from the Terai and Mountain regions (92 %).

The proportion of children that received Vitamin A capsules also varies significantly for different sub-regions. Of the sub-regions, the percentage coverage varied from 61% in the Central Hills to 99% in the Western Hills. Since NVAP was not launched in Kathmandu Valley at the time of the survey, the coverage was lowest in Kathmandu Valley (46 %). However, children in Kathmandu Valley may have received supplementation of Vitamin A capsules on the NID days.

In non-programme areas, Vitamin A capsules are given to all children aged 6-59 months during National Immunization Days held every 6 months. However, the coverage figures in the non-programme areas at 70% are lower than what has been found in previous NID coverage surveys. Since the questionnaire focussed on the National Vitamin A programme, and did not probe for supplementation during NIDs, it is likely that many mothers may have responded that they did not get Vitamin A supplementation, even if they had received capsules during the last NID.

The literacy status of mothers does not appear to significantly affect the distribution of Vitamin A capsules to children. This could be due to the emphasis placed by launching the Vitamin A programme in rural areas where the proportion of literate women was low. There is no gender difference in Vitamin A supplementation. However, older children were more likely to receive supplement Vitamin A capsules than were younger children (75 % for children aged 6-11 months to more than 90 % for children aged one year or above).

Due to a rapid expansion of NVAP, Vitamin A supplementation has been increasing over the years. The Routine Immunisation & NID Coverage Survey Report, 1998 and Nepal Micro Nutrient Status Survey, 1998 show 87% coverage

rate. The current BCHIMES (2000) indicates an increase of 2.5%, providing a coverage rate of 89.5 % in the year 2000.

Practices related to Vitamin A capsule distribution

Mothers whose children had received Vitamin A capsules were asked to respond to questions related to practices at the time of Vitamin A distribution. These questions were designed to assess whether NVAP guidelines were being followed at the various sites. Table 14.3 presents the percentage of the mother's response and registration of the child by regions.

Almost 5% of children were fed the capsule by putting the capsule into their mother's hands for feeding to the child. This low percentage is expected as health personnel should not put the capsule into the mother's hand but feed it to the child. More than 95% of children were fed the capsule whose mother noticed the capsule was cut with scissors and the capsule squeezed into the child's mouth. Similarly, 97% of child's name was written on a card. It was more common for the capsule to be put in the mother's hand in the Hills and Mountains than in the Terai.

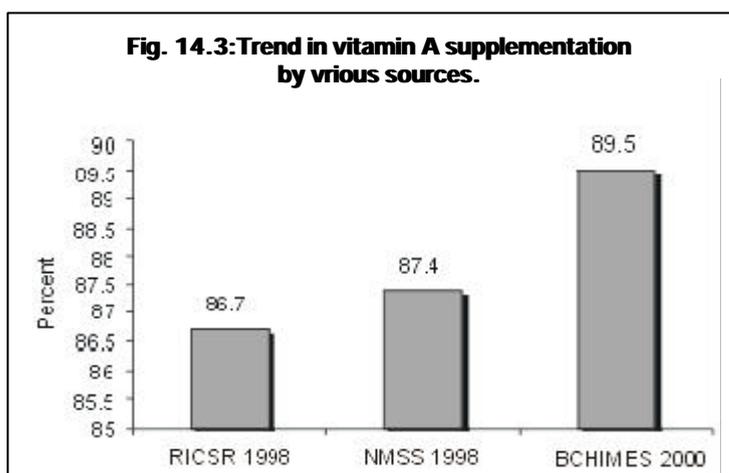


Table 14.3: Percentage of children who were fed Vitamin A by feeding practice and percentage of children registered.

Geographical Area	Children (%) while feeding Vitamin A			
	Their mother were given capsule in hand	Their mother found the capsule cut by scissors/other equipment	Their mother noticed the capsule squeezed onto child's mouth	Their mother noticed the name of child is registered
Residence	P=0.010	P=0.148	P=0.683	p=0.063
Urban	7.5	96.6	98.5	98.2
Rural	4.6	95.0	98.1	96.5
Ecological zone	P=0.000	P=0.000	P=0.000	p=0.000
Terai	8.1	93.1	96.8	93.7
Hills	1.5	97.1	99.7	99.7
Mountains	2.7	96.7	98.2	97.7
Sub-Region	p=0.000	P=0.000	p=0.000	p=0.000
Eastern Terai	12.3	99.0	99.2	99.7
Central Terai	2.4	89.3	94.2	89.0
Western Terai	9.8	92.5	98.4	93.8
Mid-western Terai	16.7	88.6	96.1	90.6
Far-western Terai	7.3	98.7	99.3	99.6
Eastern Hills	4.8	99.7	99.7	99.7
Central Hills	1.5	99.2	99.5	99.5
Western Hills	0.0	95.7	100.0	100.0
Mid-western Hills	0.9	97.9	99.5	99.5
Far-western Hills	1.1	91.4	99.8	99.6
E,C&W Mountains	4.8	96.4	97.3	96.1
M&F Western Mountains	0.6	97.0	99.1	99.3
C. Hills (ex Ktm Valley)	0.9	99.4	99.4	99.4
Kathmandu Valley	3.9	98.4	100.0	100.0
Nepal	4.8	95.1	98.1	96.6

Summary and Conclusion

Over all, 90 % of the children aged 6-59 months had Vitamin A supplementation (93 % in programme districts and 70 % in non-programme districts). Most probably children from non-programme district had received Vitamin A supplementation through the NID programme. Since NVAP is found to be very successful, it should expand all over the country. It is also found that only 75 % of the younger children between age 6-11 months had Vitamin A supplementation. So, an awareness programme should be launched at the community level to inform the people on the importance of Vitamin A supplementation to their children in an early age i.e., starting from the age 6 months. However, 70% seems low compared to the NID coverage figures of above 90% being reported by NID survey reports. This may be because the BCHIMES survey questions focussed on the distribution by the National Vitamin A Programme over the last year, and mothers were not asked whether their children received Vitamin A capsules during NIDs.

Endnotes

Unless and otherwise stated "mothers" throughout this chapter 14 refer to currently married women of reproductive age who have at least one child under 5 years of age and "children" refer to their children between 6 months and 5 years of age.

c h a p t e r 1 5

IMMUNISATION

Suresh Basnyat

Introduction

The Expanded Programme on Immunisation (EPI) implemented in Nepal follows the international guidelines recommended by WHO and UNICEF. According to the guidelines, a complete set of vaccinations for a child include one dose of BCG as protection against tuberculosis, three doses of DPT as protection against diphtheria, pertussis (whooping cough) and tetanus, three doses of polio vaccine and a measles vaccine before the first birthday. Also, vaccinations should be recorded on an immunisation card for the child.

In the BCHIMES survey, information regarding immunisation was collected from currently married women (15-49 years of age) who have at least a child aged 12 - 23 months. Mothers were asked to show the immunisation card of their children so that the interviewer could copy the vaccination information. Mothers were also asked to give information on vaccinations given to their children that is not recorded on the card. When a mother was unable to show a card or a card was not given at the time of immunisation, they were asked to recall if the child has received immunisation against tuberculosis, polio and DPT, as well as the number doses of polio and DPT received.

Immunisation coverage

The information on vaccination coverage by different sources is presented in Table 15.1. The information was collected in two ways - from the vaccination card or from the mother's recall. It emerged that only 17% of children had a health card. Accounting from both sources, 87% of children aged 12-23 months reported having had BCG vaccination. The coverage of the first dose of DPT was also 87%. The percentage for the subsequent doses of DPT declined to 80% for the second dose and to 65% for the third dose. Similarly, 93% of children received polio1, which declined to 74% by the third dose. The coverage of polio vaccination was higher than that of other vaccinations. The

Table 15.1: Percentage of children aged 12-23 months that had received specific vaccines at any time before the survey by type of vaccines.

Source of information	BCG	Percentage of children who received						Measles	All	None	No. of children
		DPT			Polio						
		1	2	3	1	2	3				
By vaccination card	15.2	15.1	14.7	14.1	16.0	15.6	14.1	13.2	12.2	-	176
By mother's recall	71.6	71.7	64.8	51.3	77.2	74.6	60.3	68.6	42.3	3.8	892
By card/mother's recall	86.8	86.8	79.5	65.4	93.2	90.2	74.4	81.8	54.5	3.8	1,068

high coverage in polio as compared to other vaccinations was mainly due to the numerous rounds of Polio Immunisation Days conducted to eradicate polio. The polio coverage figures in Tables 15.1, 15.2 and 15.3 include the polio drops given during the National Immunisation Days. The dropout rate between the first and third dose of DPT was 24.6%, whereas the rate between the first and third dose of polio was 20.2%. There was a sharp decline in the coverage of the third dose of DPT and polio as compared to the first and second doses. Similarly, 82% of children aged 12-23 months were vaccinated against measles.

According to the findings, the coverage rate of each of the vaccine was greater than or equal to 80% except for the third dose of DPT and polio. For the full course of vaccinations, a child must receive each of the vaccinations. Overall, only 55% of children aged 12-23 months had received all the recommended vaccinations. About 4% of children received no vaccination at all.

Table 15.2 shows the vaccination coverage of children by residence, ecological zone and sub-region. Urban children were more likely to be fully vaccinated than rural children (66% versus 53%). In the ecological zones, the coverage of full vaccination was highest in the Hills (57.8%) and was 52.2% and 48.7% for the Terai and Mountains, respectively. The sub-regional breakdown is based on a small number of cases and should be viewed with caution. At the sub-regional level, the coverage of fully vaccinated children ranged from 35.9% to 72.4%. The figure was highest in the Eastern Terai (72.4%), followed by the Central Hills (67.3%), and coverage was lowest in the Far- and Mid-western Terai (35.9%). A high percentage of children (91.4%) had full vaccination coverage in Kathmandu Valley.

One out of 25 children (4.2%) in the rural areas did not receive any vaccination at all. In the urban areas, only 0.6% did not receive any vaccination. The percentage of children not receiving any vaccination was highest in the Far-western Hills (13.1%). In the Eastern Terai and Kathmandu Valley the percentage of children not receiving any vaccination was zero. These figures represent the children who have not yet been reached by the health services for immunisation. Overall, 79% of mothers had received the immunisation card, but only 17% were able to present the card at the time of the survey.

Trends in fully immunised children

The information on vaccination coverage among children aged 12-23 month was also collected in the Nepal Fertility Health Survey 1991 and Nepal Family Health Survey 1996. There is a steady increase in the proportion of fully immunised children aged 12-23 months. In 1991, 37.2 % of children were fully immunised which increased to 43.3 % in 1996 and 54.5 % in 2000.

Fig. 15.1: Children aged 12-23 months that received specific vaccines any time before the survey.

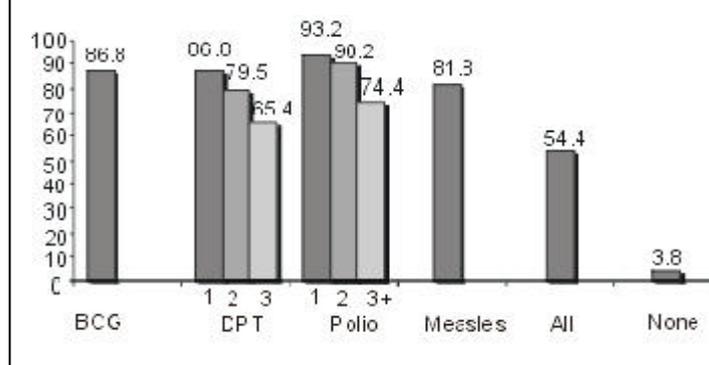


Fig. 15.2: Trends in fully immunised children aged 12-23 months in different years, 1991-2000

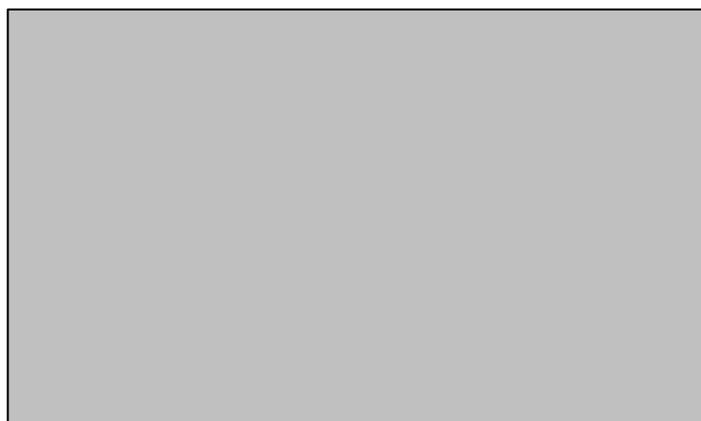


Table 15.2: Percentage of children aged 12-23 months that received specific vaccines at any time before survey by type of vaccines for geographical areas.

Geographical areas	BCG	Percentage of children who received						Measles	All	None	% with card	% with IM card given	No. of children
		DPT			Polio								
		1	2	3	1	2	3						
Residence													
Urban	95.0	95.0	83.8	77.8	97.8	95.6	86.0	82.9	65.9	0.6	24.7	94.0	115
Rural	85.8	85.8	79.0	64.0	92.6	89.6	73.0	81.6	53.1	4.2	15.5	77.8	953
Ecological Zone													
Terai	85.8	84.0	74.6	61.2	91.6	89.1	74.5	81.1	52.2	5.0	22.2	80.9	475
Hills	88.5	90.3	85.0	69.9	94.8	91.2	74.8	84.0	57.8	2.7	11.9	80.2	500
Mountains	82.5	81.7	75.3	63.3	92.4	90.4	71.4	73.5	48.7	3.5	11.7	68.7	93
Sub-Region													
Eastern Terai	98.8	93.7	91.3	82.6	97.6	96.4	87.4	92.5	72.4	0	27.6	79.8	165
Central Terai	76.7	73.8	55.8	39.8	85.4	81.1	62.1	71.4	36.9	11.7	22.8	83.3	157
Western Terai	86.1	84.5	71.4	53.3	95.4	92.3	63.7	77.6	42.9	3.1	18.1	77.7	60
M. W. Terai	78.9	82.1	77.2	56.2	86.0	84.1	74.3	79.2	39.3	5.2	10.0	75.2	59
FW. Terai	76.1	87.0	80.8	78.5	94.1	94.1	89.4	79.7	64.3	1.2	21.4	95.0	33
E+ C+ W Mnt.	93.0	89.4	85.9	73.0	95.3	93.0	71.2	82.4	55.9	1.2	16.8	85.7	59
F+ MW Mnt.	64.1	67.9	56.4	46.2	87.2	85.9	71.8	57.7	35.9	7.7	2.6	41.3	33
Eastern Hills	94.1	92.8	91.6	83.0	96.3	91.4	76.7	84.5	63.9	1.2	15.8	79.9	88
Central Hills	95.5	95.5	94.0	77.6	93.3	91.0	79.1	90.3	67.9	1.5	16.4	96.9	134
Western Hills	92.1	93.7	90.8	73.5	96.8	92.4	73.5	84.5	62.5	1.6	15.5	91.6	120
MW Hills	83.5	90.6	75.2	56.6	96.1	91.7	71.2	85.9	44.4	2.4	2.4	59.4	117
FW Hills	56.6	56.7	51.8	43.4	85.7	84.3	71.0	57.9	37.5	13.1	6.0	66.5	43
KTM Valley	92.2	98.2	98.2	96.6	98.2	96.5	91.4	95.0	91.4	0	25.4	100.0	45
C. Hills (ex ktm valley)	95.0	95.0	92.5	68.7	91.8	89.3	73.0	87.3	56.0	2.5	12.0	95.1	89
Nepal	86.8	86.8	79.5	65.4	93.2	90.2	74.4	81.8	54.5	3.8	16.5	79.4	1,068

Table 15.3 shows vaccination coverage rates by child sex, mother's literacy status and education level. The figures refer to the percentage of children receiving the vaccination at any time before the survey. These figures are based on information from the vaccination card or the mother's recall. Gender differences in the coverage figures can be seen whereby fewer girls are fully vaccinated than boys. About 58% of boys received all the

Table 15.3: Percentage of children aged 12-23 months that received specific vaccines at time before survey by type of vaccines and by background variables.

Background Variable	BCG	Percentage children who received						Measles	All	None	%with card	No. of child
		DPT			Polio							
		1	2	3	1	2	3					
Child's sex												
Male	86.2	85.7	77.5	66.6	93.0	89.6	78.3	82.8	57.6	4.5	16.2	557
Female	87.4	87.9	81.7	64.2	93.4	90.8	70.1	80.6	51.2	3.0	16.8	511
Mother's Literacy												
Illiterate	81.6	81.1	72.6	60.2	91.3	88.1	71.2	74.7	48.2	5.5	14.2	691
Literate	96.3	97.2	92.1	75.1	96.7	94.0	80.2	94.8	66.1	0.7	20.6	377
Mother's Education												
None	82.5	82.4	74.1	60.0	91.9	89.0	71.9	76.0	48.5	5.0	13.5	757
Primary	92.9	94.8	90.0	74.1	93.3	90.8	76.5	93.5	65.5	2.4	27.3	115
Secondary & above	98.8	98.1	94.0	81.6	97.7	94.9	82.5	95.9	70.8	0	22.1	196
Nepal	86.8	86.8	79.5	65.4	93.2	90.2	74.4	81.8	54.5	3.8	16.5	1068

recommended vaccinations, whereas girls that had all the vaccinations made up 51%. This difference was found to be statistically significant. The difference can be attributed to higher dropout rates for girls than boys. While girls are likely as boys to receive BCG, DPT/or Polio at birth, less girls receive all 3 doses of DPT and Polio. The proportion of fully vaccinated children of literate mothers was higher (66.1%) as compared to that of children of illiterate mothers (48.2%). Similarly, the coverage of vaccination was distinctly related to the mother's education level. About 71% of children whose mothers have secondary education and higher were fully vaccinated, whereas this figure was only 48.5% for children whose mothers have no education.

Knowledge related to vaccination

Generally, it is recommended that all mothers be informed about i) the necessity of keeping the card safely ii) diseases that can be prevented from the vaccine given iii) number of shots to be taken, and iv) possible side-effects of the vaccine. In this survey, mothers were asked whether this information was given or not at the time of their child's immunisation. The percentage of mothers that received such information by residence, ecological zone and sub-region at the time of immunisation is presented in Table 15.4. As the table indicates, 69% to 79% of mothers were informed about each of these aspects. Overall, 45% of mothers received all the information at the time of the vaccination of their children.

Table 15.4: Percentage of mothers that received the recommended information at the time of immunisation by type of information and by background variables.

Background Variable	Mothers (%) who were informed about					Count
	The necessity to keep vaccination card safely	The diseases that can be prevented from the vaccine given	No. of shots to be taken for full course	Possible side effects of name of child vaccine given	All information	
Residence						
Urban	87.2	66.2	78.8	75.9	46.5	115
Rural	78.1	68.9	78.2	79.7	44.5	953
Ecological Zone						
Terai	79.8	63.4	75.2	73.5	35.8	475
Hills	80.9	74.1	81.6	84.8	54.4	500
Mountains	65.5	62.2	73.4	74.8	36.5	93
Sub-region						
Eastern Terai	81.8	78.2	88.0	79.1	46.7	165
Central Terai	75.5	41.2	60.8	52.0	17.1	157
Western Terai	81.6	66.5	66.4	84.8	43.7	60
MW Terai	78.1	55.1	72.2	78.1	35.9	59
FW Terai	82.6	59.1	70.8	79.5	45.6	33
E + C + W Mountains	79.4	63.1	80.0	81.2	38.4	59
F + MW Mountains	42.6	60.7	62.3	63.9	32.9	33
Eastern Hills	91.9	87.2	90.1	82.6	58.4	88
Central Hills	99.1	84.1	94.4	92.6	66.7	134
Western Hills	89.3	80.7	82.9	91.4	55.6	120
MW Hills	54.5	53.6	67.6	79.0	34.9	117
FW Hills	61.3	57.9	61.3	64.4	55.6	43
Kathmandu Valley	98.1	74.0	93.9	92.0	60.3	45
C. Hills (ex Ktm Valley)	100.0	90.3	95.1	93.6	70.1	89
Nepal	79.1	68.6	78.3	79.3	44.7	1,068

Table 15.5: Percentage of children aged 12-23 month that received polio vaccine during NID (Paush 4, 2057) by background variables.

Background Variable	Percentage of Polio children received vaccine	Number of children
Residence		
Urban	97.7	87
Rural	89.8	809
Ecological Zone		
Terai	88.5	375
Hills	91.6	438
Mountains	94.7	82
Sub-Region		
Eastern Terai	100.0	124
Central Terai	73.6	121
Western Terai	88.4	49
MW Terai	92.2	54
FW Terai	95.8	28
E+ C+ W Mountains	92.9	49
F+ MW Mountains	97.4	33
Eastern Hills	89.8	74
Central Hills	91.0	111
Western Hills	94.3	99
MW Hills	93.9	113
FW Hills	83.7	40
Kathmandu Valley	93.1	33
C. Hill (ex Ktm Valley)	90.0	78
Sex of child		
Male	89.8	469
Female	91.5	427
Mother's literacy		
Illiterate	87.6	595
Literate	96.5	301
Mother's education		
None	88.2	658
Primary	95.6	84
Secondary & above	97.2	154
Nepal	90.6	896

National Polio Immunisation Day (NID) coverage

His Majesty's Government of Nepal launched many rounds of national and sub-national immunisation days for the eradication of polio. The last round (before the survey date) was successfully carried out on Paush 4, 2056. In the BCHIMES survey, the coverage of polio in children aged 12-23 months was collected. Mothers were asked whether or not the child was fed polio drops on that National Immunisation Day.

Overall, 91% of children received polio drops on the immunisation days. About 98% of urban children received polio drops on the NID compared to 90% in rural areas. In ecological zones, the Mountains had the highest coverage (94.7%), followed by the Hills (91.6%) and the Terai (88.5%). Across the sub-regional level, the highest and lowest coverage was found within the Terai region. There was no significant difference in the coverage of polio on the NID between boys and girls.

Summary and conclusion

By WHO/UNICEF guidelines a child should receive a complete set of vaccination before their first birth day. This survey showed that nearly half of the children aged 12-23 months were not fully immunized. The dropout rate between first and third doze of DPT and Polio was high. Also, gender disparities were found in the proportion of fully immunized children. More boys complete the vaccinations than girls. In Far Western/Mid Western Mountain, Far Western Hills, Central Terai and Mid Western Terai the coverage of fully immunized children were much lower than the national average. So, special awareness programme about vaccination should be launched focusing in these areas.

Endnotes

Unless and otherwise stated "mothers" throughout this chapter 14 refer to currently married women of reproductive age who have at least one child under 5 years of age and "children" refer to their children between 6 months and 5 years of age.

Chapter 16

DATA QUALITY AND SAMPLE CHARACTERISTICS

Nebin Lal Shrestha

Introduction

Sample coverage and fieldwork

The sample for Between Census Household Information for Monitoring & Evaluation System (BCHIMES) was designed to provide estimates for the national level, urban/rural areas, ecological zones, and for sub-regions. The sample provides estimates of all eco-development regions of the Hills and Terai separately. As for the Mountain eco-development regions, the sample provides estimates for the Eastern, Central & Western Mountains combined in one group and the Mid- and Far-western Mountains combined in another group. The sample also provides estimates for the Kathmandu Valley separately. A total of 208 clusters (10,295 households), with 181 rural clusters (87%) and 27 urban clusters (13%) were selected from 69 districts for the survey. The average cluster size was 50 households per cluster. Since the sample was stratified by region, it is not self-weighting; hence, sample weights were used for reporting national-level results.

In addition to that for households, questionnaires were administered in each selected household for currently married women aged 15-49 years, children aged 6-15 years, and children under 5 years of age. The questionnaires were based on the Multiple Indicator Cluster Survey (MICS) model questionnaire. The English version of the questionnaires was translated into Nepali. The questionnaires were pre-tested in February 2000. Based on the results of the pre-test, modifications were made in the wording and translation.

The field staff was trained for eight days in early March 2000. The data was collected by 14 teams, each made up of three female interviewers, one field editor, and one supervisor. The fieldwork began in March 2000 and has completed in May 2000.

Data entry and analysis

A relational database programme was written in EpiInfo package (a word processing database and statistics programme for public health) for data entry and SPSS (Statistical Package for Social Science) was used for data processing. For generating analytical tables in particular, a General Tables Command within the Custom Tables of SPSS was used. In order to maximise the quality of data entry, all records were entered twice by different data-entry operators and the EpiInfo Validate Programme was used to validate every record. Beside these, other consistency and structural checks were carried out to ensure the quality of data.

Response rate

Of the 10,295 households sampled, 10,269 households were successfully interviewed, yielding a household response rate of 99.7%. In the interviewed households, 9,983 eligible women (currently married and 15-49 years of age) were identified and 9,424 of them were successfully interviewed, yielding a women's response rate of 94.4%. Overall, the response rate was 94.1%. Details of the response rate and reasons for non-response for geographical regions are shown in Table 16.1 and Table 16.2.

Table 16.1: Response rate of households and women by geographical areas.

Area	Household			Women			Overall Response Rate
	Sampled	Inter-viewed	Response Rate	Eligible	Inter-viewed	Response Rate	
Place of residence							
Urban	1,348	1,346	99.9	1,242	1,186	95.5	95.4
Rural	8,947	8,923	99.7	8,741	8,238	94.2	93.9
Ecological zone							
Terai	3,940	3,920	99.5	4,016	3,712	92.4	91.9
Hills	4,788	4,784	99.9	4,480	4,306	96.1	96.0
Mountains	1,567	1,565	99.9	1,487	1,406	94.6	94.5
Sub-region							
Eastern Terai	797	797	100.0	754	705	93.5	93.5
Central Terai	769	759	98.7	754	658	87.3	86.2
Western Terai	787	785	99.7	762	705	92.5	92.2
Mid-western Terai	783	776	99.1	841	800	95.1	94.2
Far-western Terai	804	803	99.9	905	844	93.3	93.2
Eastern Hills	772	772	100.0	674	646	95.8	95.8
Central Hills	1,597	1,595	99.9	1,466	1432	97.7	97.6
Western Hills	807	807	100.0	653	637	97.5	97.5
Mid-western Hills	826	825	99.9	887	833	93.9	93.8
Far-western Hills	786	785	99.9	800	758	94.8	94.7
Eastern, Central & Western Mountains	754	752	99.7	630	586	93.0	92.7
Mid- & Far-western Mountains	813	813	100.0	857	820	95.7	95.7
C. Hills (ex Ktm Valley)	799	797	99.7	742	708	95.4	95.1
Kathmandu Valley	798	798	100.0	724	724	100.0	100.0
Nepal	10,295	10,269	99.7	9,983	9424	94.4	94.1

The household response rate varied from 98.7% to 100% and women's response rate varied from 87.3% to 100% for regions. A high response rate for households and women was observed in the Hills (96% overall), followed by the Mountains (94.5% overall). Kathmandu Valley had a 100% response rate in households as well as in the women's questionnaire. The Terai had the lowest response rate of 91.9% overall. Within the Terai region, the Central Terai had the lowest response rate for both households and women's questionnaire (98.7% and 87.3%, respectively). The overall response rate in the Central Terai was 86.2%. The main reason for women's low response rate in the Terai region was because the fieldwork in the Terai region took place at the time of Holi (Festival of Colour) when most Terai women were celebrating at their maternal homes.

Only 26 households (0.3%) could not be interviewed. Hence, the reason for non-response in the household questionnaire is not mentioned here. Table 16.2 presents the non-response rate by reasons of non-response for the women's questionnaire by regions. Overall, 559 women could not be interviewed at the time of the survey, yielding a non-response rate for women of 5.6%. The main reason for non-response for the women's questionnaire was the unavailability of women in the household (3.76%).

Table 16.2: Non response rate of women by reason of non-response by geographical area.

Area	Refusal		Not at Home		Others/Missing		Total		Eligible Women
	No.	%	No.	%	No.	%	No.	%	
Residence									
Urban	3	0.24	30	2.42	23	1.85	56	4.51	1,242
Rural	8	0.09	345	3.95	150	1.72	503	5.76	8,741
Ecological zone									
Terai	8	0.20	191	4.76	105	2.61	304	7.57	4,016
Hills	2	0.04	133	2.97	39	0.87	174	3.88	4,480
Mountains	1	0.07	51	3.43	29	1.95	81	5.45	1,487
Sub-Region									
Eastern Terai	0	0.00	39	5.17	10	1.33	49	6.50	754
Central Terai	4	0.53	55	7.29	37	4.91	96	12.73	754
Western Terai	0	0.00	54	7.09	3	0.39	57	7.48	762
Mid-western Terai	3	0.36	27	3.21	11	1.31	41	4.88	841
Far-western Terai	1	0.11	16	1.77	44	4.86	61	6.74	905
Eastern Hills	0	0.00	24	3.56	4	0.59	28	4.15	674
Central Hills	2	0.14	23	1.57	9	0.61	34	2.32	1,466
Western Hills	0	0.00	15	2.30	1	0.15	16	2.45	653
Mid-western Hills	0	0.00	45	5.07	9	1.01	54	6.08	887
Far-western Hills	0	0.00	26	3.25	16	2.00	42	5.25	800
Eastern, Central & Western Mountains	0	0.00	31	4.92	13	2.06	44	6.98	630
Mid- & Far –western Mountains	1	0.12	20	2.33	16	1.87	37	4.32	857
C. Hills (ex Ktm Valley)	2	0.27	23	3.10	9	1.21	34	4.58	742
Kathmandu Valley	0	0.00	0	0.00	0	0.00	0	0.00	724
Nepal	11	0.11	375	3.76	173	1.73	559	5.60	9,983

Children that completed children's questionnaire

The children's questionnaire collected information on children under 5 years of age of currently married women aged 15-49 years by interviewing the women. This questionnaire omitted to include a question regarding the total number of children under 5 years of age, to verify whether there were more eligible children under 5 than was identified in the household questionnaire. As a result, the denominator to compute the percentage that completed the children's questionnaire was taken from the data in the household questionnaire. Hence, the percentage that completed the children's questionnaire may be slightly lower than the figures in Table 16.3.

Table 16.3: Number of children under 5 and percentage of children that completed ARI/diarrhoea, vitamin A and immunisation modules of questionnaire by geographical areas.

Area	Number of children			Number completed			Percent completed (minimum)		
	< 60 mnth	6-59 mnth	12-23 mnth	ARID.	VA	IM.	ARID	VA	IM
Residence									
Urban	700	629	122	660	560	115	94.3	89.0	94.3
Rural	6,582	5,958	1038	6,058	5,329	942	92.1	89.4	90.8
Ecological Zone									
Terai	2,985	2,675	440	2,714	2,377	396	91.0	88.9	90.0

Table 16.3: Continued.

Area	Number of children			Number completed			Percent completed (minimum)		
	<60 mmh	6-59 mmh	12-23 mmh	ARD.	VA	IM.	ARD	VA	M
Hills	3,167	2,894	543	2,955	2,569	496	93.3	88.8	91.3
Mountains	1,130	1,018	177	1,049	943	165	92.8	92.6	93.2
Sub-Region									
Eastern Terai	496	454	90	446	400	81	90.1	88.1	90.0
Central Terai	629	572	77	539	472	66	85.7	82.5	85.7
Western Terai	486	431	68	443	388	66	91.2	90.0	97.1
Mid-western Terai	658	589	112	602	528	99	91.5	89.6	88.4
Far-western Terai	716	629	93	684	589	84	95.5	93.6	90.3
Eastern Hills	470	427	87	431	388	83	91.7	90.9	95.4
Central Hills	834	753	146	796	673	136	95.4	89.4	93.2
Western Hills	440	409	66	417	385	64	94.8	94.1	97.0
Mid-western Hills	726	672	147	678	556	130	93.4	82.7	88.4
Far-western Hills	697	633	97	633	567	83	90.8	89.6	85.6
Eastern, Central & Western Mountains	460	415	95	419	381	87	91.1	91.8	91.6
Mid- & Far -western Mountains	670	603	82	630	562	78	94.0	93.2	95.1
C. Hills (ex Ktm Valley)	485	437	84	448	399	77	92.4	91.3	91.7
Kathmandu Valley	349	316	62	348	274	59	99.7	86.7	95.2
Nepal	7,282	6,587	1,160	6,718	5,889	1,057	92.3	89.4	91.1

Note:
ARD = ARI Diarrhoea Module, VA = Vitamin A Module, IM = Immunisation Module

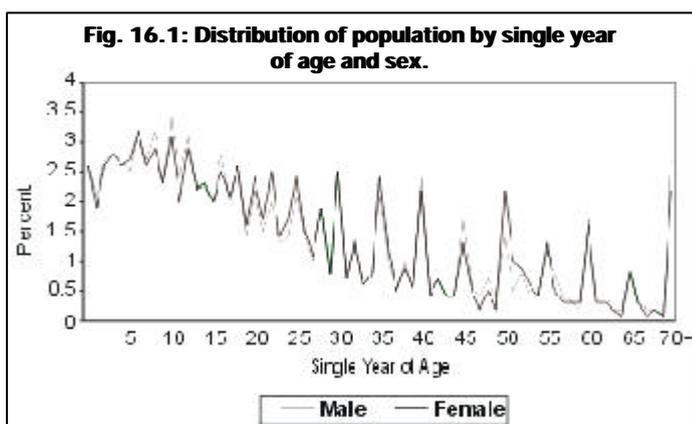
The overall percentage completed (at minimum) in ARI/diarrhoea, vitamin A and immunisation modules were 92.3%, 89.4 % and 91.1%, respectively (Table 16.3). As in the case of the household questionnaire and women's questionnaire, the children's questionnaire also had a low percentage completed in the Central Terai region. The percentage completed (at minimum) for ARI/diarrhoea, vitamin A, and immunisation modules in the Central Terai region were 85.7%, 82.5% and 85.7 %, respectively.

Percentage of children 6-15 years that completed the education module

Of the 10,269 households interviewed, 14,947 children aged 6-15 years were identified and information on 14,588 children could be gathered, yielding a response rate of 97.6% for the education module (Table 16.4). The response rates ranged from 94% to 100% for sub-regions. The response rate was highest in the Hills (99%) as compared to 96.5% for both the Terai and the Mountains.

Table 16.4: Number of children 6-15 years and percentage of children that completed education module of questionnaire by geographical areas.

Area	Eligible children	Number completed	Percent completed
Residence			
Urban	1,634	1,594	97.6
Rural	13,312	12,994	97.6
Ecological zones			
Terai	6,076	5,862	96.5
Hills	6,758	6,688	99.0
Mountains	2,112	2,038	96.5
Sub-Region			
Eastern Terai	1,092	1,087	99.5
Central Terai	1,070	1,017	95.0
Western Terai	1,163	1,127	96.9
Mid-western Terai	1,363	1,307	95.9
Far-western Terai	1,388	1,324	95.4
Eastern Hills	1,145	1,143	99.8
Central Hills	1,967	1,964	99.9
Western Hills	1,050	1,037	98.8
Mid-western Hills	1,358	1,338	98.5
Far-western Hills	1,239	1,206	97.3
Eastern, Central & Western Mountains	973	922	94.8
Mid & Far-western Mountains	1,139	1,116	98.0
Central Hills (ex KTM Valley)	1,200	1,200	100.0
Kathmandu Valley	767	764	99.6
Nepal	14,947	14,588	97.6



Age and sex distribution

Table 16.5 and Figure 16.1 present the single year age distribution of population by sex. The data shows the preference for reporting ages that end in zero or five (age heaping or digit preference), common in countries where ages are not well known. Age heaping was common in both men and women, but at age 50, more age heaping was seen more in females than in males (Figure 16.1). There were nine missing cases for sex and 27 for age out of 57,049 household members.

Table 16.5: Population by single year of age and sex.

Age	Male		Female		Age	Male		Female	
	Number	Percent	Number	Percent		Number	Percent	Number	Percent
0	749	2.6	742	2.6	36	299	1.0	345	1.2
1	610	2.1	550	1.9	37	154	0.5	139	0.5
2	772	2.7	739	2.6	38	298	1.0	267	0.9
3	802	2.8	788	2.8	39	137	0.5	146	0.5
4	777	2.7	748	2.6	40	688	2.4	629	2.2
5	708	2.5	766	2.7	41	134	0.5	122	0.4
6	906	3.2	909	3.2	42	208	0.7	212	0.7
7	782	2.7	738	2.6	43	120	0.4	123	0.4
8	917	3.2	809	2.9	44	125	0.4	120	0.4
9	669	2.3	664	2.3	45	493	1.7	377	1.3
10	988	3.4	878	3.1	46	181	0.6	136	0.5
11	676	2.4	561	2.0	47	113	0.4	70	0.2
12	891	3.1	812	2.9	48	198	0.7	128	0.5
13	640	2.2	635	2.2	49	115	0.4	55	0.2
14	673	2.3	658	2.3	50	403	1.4	622	2.2
15	564	2.0	569	2.0	51	131	0.5	281	1.0
16	795	2.8	721	2.5	52	226	0.8	252	0.9
17	565	2.0	591	2.1	53	123	0.4	166	0.6
18	758	2.6	742	2.6	54	120	0.4	127	0.4
19	404	1.4	456	1.6	55	358	1.2	362	1.3
20	623	2.2	691	2.4	56	225	0.8	141	0.5
21	443	1.5	486	1.7	57	102	0.4	73	0.3
22	588	2.0	720	2.5	58	99	0.3	91	0.3
23	370	1.3	394	1.4	59	71	0.2	71	0.3
24	415	1.4	467	1.7	60	498	1.7	445	1.6
25	635	2.2	703	2.5	61	107	0.4	83	0.3
26	401	1.4	414	1.5	62	106	0.4	94	0.3
27	299	1.0	322	1.1	63	61	0.2	57	0.2
28	539	1.9	547	1.9	64	61	0.2	41	0.1
29	219	0.8	222	0.8	65	269	0.9	258	0.9
30	715	2.5	709	2.5	66	88	0.3	89	0.3
31	224	0.8	198	0.7	67	50	0.2	36	0.1
32	364	1.3	392	1.4	68	66	0.2	57	0.2
33	195	0.7	171	0.6	69	34	0.1	29	0.1
34	209	0.7	226	0.8	70+	779	2.7	625	2.2
35	613	2.1	668	2.4					
						Age missing for male		1	
						Age missing for female		8	
						Sex missing for age		27	
					Total	28,738	100.0	28,275	100.0

Table 16.6 shows the numerical and percentage distribution of the female population, currently married women and women interviewed by broad age groups. There is an expected pattern of the declining number and percentage of women as age increases except for the age group of 45-49. The graph in Figure 16.1 shows that a number of women of the age group 45-49 were often lumped by interviewers or respondents themselves as belonging under the next older age group. The table also shows that the response rate was low in the age group 15-19 (88.3%), but that the response rate did not vary significantly for other age groups.

Table 16.6: Female population, currently married women and women interviewed by 5-year age intervals.

Age Group	Female population		Currently married women		Women interviewed		Percent interviewed
	Number	Percent	Number	Percent	Number	Percent	
10-14	3,544	NA	NA	NA	NA	NA	NA
15-19	3,079	23.2	932	9.3	23	8.7	88.3
20-24	2,758	20.8	2,166	21.7	2,018	21.4	93.2
25-29	2,208	16.6	2,052	20.6	1,951	20.7	95.1
30-34	1,696	12.8	1,610	16.1	1,551	16.5	96.3
35-39	1,565	11.8	1,477	14.8	1,420	15.1	96.1
40-44	1,206	9.1	1,109	11.1	1,052	11.2	94.9
45-49	766	5.8	636	6.4	609	6.5	95.8
50-54	1,448	NA	NA	NA	NA	NA	NA
15-49	13,278*	NA	9,983	NA	9424	NA	94.4

Note: * denotes female population aged 10-49 years.

Missing cases for key variables

Table 16.7 presents the percentage of missing cases by selected key variables in different modules of the questionnaire. There was no key variable with cases missing greater than 10%, which reflects the better quality of information. The highest percentage of missing cases was noticed for age of first pregnancy (7.02 %), followed by ever been tested for HIV/AIDS (4.44 %).

Table 16.7: Percentage of missing cases for selected data items

Questions	Reference population	Eligible respondent	Percent missing cases
Household Listing			
Sex member	HH members	57,049	0.05
Age member	HH members	57,049	0.02
Able to read and write	Pop 6 years and above	48,292	1.08
Level of education	HH members literate from formal education	24,699	1.19
Birth registration	Children < 6 yrs	8,779	3.08
Household			
Main source of drinking water	Household	10,269	0.10
Toilet in household	Household	10,269	0.10
Electricity in household	Household	10,269	0.07
No. of bed rooms	Household	10,269	1.23
Salt iodisation	Household	10,269	0.31
Children 6-15 yrs			
Ever attended school	Children 6-15	14,588	0.05
Currently attending school	Children ever attend school	11,391	0.02
Current level of education	Current schooling children	10,980	0.17

Table 16.7: Continued.

Questions	Reference population	Eligible respondent	Percent missing cases
Currently married women 15-49 yrs			
Age at marriage	Eligible women 15-49 yrs	9,424	0.35
Age at first pregnancy	Ever been pregnant	9,146	7.02
Number of children given birth	Eligible women 15-49 yrs	9,424	0.19
Level of education	Attended school	2,148	2.79
Knowledge on family planning	Eligible women 15-49 yrs	9,424	0.02
Times of ANC visit	Women who had ANC visit	2,066	0.73
Months pregnant on first ANC visit	Women who had ANC visit	2,066	2.08
Place of delivery		5,364	0.15
Knowledge of HIV/AIDS	Eligible women 15-49 yrs	9,424	0.05
Knowledge of HIV/AIDS testing place	Women who heard about AIDS	3,577	0.84
Ever been tested for HIV	Women who know the place of HIV testing	879	4.44
Children under 5 yrs			
Diarrhoea in last two weeks	Children under 5 yrs	6,718	0.04

Households and respondents by background characteristics

Table 16.8 presents the distribution of the sampled household by region and by the number of members in the household. About 13% of households were urban and 87% rural. The Central Terai region made up the largest of the sub-regions, with 16% of the households, followed by the Eastern Terai and Western Hills with 15% and 14% of households, respectively. Each of the remaining regions contained between 3% and 8% of households. Most households had four to five members (37%) and 3% of households had a single member. The average household size was 5.5. Approximately 12% of households had at least one child under age 5 and 18% of households had at least one currently married woman aged 15-49.

Table 16.8: Percentage distribution of households by background variables.

Background Variable	Unweighted		Weighted	
	Number	Percent	Number	Percent
Residence				
Urban	1,348	13.1	1,316	12.8
Rural	8,947	86.9	8,986	87.2
Ecological zone				
Terai	3,940	38.3	4,601	44.7
Hills	4,788	46.5	4,870	47.3
Mountains	1,567	15.2	832	8.1
Sub-Region				
Eastern Terai	797	7.7	1,528	14.8
Central Terai	769	7.5	1,631	15.8
Western Terai	787	7.6	677	6.6
Mid-western Terai	783	7.6	448	4.4
Far-western Terai	804	7.8	317	3.1
Eastern Hills	772	7.5	791	7.7
Central Hills	1,597	15.5	1,512	14.7
Western Hills	807	7.8	1,469	14.3
Mid-western Hills	826	8.0	717	7.0
Far-western Hills	786	7.6	381	3.7

Table 16.8: Continued.

Background Variable	Unweighted		Weighted	
	Number	Percent	Number	Percent
Eastern, Central & Western				
Mountains	754	7.3	490	4.8
Mid- & Far –western Mountains	813	7.9	342	3.3
Central Hills (ex KTM Valley)	799	7.8	886	8.6
Kathmandu Valley	798	7.8	626	6.1
Number of household members				
1	274	2.7	264	2.6
2-3	1,667	16.2	1,687	16.4
4-5	3,682	35.8	3,769	36.6
6-7	2,829	27.5	2,810	27.3
8-9	1,147	11.1	1,083	10.5
10+	665	6.5	651	6.3
At least one child age under 5 yrs	1,199	11.7	1,161	11.3
At least one child age under 15 yrs	3,673	35.8	3,616	35.2
At least one woman age 15-49 yrs	2,421	23.6	2,427	23.6
At least one currently married woman age 15-49 yrs	1,806	17.6	1,785	17.4
Nepal	10,295	100.0	10,302	100

Table 16.9: Percentage distribution of currently married women 15-49 years by background variables.

Background Variable	Unweighted		Weighted	
	Number	Percent	Number	Percent
Residence				
Urban	1,186	12.6	1,139	12.1
Rural	8,238	87.4	8,286	87.9
Ecological zone				
Terai	3,712	39.4	4,372	46.4
Hills	4,306	45.7	4,313	45.8
Mountains	1,406	14.9	740	7.9
Sub-Region				
Eastern Terai	705	7.5	1,414	15.0
Central Terai	658	7.0	1,526	16.2
Western Terai	705	7.5	634	6.7
Mid-western Terai	800	8.5	468	5.0
Far-western Terai	844	9.0	330	3.5
Eastern Hills	646	6.9	676	7.2
Central Hills	1,432	15.2	1,350	14.3
Western Hills	637	6.8	1,162	12.3
Mid-western Hills	833	8.8	750	8.0
Far-western Hills	758	8.0	375	4.0
Eastern, Central & Western				
Mountains	586	6.2	392	4.2
Mid- & Far-western Mountains	820	8.7	348	3.7
Central Hills (ex KTM Valley)	708	7.5	795	8.4
Kathmandu Valley	724	7.7	555	5.9

Table 16.9: Continued

Background Variable	Unweighted		Weighted	
	Number	Percent	Number	Percent
Age of women				
15-19	823	8.7	801	8.5
20-24	2,018	21.4	1,985	21.1
25-29	1,951	20.7	1,985	21.1
30-34	1,551	16.5	1,584	16.8
35-39	1,420	15.1	1,397	14.8
40-44	1,052	11.2	1,064	11.3
45-49	609	6.5	610	6.5
Education level of women				
None	6,841	72.6	6,688	71.0
Informal education	567	6.0	552	5.9
Primary	732	7.8	778	8.3
Secondary +	1,284	13.6	1,406	14.9
Nepal	9,424	100.0	9,425	100.0

Table 16.9 presents the distribution of currently married women of 15-49 years by geographical areas, age group and by education level. Women of 20-25 years of age and 25-29 years of age made up the greatest percentage of the sample at 21%. This percentage declined steadily across age groups until the age group of 45-49 years, when it was 6.5%. A majority of the currently married women were illiterate (71%). Among the literate currently married women, 6% had informal education, 8% had primary level education, and 15% had secondary level education or higher.

Table 16.10: Percentage distribution of children under 5 years of currently married women by background Variable

Background Variable	Unweighted		Weighted	
	Number	Percent	Number	Percent
Residence				
Urban	660	9.8	642	9.6
Rural	6,058	90.2	6,075	90.4
Ecological zone				
Terai	2,714	40.4	3,212	47.8
Hills	2,955	44.0	2,948	43.9
Mountains	1,049	15.6	557	8.3
Sub-Region				
Eastern Terai	446	6.6	906	13.5
Central Terai	539	8.0	1,270	18.9
Western Terai	443	6.6	406	6.0
Mid-western Terai	602	9.0	360	5.4
Far-western Terai	684	10.2	269	4.0
Eastern Hills	431	6.4	461	6.9
Central Hills	796	11.8	776	11.6
Western Hills	417	6.2	777	11.6
Mid-western Hills	678	10.1	610	9.1
Far-western Hills	633	9.4	324	4.8
Eastern, Central & Western Mountains	419	6.2	287	4.3
Mid- & Far -western Mountains	630	9.4	270	4.0
Central Hills (ex Ktm Valley)	448	6.7	513	7.6
Kathmandu Valley	348	5.2	263	3.9

Table 16.10: Continued

Background Variable	Unweighted		Weighted	
	Number	Percent	Number	Percent
Sex				
Male	3,450	51.4	3,453	51.4
Female	3,268	48.6	3,264	48.6
Age of children				
< 6 months	658	9.8	615	9.2
6-11 months	754	11.2	742	11.0
12-23 months	1,083	16.1	1,093	16.3
24-35 months	1,382	20.6	1,369	20.4
36-47 months	1,469	21.9	1,500	22.3
48-59 months	1,372	20.4	1,399	20.8
Mother's education level/able to read & write				
None	4,994	74.3	4,881	72.7
Informal education	329	4.9	308	4.6
Primary	502	7.5	532	7.9
Secondary +	893	13.3	994	14.8
Nepal	6,718	100.0	6,717	100.0

Table 16.10 presents the distribution of children under 5 years of age by geographical areas, sex, age, and mother's education. Fifty-one percent of children under 5 years were male and 49% were female. A high proportion of children was found in the age group 36-47 months (22%). Children, under 5 years of illiterate mother made up 73%. Similarly, children of educated mother with primary and secondary + level of education were 8% and 14% respectively.

Appendices

APPENDIX - 1

Sample Design for BCHIMES

Introduction

The NMIS evaluation report suggested that instead of two cycles per year in NMIS one survey be carried out every year with detailed analysis that would have wide-ranging dissemination and plans of data use. In the future, BCHIMES (Between Census Household Information, Monitoring and Evaluation System) will be conducted on a regular basis to generate needed data. The following suggestions were also made in the NMIS evaluation report for the effective design of the sample.

- ❑ For every new study, always select a new sample so as to minimise the Hawthorne effect.
- ❑ In order to minimise the standard error of the estimate, always try to make the cluster size small, i.e., around 50, as compared to an average cluster size of 120 for the NMIS cycles.

Thus, the new sample design should limit the average cluster size to 50 or smaller and a new sample should be drawn for a new study every time for the minimisation of the Hawthorne effect.

Domains of estimation

A sample design to provide district level estimates was desirable keeping in view the decentralisation programme of the His Majesty's Government of Nepal. However, as the sample size needed for this would be very large and the survey undertaking also huge as well as expensive, it was decided that the size of the survey should provide national as well as some sub-regional estimates. Under the guidance of the Steering Committee as well as the discussion between the CBS personnel and UNICEF led to the conclusion that a minimum of 13 estimates is needed for different geographic areas and these are 1. Five eco-development regions each from the Terai and Hills; 2. Estimates for the Kathmandu Valley; and finally 3. Two estimates for the mountain region, for which the Central, Eastern and Western Mountain regions would be combined as one and the other would be the combination of the Mid-western and Far-western Mountain regions. Although there are some variations within these mountain regions, regions having comparable characteristics would be combined as one. Since the number of households was the basis of the selection of our sample, we used average size of the household as an indicator to provide the similarity between these combined areas. For example, the average household size was 5.5 in both the Far-western and Mid-western Mountains. Likewise, the average household size for the Eastern, Central and Western Mountains is, respectively, 5.3, 5.0 and 4.8. That is, the average household size was slightly higher in the Far-western and the Mid-western regions and was slightly lower in the others including the Eastern, Central and Western Mountains. In other words, the areas that were combined were quite close in terms of average household size.

Stratification

In domains with urban areas, the stratification was done according to urban/rural residence. Although the urban/rural estimates for these domains would be of interest, it would have increased the sample size considerably. Thus, at this stage, there were no plans to obtain urban/rural estimates for these 13 domains of estimation. Note, however,

that the urban/ rural estimates could be available for the national level, as well as for the Hills and Terai. Because the sample was selected separately for each domain, there was a built-in stratification for the Hills, Terai and Mountains as well as the development regions for most of the domains of study.

Estimation of sample size

Estimates of the sample size, to a large extent, depend on the variable under study. As some variables have a larger variation, sample size estimates depend on the variables. To circumvent this problem, statisticians usually resort to estimating the sample size for variables where the largest sample size is needed and use this as the required minimum sample size. Also, because most of the sample survey use the cluster sample approach, it was necessary to make an allowance of about 2 for the design effect. The magic figure of 2 was based on the design effect calculated for different variables in the Nepal Family Health Survey 1996.

It was estimated that a sample size of 800 was adequate for most of the variables, taking into account a design effect factor of 2. This sample size of 800 was regarded as the minimum sample size required for the domain of analysis. Since there are 13 domains, a total of $13 \times 800 = 10400$ households were required.

Sample weights/raising factors

Because of the equal allocation of sample size for all the domains, the proportionality of the sample allocation was not met and, thus, sample weights needed to be calculated for the national as well as the Hill, Terai and Mountain region estimates. Final weights/raising factors depended on the number of households interviewed in each domain. For the calculation of sample weights, the module developed by UNICEF was used.

Table No. A.1 Number of Households by Hills, Terai, Mountains and Development Region*

		Far western	C	Mid western	C	Western	C	Central	Eastern	C	Total	
	Urban	0			0	7846					1	7846
Mountain	Rural	107767			16	158487					15	266254
Total		107767			16	166333					16	274100
								KTM Valley Districts	Out of Valley Districts			
	Urban	8834	1	7680	1	48233	2	121761(10)	25944(1)	13705	1	226157
Hill	Rural	115458	15	214453	15	418186	14	79277(6)	258111(15)	249174	15	1334659
	Total	124292	16	222133	16	466419	16	201038(16)	284055(16)	262879	16	1560816
	Urban	20919	3	22650	2	21995	2		48104(1)	74526	2	188194
Tarai	Rural	80065	13	123499	14	197940	14		490015(15)	416853	14	1308372
	Total	100984	16	146149	16	219935	16		538119(16)	491379	16	1496566

*Households for Far-western Mountains and Mid-western mountains have been combined and in a like-wise manner Western, Central and Eastern mountains have been combined. Bold figures represent the proportionate allocation of Clusters (C) by urban and rural areas.

Sample frame

The sample frame for this study was the data from the 1991 Census data on Households for VDCs and their wards. When the census was undertaken in 1991 there were only 31 urban areas in Nepal. However, after 1991 Census, the government declared new municipalities. As a result, there are currently 58 municipalities, of which one is a metropolitan city and three are sub-metropolitan cities. The census data was updated to take into account the change in urban areas.

Allocation of the sample

In domains that have urban areas, the urban sample was be allocated proportionately. Urban and rural samples were selected separately using a PPS (Probability Proportional to Size) method. For example, consider the case of the Eastern Terai domain. Initially, the sample size of 800 was allocated to urban and rural areas. The Eastern Hills had 491,379 households, out of which 74,526 households were in the urban area. As indicted in Table 1, two clusters have been allocated to urban areas and 14 clusters to rural areas.

The following table provides information on the number of urban and rural clusters selected from each of the domains of estimation.

As the figures in Table A1 suggested, the total number of clusters surveyed was 208 with an average cluster size of 50, providing a sample size of nearly 10,400. Likewise, the number of urban clusters will be 27 and the number of rural clusters will be 181. The proportion of urban clusters was 13 percent.

Selection procedure used

For any given domain, the districts were arranged according to the code for districts provided by the Central Bureau of Statistics. If the code of a district is lowest, it appears first in the list. Within the district, VDCs are listed in an alphabetical order. For each VDC, there will be nine wards, for which there is data regarding number of households, total population, males and females.

Initially, the number of households in a domain was cumulated. The total number of households in a domain is divided by the number of clusters selected in the domain. This provided the systematic interval. Then, a random number between 1 and the systematic interval was selected for the first selection. Once the first selection was made, the systematic interval was added to that for the second selection and so on, until the last selection for the domain was made. If a domain consisted of urban and rural areas, then the selection was made separately for the urban and rural areas. Obviously, a proportionate allocation of sample was done for urban as well as rural areas within a domain. Note that a cluster size of 50 was used for the purpose of data collection. In fact, a number of wards will have a population well over 50, and in some cases a ward could have a population substantially less than 50. In some cases, some wards may have to be split and other wards merged to provide a cluster size of around 50.

Estimation of standard errors/variance

This design is same as that used in the Family Health Survey 1996 and thus the variance estimation formula used in NFHS1996 is also valid for this design.

The NFHS 1996 report uses the Jackknife method of estimation of standard errors for complex rates and proportions such as mortality rates. The application of this technique to NMIS data has provided for errors quite close to other estimation formulae. The initial formatting of the Jackknife method is time-consuming in EXCEL, but once set up for one variable, it can be used for other variables by substituting the new data. In fact, this method of variance estimation was used in this survey.

$$\text{Var}(r) = \frac{1}{k(k-1)} \sum_{i=1}^k (r_i - r)^2$$

Where $r_i = kr - (k-1)r(i)$, r is the overall estimate of the proportion or rate, k = number of clusters (in our case around 200), and $r(i)$ is the estimate of the rate or proportion excluding the data from the cluster i .

Table A.2 Sampling Errors- Total Sample

S.No.	Variable	Value (R) (SE)	Standard error Weighted	Number of Cases (DEFT)	Design effect (SE/R)	Relative error	Confidence limits	
							R-2SE	R+ 2SE
1	Sanitation	0.293	0.025	10245	5.665	0.085	0.243	0.343
2	Safe water	0.799	0.021	10273	5.395	0.026	0.757	0.841
3	Ever use of contraception	0.577	0.010	9425	1.950	0.017	0.557	0.597
4	Current use of contraception	0.372	0.012	9425	2.369	0.032	0.348	0.396
5	ANC	0.374	0.020	5522	3.086	0.053	0.334	0.414
6	PNC	0.123	0.013	5343	2.834	0.106	0.097	0.149
7	Prevalence of diarrhoea under 5	0.160	0.008	7606	2.014	0.050	0.144	0.176
8	Prevalence of bloody diarrhoea under 5	0.260	0.016	1142	1.260	0.062	0.228	0.292
9	Prevalence of ARI under 5	0.279	0.011	7609	2.190	0.039	0.257	0.301
10	BCG	0.836	0.018	1057	1.580	0.022	0.8	0.872
11	DPT3	0.646	0.023	1057	1.568	0.036	0.6	0.692
12	Polio3	0.748	0.017	1057	1.266	0.023	0.714	0.782
13	Measles	0.798	0.019	1057	1.550	0.024	0.76	0.836
14	Vitamin A	0.875	0.013	6857	3.239	0.015	0.849	0.901
15	Aged 6 and over both sexes	0.578	0.013	47887	5.546	0.022	0.552	0.604
16	Literacy 15+ total	0.507	0.015	34089	5.701	0.030	0.477	0.537
17	Literacy 15+ males	0.658	0.016	17098	4.511	0.024	0.626	0.69
18	Literacy 15+ females	0.354	0.016	16991	4.474	0.045	0.322	0.386
19	Currently married women's literacy (15-49)	0.264	0.014	9984	3.156	0.053	0.236	0.292
20	Knowledge of STD	0.287	0.015	9419	3.322	0.052	0.257	0.317
21	Knowledge of HIV/AIDS	0.380	0.019	9419	3.824	0.050	0.342	0.418

Table A.3 Sampling Errors- Rural Sample

S.No.	Variable	Value (R)	Standard error (SE)	Number of Cases Weighted	Design effect (DEFT)	Relative error (SE/R)	Confidence limits	
							R-2SE	R+ 2SE
1	Sanitation	0.230	0.024	8936	5.314	0.104	0.182	0.278
2	Safe water	0.781	0.024	8961	5.465	0.031	0.733	0.829
3	Ever use of contraception	0.551	0.009	8285	1.700	0.016	0.533	0.569
4	Current use of contraception	0.346	0.012	8285	2.202	0.035	0.322	0.370
5	ANC	0.328	0.020	4922	2.944	0.061	0.288	0.368
6	PNC	0.081	0.009	4766	2.302	0.111	0.063	0.099
7	Prevalence of diarrhoea under 5	0.165	0.009	6857	2.052	0.055	0.147	0.183
8	Prevalence of bloody diarrhoea under 5	0.265	0.017	1059	1.268	0.064	0.231	0.299
9	Prevalence of ARI under 5	0.279	0.012	6860	2.263	0.043	0.255	0.303
10	BCG	0.827	0.019	942	1.579	0.023	0.789	0.865
11	DPT3	0.628	0.025	942	1.566	0.040	0.578	0.678
12	Polio3	0.736	0.018	942	1.274	0.024	0.700	0.772
13	Measles	0.792	0.021	942	1.597	0.027	0.750	0.834
14	Vitamin A	0.885	0.013	6208	3.236	0.015	0.859	0.911
15	Literacy 6 + total	0.553	0.013	42010	5.293	0.024	0.527	0.579
16	Literacy 15+ total	0.48	0.016	29763	5.486	0.033	0.448	0.512
17	Literacy 15+ males	0.636	0.017	14932	4.409	0.027	0.602	0.670
18	Literacy 15+ Female	0.324	0.016	14826	4.271	0.049	0.292	0.356
19	Currently married women's literacy (15-49)	0.226	0.007	8741	1.538	0.031	0.212	0.240
20	Knowledge of AIDS	0.328	0.017	8233	3.362	0.052	0.294	0.362
21	Knowledge of STD	0.242	0.014	8233	2.878	0.058	0.214	0.270

Table A.4 Sampling Errors- Urban Sample

S.No.	Variable	Value (R)	Standard error (SE)	Number of Cases Weighted	Design effect (DEFT)	Relative error (SE/R)	Confidence limits	
							R-2SE	R+ 2SE
1	Sanitation	0.723	0.088	1309	7.133	0.122	0.547	0.899
2	Safe water	0.920	0.029	1312	3.981	0.032	0.862	0.978
3	Ever use of contraception	0.768	0.025	1140	2.035	0.033	0.718	0.818
4	Current use of contraception	0.561	0.037	1140	2.530	0.066	0.487	0.635
5	ANC	0.757	0.043	600	2.433	0.057	0.671	0.843
6	PNC	0.473	0.061	577	2.941	0.129	0.351	0.595
7	Prevalence of diarrhoea under 5	0.116	0.015	749	1.253	0.129	0.086	0.146
8	Prevalence of bloody diarrhoea Under 5	0.193	0.053	83	1.235	0.275	0.087	0.299
9	Prevalence of ARI under 5	0.275	0.024	749	1.443	0.087	0.227	0.323
10	BCG	0.913	0.043	115	1.640	0.047	0.827	0.999
11	DPT3	0.791	0.056	115	1.469	0.071	0.679	0.903
12	Polio3	0.852	0.035	115	1.046	0.041	0.782	0.922
13	Measles	0.843	0.033	115	0.979	0.039	0.777	0.909
14	Vitamin A	0.783	0.052	649	3.215	0.066	0.679	0.887
15	Literacy 6 + total	0.756	0.028	5877	5.005	0.037	0.700	0.812
16	Literacy 15+ total	0.69	0.047	4326	6.644	0.068	0.596	0.784
17	Literacy 15+ males	0.812	0.048	2166	5.683	0.059	0.716	0.908
18	Literacy 15+ Female	0.568	0.051	2160	4.765	0.090	0.466	0.670
19	Currently married women's literacy (15-49)	0.534	0.041	1243	2.874	0.077	0.452	0.616
20	Knowledge of AIDS	0.741	0.052	1186	4.087	0.070	0.637	0.845
21	Knowledge of STD	0.603	0.045	1186	3.180	0.075	0.513	0.693

Table A.5: Early Childhood Development experience by sex and background variables

Background variable	ECD experience in percent			
	Male	Female	Total	Total Number
Place of residence				
Urban	66.3	67.5	66.9	139
Rural	45.0	46.5	45.7	1723
Ecological zone				
Terai	41.9	43.8	42.7	712
Hills	53.9	53.2	53.6	939
Mountains	33.9	35.8	34.7	212
Sub-region				
Eastern Terai	52.7	49.8	51.4	219
Central Terai	21.8	28.2	24.1	200
Western Terai	16.0	25.3	19.5	62
Mid-western Terai	49.6	43.1	46.5	143
Far-western Terai	73.8	73.8	73.8	87
E+ C+ W Mountains	22.2	29.1	25.2	109
F+ MW Mountains	45.6	43.7	44.9	102
KTM Valley	79.7	84.7	82.0	59
Eastern Hills	45.7	41.7	43.8	260
Central Hills	83.7	94.7	89.3	160
Western Hills	9.1	4.7	6.9	162
Mid-western Hills	77.4	77.2	77.3	173
Far-western Hills	47.3	37.7	42.7	125
Total	46.6	48.1	47.3	1863

APPENDIX - 2

BCHIMES**100. Household Information Panel**

101. District <input type="text"/>	102. VDCMunicipality Name
103. Ward Number <input type="text"/>	104. Cluster Number
105. Name of Village/Tole <input type="text"/>	106 Household Number
107. Date of Interview <input type="text"/> <input type="text"/> <input type="text"/> DD MM YY	
108. Name of Household Head	109. Name of the Respondent
110. Gender of HHH <input type="checkbox"/> 1 = Male 2 = Female	111. Religion of HHH <input type="checkbox"/> 1 = Hindu 2 = Buddhist 3 = Islam 4 = Christian 5 = Others
112. Caste Ethnicity of HHH <input type="text"/> (Use the Ethnicity Codes Provided)	113. Mother Tongue <input type="text"/> (Use the Language Codes Provided)
114. Revisit Necessary <input type="checkbox"/> 1 = Yes 2 = No	115. Date when Revisit is to be made <input type="text"/> <input type="text"/> <input type="text"/> DD MM YY
116. Interview Complete? <input type="checkbox"/> (if Yes, fill in from Q.118 onwards) 1 = Yes 2 = No	
117. Reasons for no/or incomplete interview <input type="checkbox"/> 1 = Refusal 2 = No HH member at home 3 = No competent person at home 4 = Entire HH empty 5 = others (specify)	
118. Interviewer Code <input type="text"/> <input type="text"/> (See list)	119. Editor code <input type="text"/> <input type="text"/> (See list)
120. Supervisor code <input type="text"/> <input type="text"/> (See list)	121. Data Entry operator <input type="text"/> <input type="text"/>

200. Household schedule

201. S.N	202. HH Member's Name	203. Relation ship	204. Gender 1 = male 2 = female	205. Age in completed yrs	206. Age under 5 Yes = 1 No = 2	207. currently married women (15-49) Yes = 1 No = 2	For persons 6 years or older			211. Tick here if the child is between 6-15 years	212. For children 5 years or under ask whether the child birth has been registered? 1 = yes 2 = no	213. If the birth is not registered, ask birth not registered? See code list 1
							208. Can s/he read and write? Yes = 1 No = 2 If no go to 211	209. If yes how did s/he learn to read and write?	210. If s/he attended school highest level of grade completed			
1		<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2		<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3		<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4		<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5		<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6		<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7		<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8		<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9		<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10		<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tick here if continuation HH sheet is used <input type="checkbox"/>												

214. Total Household member number

300. Education Module (to be asked of children 6-15 years of age only)

Questions	Line Number..... Name..... Sex: Age:				
301 . Has s/he ever attended school? (Circle appropriate codes)	1 = Yes(Go to Q303) 2 = No (Go to Q302)	1 = yes(go to 303) 2 = No(go to Q302)	1 = yes(go to 303) 2 = No(go to Q302)	1 = yes(go to 303) 2 = No(go to Q302)	1 = yes(go to 303) 2 = No(go to Q302)
302 . Why did not S/he go to school? (multiple response questions record up to 3 responses)					
1 = Child was sick	1	1	1	1	1
2 = S/he had to help in household/farm chores	2	2	2	2	2
3 = School too far	3	3	3	3	3
4 = Teachers not good	4	4	4	4	4
5 = Child not willing to attend school	5	5	5	5	5
6 = Language problem	6	6	6	6	6
7 = Cannot afford/expensive	7	7	7	7	7
8 = Girls/daughters should not be educated	8	8	8	8	8
9 = Others (specify)	9	9	9	9	9
	(Ask from section 400)				
303 . Is s/he currently attending school? (Circle appropriate codes)	1 = Yes(Ask q304) 2 = No(Q 311)				
304 . Did the child attend preprimary school earlier? 1 = Yes 2= No	<input type="checkbox"/> <input type="checkbox"/>				
305 . Which grade child is currently attending?	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>				
306 . Which school child is currently attending? 1 = public school 2 = private school 3 = Madarsa 4 = others(specify)	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
307 . What year did s/he enter grade 1? (DK = 98)	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>				
308 . How much time does s/he spend on commuting to school?(in minutes)	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
309 . Did s/he go to school during last three days (except holidays)? 0 = none 1 = for one day 2 = for two days 3 = for three days	If 0 go to 310 0 1 2 3 (Ask from 400 If other than 0)	If 0 go to 310 0 1 2 3 (Ask from 400 If other than 0)	If 0 go to 310 0 1 2 3 (Ask from 400 If other than 0)	If 0 go to 310 0 1 2 3 (Ask from 400 If other than 0)	If 0 go to 310 0 1 2 3 (Ask from 400 If other than 0)

Questions	Line Number..... Name..... Sex: Age:	Line Number..... Name..... Sex: Age:	Line Number..... Name..... Sex: Age:	Line Number..... Name..... Sex: Age:	Line Number..... Name..... Sex: Age:
<p>310. If the child did not attend any classes in last three school days ask why did this child did not go to school these days?(multiple response questions record up to three response) 1 = Child was sick 2 = S/he had to help in household/farm chores 3 = School is too far 4 = Teachers not good 5 = Child not willing to attend school 6 = Language problem 7 = Others (specify)</p>	<input type="checkbox"/> Ask from section 400				
<p>311. Which school did s/he attend in the past? 1 = public school 2 = private school 3 = Madarsa 4 = others (specify)</p>	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4
<p>312. What year did s/he enter grade 1? If the child attended only preprimary school then write 97</p>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>			
<p>313. What grade did s/he complete?</p>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>			
<p>314. Did the child attend preprimary school earlier? 1 = Yes 2 = No</p>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>			
<p>315. Which year did s/he dropped out?</p>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>			

Questions	Line Number..... Name..... Sex: Age:				
316. What are the main reasons for discontinuing? (multiple response questions record up to 3 response) 1 Completed desired schooling 2 Further schooling not available 3 Too expensive 4 Had to help at home/farm 5 School or teacher not good 6 All male teachers 7 Parents did not want 8 Had to repeat the grade /FAILED 9 Not willing to attend 10 Language problem 11 Got married 12 Scarcity of textbooks 13 Others (specify)	1 2 3 4 5 6 7 8 9 10 11 12 13	1 2 3 4 5 6 7 8 9 10 11 12 13	1 2 3 4 5 6 7 8 9 10 11 12 13	1 2 3 4 5 6 7 8 9 10 11 12 13	1 2 3 4 5 6 7 8 9 10 11 12 13

Tick here if continuation sheet for education module is used

400. Drinking Water

401. What is the main source of drinking water in this household?
(Circle appropriate code)
- | | |
|-----------------------------------|------------------------------------|
| 1. Piped in dwelling | 7. River/stream |
| 2. Public tap | 8. Stone tap |
| 3. Private tube well /bore hole | 9. Neighbors private tap |
| 4. Public tube well/ bore hole | 10. Neighbors tube well/ bore hole |
| 5. Private dug well/ Spring/ Pond | 11. Others |
| 6. Public dug well/ Spring/ Pond | |
402. Is water sufficient from that source? 1. Yes 2. No
- 402.a For how many months water available from that source?months
403. How long it takes to bring one trip of water?minutes
(if at house write 000 and ask question 405)
404. How many drinking water trips made yesterday for this household consumption?
- | | |
|-------------------------------|-------|
| Male | trip |
| Female | trip |
| Children (under 15 yr.) | trips |
| Total | trips |
405. What do you do to treat water? (upto 3 answers)
- | | |
|-------------------------------|------------------------------|
| 1. Boil water before drinking | 4. Cover water vessel |
| 2. Put tablet to purify water | 5. Clean the source of water |
| 3. Filter | 6.others (specify) |
406. Did you noticed any following diseases in your community?
- | | | |
|---------------------|-------|-------|
| 1. Diarrhea | 1.Yes | 2. No |
| 2. Dysentery | 1.Yes | 2. No |
| 3. Jaundice | 1.Yes | 2. No |
| 4. Typhoid | 1.Yes | 2. No |
| 5. Cholera | 1.Yes | 2. No |
| 6. Others (Specify) | | |

500. Sanitation and Latrine

501. Is this house has own toilet? 1. Yes 2. No (go to q. no. 510)
502. What type of latrine has this house?
1. Modern flush system
 2. Pan connected with sewage
 3. Ventilated pit
 4. Pan not connected with sewage
503. Do all the children (Aged 5 to 14) use latrine?
1. All use
 2. Some use
 3. Nobody use
 4. No children 5-14
504. Do all the adult (> 15 yrs of age) use latrine?
1. All use
 2. Some use (go to q. no. 506)
 3. Nobody use (go to q. no. 505)

- 505. Why the latrine in not used?**
1. Bad smelling
2. Dirty
3. Lack of water
4. Latrine filled
5. Other (Specify)
- 506. How far is the latrine from house?**
1. Inside the house
2. Less than 50 feet
3. 51-100 feet
4. more than 100 feet
- 507. How far is the latrine from source of water?**
1. Inside the house
2. Less than 50 feet
3. 51-100 feet
4. more than 100 feet
- 508. Is latrine in working condition? (See) 1. Yes 2. No**
- 509. Is latrine clean? (See) 1. Yes 2. No**

(After asking 509 go to 512)

- 510. Where household member goes for defecation?**
1. Own land
2. Forest
3. Own land outside
4. Near water source
5. Open field
6. Others (specify)
- 511. What is the cause for not constructive latrine?**
1. No habit
2. Bad smelling
3. No space
4. Not aware to use latrine
5. No money
6. Others (specify).....
- 512. Where do you throw children's stool?**
1. Outside house (wherever)
2. In the pit
3. In the dustbin agricultural
4. Field
5. Toilet
6. Others(specify)
- 513. Where do you throw the wastage of house?**
1. Compost field
2. Dustbin
3. Street
4. Side of house
5. Wherever
6. Municipality pick up area (go to # 515)
7. Others (specify)

514. **How far is the dustbin place from your house?**
 1. Side by
 2. Less than 50 feet distance
 3. 50-100 feet
 4. 101-300 feet
 5. > 300 feet
515. **Do all the members wash hands before meal?**
 1. All do
 2. Some do
 3. Nobody does (go to question 517)
516. **What do they use for cleaning hand?**
 1. Water only
 2. Ash and water
 3. Soap and water
 4. Clay and water
 5. Others (specify)
517. **Do all wash hands after defecation?**
 1. All do
 2. Some do
 3. Nobody does (goto Q. 519)
518. **What do they use for hand washing?**
 1. Water only
 2. Ash and water
 3. Soap and water
 4. Clay and water
 5. Others (specify)
519. **Do all adult member wash hand before preparing meal?**
 1. All do
 2. Some do
 3. Nobody does
520. **Do all adult member wash hand before feeding to young children?**
 1. All do
 2. Some do
 3. Nobody does
 4. No children
521. **Does the household cover the water vessel? (observe yourself)**
 1. Yes
 2. No
 3. Not seen
522. **Does the household cover leftover food?**
 1. Yes
 2. No
 3. Not seen
523. **Do this household have following facilities?**
- | | | |
|----------------|--------|-------|
| 1. Electricity | 1. Yes | 2. No |
| 2. Radio | 1. Yes | 2. No |
| 3. Television | 1. Yes | 2. No |
| 4. Telephone | 1. Yes | 2. No |
| 5. Cycle | 1. Yes | 2. No |

- | | | |
|------------------------|---------------|--------------|
| 6. Motorcycle | 1. Yes | 2. No |
| 7. Car/Van | 1. Yes | 2. No |
| 8. Refrigerator | 1. Yes | 2. No |

524. What do you use for cooking food?

- 1. Traditional oven**
- 2. Smokeless oven**
- 3. Gas/Kerosene**
- 4. Others (specify)**

524. How many rooms are used in this household for sleeping?

600. Salt

We want to test the salt, which was used in your house. Can we see the salt, which was used in last evening?

601. Result (Iodine content) PPM

602. Type of salt used

- 1. Ayo salt (processed)**
- 2. Tata salt (processed)**
- 3. Shakti salt**
- 4. Bhanu salt**
- 5. Unbranded**
- 6. Crushed salt**
- 7. Crystal salt (Foda)**
- 8. Tibetan salt**
- 9. Others (specify)**

Note: If the iodine content is less than 15 PPM, ask the following questions.

603. When did you buy this salt?.....months

604. Why did you use this salt?

- 1. Only available in market**
- 2. Cheaper than other**
- 3. Liking**
- 4. Others (specify)**

Appendix-3

BCHIMES**100. Individual Questionnaire Control**

101. District	102.VDC/Municipality Name
103. Ward Number	104. Cluster Number
105. Name of Village/Tole	106 Household Number
107. Date of Interview DD MM YY	
108. Name of Household Head	109. Name of the Respondent
110. Line number of the Respondent	
111. Revisit Necessary 1 = Yes 2 = No	112. Date when Revisit is to be made DD MM YY
113. Interview Complete? (if yes, fill in from Q.117 onwards) 1 = Yes 2 = No	
114. Reasons for no/ or incomplete interview 1 = Refusal 2 = No HH member at home 3 = No competent person at home 4 = Entire HH empty 5 = Others (specify)	
115 Interviewer Code (See list)	116. Editor Code (See list)
117.Supervisor Code (See list)	118.Data Entry Operator I (See list) 119.Data Entry Operator II (See list)

200 Demographic and Social Characteristics

201. How old are you?-----
(write Completed Years)
202. At what age were you first married? (write Completed Years)
203. How many sons have you given birth to? (write 00 if none and skip to Q205)
204. How many of them are alive? (write 00 if none)
205. How many daughters have you given births to? (write 00 if none and skip to Q207)
206. How many of them are alive? (write 00 if none)
207. Are you currently pregnant? Yes No (skip to instructions just before Q208.)
- 207a. How many months into pregnancy? _____ months

Interviewer note: If she has never been pregnant ask Q210. If she has given at least one birth or is currently pregnant, then ask Q208.

208. At what age did you get pregnant for the first time? (write Completed Years)
209. Do you want to have any more children (apart from current pregnancy)?
Yes No
(SKIP to Q211)
210. How many children would you like to have?
211. Have you ever attended school? Yes No
(Ask Q213)
212. What is the highest grade you have completed? (Ask Q 214 if grade 5 or above)
213. Can you read and write?
1. Read only
2. read and write
3. No (Ask Q215)
214. How often do you read a newspaper or a magazine in a week? Times
215. How often do you listen to radio in a day? Times
216. How often do you watch television in a week? Times

300. Family Planning

301. There are different ways of delaying, postponing and stopping getting pregnant, and these are called family planning methods. Are you aware of any of these methods?
Yes No
(Skip to Q323)
- 301(a) What are the methods are you aware of?
1. Pills
 2. Condom
 3. Depo-Provera (injection)
 4. IUD
 5. Norplant
 6. Female sterilisation
 7. Vasectomy
 8. Foaming tabs/foams/jelly/diaphragm
 9. Rhythm/periodic abstinence
 10. Others (specify)
302. What is the source of your knowledge? (up to 3 multiple responses)
1. Newspaper
 2. Poster/pamphlets
 3. Billboards

- 4. Radio
- 5. TV
- 6. Health workers
- 7. TBA
- 8. FCHV
- 9. NGO/F.P workers
- 10. Husband
- 11. Friends
- 12. Neighbours
- 13. Others (specify)

303. Have you ever used anything or tried in any way to delay or avoid getting pregnant?

- 1. Yes
 - 2. No
- (Skip to filter box before Q305)

304. What had you done? (up to 3 responses)

- 1. Pills
- 2. Condom
- 3. Depo-Provera (injection)
- 4. IUD
- 5. Norplant
- 6. Female sterilisation
- 7. Vasectomy
- 8. Foaming tabs/foams/jelly/diaphragm
- 9. Rhythm/periodic abstinence
- 10. Others (specify)

Interviewer tick-mark the following box

- 1. Currently pregnant and "yes" in Q 303 skip to Q313.
- 2. Currently pregnant and "No" in Q303 skip to Q319
- 3. Not currently pregnant, start with Q 305

305. Are you or your husband currently doing some thing or using any method to delay or avoid your getting pregnant? 1. Yes 2. No (Ask Q 319)

306. What method are you/your husband currently using?

- 1. Pills
- 2. Condom
- 3. Depo-Provera (injection)
- 11. IUD
- 12. Norplant
- 13. Female sterilisation
- 14. Vasectomy
- 15. Foaming tabs/foams/jelly/diaphragm
- 16. Rhythm/periodic abstinence
- 17. Others (specify)

Interviewer note: if no method is used/ever used, ask from Q 319. If sterilisation is used, ask Q307 and if other methods are used, then ask Q312.

307. Did you/your spouse sign a consent form at the time of sterilisation? 1. Yes 2. No

308. How many sons did you have at the time of sterilisation?

309. How many daughters did you have at the time of sterilisation?

310. Do you regret that you/your husband had the operation not to have any children?

- 1. Yes
 - 2. No
- (Skip to Q 312)

- 410. Were you given any TT shots during previous pregnancy?**
 1.Yes 2.No
 (Ask Q 412)
- 411. If yes how many times? Times**
- 412. Did you receive or buy Iron or Iron/Folic Acid combination tablets during this/last pregnancy?**
 1. Yes 2. No
 (Go to Q 414)
- 413. How many days did you take them during your this/last pregnancy? Days**
- 414. Did you experience any complications/problem during this/last pregnancy?**
 1.Yes 2. No
 (Skip to Q421)
- 415. If yes, what was the problem (multi-response up to three 3 answers)?**
 1.High blood pressure
 2.Oedema of face or hand
 3.Lack of blood or anaemia
 4. High fever
 5. Convulsion
 6.Vaginal bleeding
 7.Vaginal discharge
 8. Severe abdominal pain
 9. Others (specify)
- 416. Did you seek help for this problem?** 1.Yes 2. No
 (Skip to Q421)
- 417. Where did you seek help for the problem?**
 1. Sub-health post/health post
 2. Health centre
 3. Hospital
 4. Private clinic/nursing home
 5. Others (specify)
- 418. Were you satisfied with the services?** 1.Yes 2 No
 (Skip to Q421)
- 419. What was the problem with the services? (up to 3 multi responses)**
 1. No trained person present
 2. No medicine
 3. No equipment
 4. Attitude and behavior of service provider not good
 5. Had to pay for the services
 6. No prompt service
 7. Others (specify)
 (Skip to 421)
- 420. Why did you not go for ANC service? (up to 3 multi responses)**
 1. Did not feel any need
 2. Quality of service is not good
 3. Behavior/attitude of the service provider not good
 4. Too far away
 5. No time to visit health institutions
 6. Family did not allow
 7. Have to pay for the services
 8. Not aware of the need for examination
 9. D.K
 10. Others
- 421. Did you smoke (tobacco) (while you were pregnant)?** 1.Yes 2.No

422. Did you drink alcohol/beer during pregnancy? 1.Yes 2.No
(Skip to Q424)
423. How often did you drink alcohol during last pregnancy?
 1. Daily
 2. Weekly
 3. More than once in a week.
 4. Occasionally
 5. Other (specify)
424. Did you suffer from night blindness during your this/last pregnancy?
 1. Yes 2. No
425. Did your food intake decrease or increase during this/last pregnancy?
 1. Increased 2 Remained same 3 Decreased
426. What signs and symptoms during pregnancy will lead you to seek emergency care? (Mark all responses)
 1.High blood pressure
 2.Oedema of face or hand
 3.Lack of blood or anaemia
 4. High fever
 5. Convulsion
 6.Vaginal bleeding
 7.Vaginal discharge
 8. Severe abdominal pain
 9. Others (specify)

Interviewer tick-mark the following
 1. If at least one delivery, start asking from Q427.
 2. If not delivered at all skip to Q501.

Delivery care:

427. Where did you deliver your last child?
 1. Home
 2. Barn/cowshed
 3. Hospital/primary healthcare centre
 4. Health post/ sub-health post
 5. Private clinic/nursing home
 6. Others (specify)_____
428. Who assisted you in delivery?
 1. Doctor
 2. Nurse/ANM
 3. Health assistant/AHW
 4. Trained Traditional Birth Attendant
 5. Untrained Traditional Birth Attendant
 6. Village Health Worker
 7. Maternal Child Health Worker
 8. FCHV
 9. Relatives/friends
 10. No one (skip to 430)
 11. Others (specify)_____
429. When did they assist you?
 1. During labour
 2. To deliver the baby

3. To deliver the placenta
4. During delivery when problem started
5. Others (specify) _____

Interviewer tick-mark below:

1. If delivered at health institution skip to Q434
2. Otherwise skip to Q430

430. If not delivered at health institutions was HDK used (show the Home Delivery Kit to the respondent) in delivery?

1 Yes	2.No
	(Skip to Q432)

431. Where did you get it?

1. VHW
2. FCHV
3. MCHW
4. Trained TBA
5. Untrained TBA
6. Pharmacy
7. Other village shop
8. Depot holder
9. Other (specify)

432. What was used to cut the umbilical cord?

1. New blade
2. Old blade boiled (sterilised)
3. Old blade not boiled
4. Other instruments boiled (sterilised)
5. Other instruments not boiled (not sterilised)

433. What was used to treat the cord?

1. Nothing
2. Antiseptic
3. Ash
4. Oil/ghee
5. Cowdung
6. Herbal
7. Others (specify)

434. How big was the child at the time of delivery?

1. Very Large
2. Large
3. Average
4. Small
5. Very Small

435. Did you receive postpartum check-up within 24 hours of delivery?

- | | |
|---------------|--------------|
| 1. Yes | 2. No |
|---------------|--------------|

436. Around the time of birth did you have any of the following complications/problems?

- | | | |
|--|---------------|--------------|
| a. Long/prolonged labour | 1.Yes | 2.No |
| b. Life-threatening excessive bleeding | 1. Yes | 2.No |
| c. A high fever with bad smelling vaginal discharge | 1.Yes | 2. No |
| d. Convulsion? | 1.Yes | 2. No |

10. Community meetings

11. Friends/relatives

12. Workplace

13. Others (specify)

505. Is there anything a person can do to avoid getting AIDS or the virus that causes AIDS?

1. Yes

2. No

(Ask Q507)

506. What can a person do? Any other ways? (probe and record all mentioned)

1. Safe sex

2. Abstain from sex

3. Use condoms

4. Have only one sex partner

5. Avoid sex with prostitutes

6. Avoid sex with homosexuals

7. Avoid blood transfusions

8. Avoid injections

9. Avoid kissing

10. Avoid mosquito bites

11. Seek protection from traditional healers

12. Other (specify)

507. Is it possible for a healthy-looking person to have the AIDS virus?

1. Yes

2. No

3. Ok

508. Do you think your chances of getting AIDS are small, moderate, great or that you have no risk at all?

1. Small

2. Moderate

3. Great (high)

4. No risk at all

5. Have AIDS

6. Don't know

7. Other (specify)

509. Do you know the place where you could get (blood) tested for HIV?

1. Yes

2. No

(Skip to 600)

510. You do not need to tell me the results, have you ever been tested for HIV?

1. Yes

2. No

Interviewer tick-mark one of the following

1. Respondent has no children under 5, stop interviewing.

2. Respondent has at least one child under 5, continue section 601

600. Breastfeeding

601. Did you ever breastfeed your last child?

1. Yes

2. No

(Go to Section 700)

602. How long after birth did you put child to breast? (Hours)

(If less than one hour write 00)

603. Did you feed colostrum to the child?

1. Yes

2. No

604. For how many months have you been breastfeeding this child? (Months)(Write 88 for still breastfeeding, If stopped breastfeeding skip to 606)

605. If still breastfeeding how long do you intend to breastfeed him/her? Months

**606. At what age did you give water to drink for your child? Months
(Write 88 if the child was not given water)**

607. Was the child fed anything from the feeding bottle yesterday or last night?

1. Yes

2. No

**608. When (at what age) did you start giving other food to the child? (Age) Months
write 88 if no food given yet**

609. If not currently breastfeeding, why did you stop breastfeeding the child?

1. Mother ill/weak

2. Child ill/weak

3. Nipple/breast problem

4. Not enough milk

5. Mother working

6. Child refused

7. Weaning age/age to stop

8. Became pregnant

9. Started using contraception

10. Others (specify) _____

700. CARE OF ACUTE RESPIRATORY INFECTIONS (ARI) (children upto 5 yrs. of age)

Questions	1. Line No.____ Name:____ Sex : ____ Age : __	1. Line No.____ Name:____ Sex : ____ Age : __	1. Line No. ____ Name:____ Sex : _ Age : _
701. Has (name) suffered from cough and cold during last two weeks?	1 = Yes, 2 = No if No go to 705	1 = Yes, 2 = No if No go to 705	1 = Yes, 2 = No if No go to 705
702. What signs and symptoms did you notice when the child was sick with cough and cold? (Multi-response up to 3)			
Is coughing 01	01	01	01
Has a blocked/running nose 02	02	02	02
Has fever 03	03	03	03
Is breathing fast 04	04	04	04
Has difficulty breathing 05	05	05	05
Has chest in-drawing 06	06	06	06
Has problems eating/drinking 07	07	07	07
Other answers (specify) 08	08	08	08
703. During (Name's) ARI what did you offer him/her to drink?			
Breast Milk 01	01	01	01
Cereal-based gruel or soup 02	02	02	02
Yogurt 03	03	03	03
Fruit juice 04	04	04	04
Cow/buffalo/canned milk 05	05	05	05
Water during feeding time 06	06	06	06
Plain water 07	07	07	07
Any other fluids 08	08	08	08
Nothing 09	09	09	09
704. Where did you seek for (name's) treatment?			
Nowhere and no treatment 01	01	01	01
Nowhere but home treatment 02	02	02	02
Sub-health post/health post 03	03	03	03
PHCC/hospital 04	04	04	04
Ayurvedic centre/hospital 05	05	05	05
Village Health Worker /MCHW 06	06	06	06
FCHV 07	07	07	07
Private clinic/nursing home 08	08	08	08
Medical shop/pharmacy 09	09	09	09
Faith healers 10	10	10	10
Others (specify)- 11	11	11	11
705. How many times has this child suffered from ARI during last year?			

800. DIARRHOEA (children upto 5 yrs. of age)

Questions	1. Line No.____ Name:_____ Sex : ____ Age : ____	1. Line No.____ Name:_____ Sex : ____ Age : ____	1. Line No. ____ Name:_____ Sex : _ Age : ____
801. Has (name) had diarrhoea in last two weeks? 1 = Yes, 2 = No	if No to question 808	if No to question 808	if No to question 808
802. Was there any blood in (name's) stool during his/her diarrhoea?	1=Yes 2=No	1 = Yes 2 = No	1 = Yes 2 = No
803. During (name's) diarrhoea, what did you offer him/her to drink? Breastmilk 01 Cereal-based gruel or soup 02 Yogurt 03 Fruit juice 04 Nun-Chhini-Pani 05 Cow/buffalo/canned milk 06 Jeevan Jal/Nav Jeevan/ORS Packet 07 Water during feeding time 08 Plain water 09 Any other fluids 10 Nothing 11	01 02 03 04 05 06 07 08 09 10 11	01 02 03 04 05 06 07 08 09 10 11	01 02 03 04 05 06 07 08 09 10 11
804. During diarrhoea was the child offered none, less same or more amount of liquid than usual? 1=None 2= Less 3=Same 4=More	1 2 3 4	1 2 3 4	1 2 3 4
805. During diarrhoea did s/he eat/fed none, less same or more than usual? 1 = None 2 = Less 3 = Same 4 = More	1 2 3 4	1 2 3 4	1 2 3 4
806. Where did you seek for (name's) treatment? Nowhere and no treatment 01 Nowhere but home treatment 02 Sub-health post/health post 03 PHCC/hospital 04 Ayurvedic centre/hospital 05 Village Health Worker/MCHW 06 Female Community H. Volunteer 07 Private clinic/nursing home 08 Medical shop/pharmacy 09 Faith healers 10 Others (specify) 11	01 02 03 04 05 06 07 08 09 10 11	01 02 03 04 05 06 07 08 09 10 11	01 02 03 04 05 06 07 08 09 10 11

800. DIARRHOEA (children upto 5 yrs. of age)

Questions	1. Line No.____ Name:_____ Sex : __ Age : __	1. Line No.____ Name:_____ Sex : __ Age : __	1. Line No. ____ Name:_____ Sex : _ Age : __
<p>807. How much cost did you incur in (name's) treatment . (If nothing was incurred write 0000 in total cost. If only total cost is available mention that in appropriate column).</p> <p>1. Travel cost Rs._____</p> <p>2. Check-up fee Rs._____</p> <p>3. Medicine Rs._____</p> <p>4. Admission to health institution Rs._____</p> <p>5. Other fees and expenses Rs._____</p> <p>6. Faith healer cost/charges Rs._____</p> <p>7. Total cost Rs._____</p>	<p>1. _____</p> <p>2. _____</p> <p>3. _____</p> <p>4. _____</p> <p>5. _____</p> <p>6. _____</p> <p>7. _____</p>	<p>1. _____</p> <p>2. _____</p> <p>3. _____</p> <p>4. _____</p> <p>5. _____</p> <p>6. _____</p> <p>7. _____</p>	<p>1. _____</p> <p>2. _____</p> <p>3. _____</p> <p>4. _____</p> <p>5. _____</p> <p>6. _____</p> <p>7. _____</p>
<p>808. How many times has this child suffered from diarrhoea during last year?</p>			

809. When the child is sick what symptoms will lead you to seek cure at health institutions or a medical personnel? (Record all answers)

1. When the child cannot eat or drink
2. Chest in-drawing
3. When the fever is high
4. When the child is lethargic or unconscious
5. Difficulty in breathing or rapid breathing
6. When there is blood in the stool
7. Vomits everything s/he eats or drinks
8. When the frequency of diarrhoea is high
9. When the child is excessively thirsty
10. Others (specify)

900. Vitamin A ((children aged 6 months to 5 yrs. of age)

901. Are you aware of the National Vitamin 'A' programme?

1 Yes 2 No.

902. Are any other members of your family aware of this programme?

1 Yes 2 No 3 DK.

Questions	Line Number..... Name..... Sex: Age:	Line Number..... Name..... Sex: Age:	Line Number..... Name..... Sex: Age:
<p>903. Did s/he receive Vitamin A capsule during last Oct/Nov – April/May? Yes = 1 No = 2.</p>	<p>Yes = 1, No = 2</p>	<p>Yes = 1, No = 2</p>	<p>Yes = 1, No = 2</p>
<p>903. Can you tell me the activities done during the distribution of vitamin A?(Record all that applies)</p> <p>1.Provided the capsule</p> <p>2.Cut the capsule with scissors or other tools</p> <p>3.Written child's name</p> <p>4.Squeezed capsule in the mouth</p> <p>5.Other (specify)</p>	<p>Yes = 1, No = 2</p>	<p>Yes = 1, No = 2</p>	<p>Yes = 1, No = 2</p>

1000. Immunisation

Interviewer: The questions of this module should be asked for all children in the household age 12-23 months with their mothers or caretakers. If an immunisation card is available copy the dates for each type of immunisation below. If complete date for vaccination is not recorded in the card then : I) write 98 for any of the three(day/month/year not recorded, and ii) write 44 if none is recorded. If the card is not available use probing questions 1011-1017 to find out whether the child received that vaccination , and if so, how many doses. Record mother's responses for each vaccine dose in the space provided.

Questions	1. Line Number.....		1. Line Number.....	
	2. Name.....		2. Name.....	
	3. Date of birth		3. Date of birth	
	Y=1 N=2	Date of Immunisation (Day) (Month) (Year)	Y=1 N=2	Date of Immunisation (Day) (Month) (Year)
1001. Is there a vaccination card fo (name)	Y = 1, N= 2		Y = 1, N= 2r	
1002. BCG	Y = 1, N= 2		Y = 1, N= 2	
1003. DPT1	Y = 1, N= 2		Y = 1, N= 2	
1004. DPT2	Y = 1, N= 2		Y = 1, N= 2	
1005. DPT3	Y = 1, N= 2		Y = 1, N= 2	
1006. OPV1	Y = 1, N= 2		Y = 1, N= 2	
1007. OPV2	Y = 1, N= 2		Y = 1, N= 2	
1008. OPV3	Y = 1, N= 2		Y = 1, N= 2	
1009. MEASLES	Y = 1, N= 2		Y = 1, N= 2	
1010. Has (name) received any vaccination whose dates are not recorded in the card?	Y = 1, N= 2		Y = 1, N= 2	
Probing questions to use when no vaccination card is available				
1011. Has (name) received BCG vaccination against tuberculosis, that is, an injection in the shoulder that caused a scar?	Y = 1, N= 2		Y = 1, N= 2	
1012. Has (name) ever been given "vaccination injections" that is an injection in the thigh or buttocks to prevent him/her from getting tetanus, whooping cough, and diphtheria? (Note DPT is given at the time of polio drops.)	Y = 1, N= 2		Y = 1, N= 2	
1013. How many times?				
1014. Has (name) been given any "polio drops" to protect him/her from getting polio diseases?	Y = 1, N= 2		Y = 1, N= 2	
1015. How many times?				
1016. Has s/he ever been given polio drops in last National Immunisation Day?	Y = 1, N= 2		Y = 1, N= 2	
1017. Has (name) ever been given "vaccination injections," that is, a shot in the arm after nine months of age to prevent him/her from getting measles?	Y = 1, N= 2		Y = 1, N= 2	

Appendix-4 Sample Selected Areas in BCHIMES 2000

Development Region	Ecological Zones	District	Selected VDC	Nagarpalika		Total Clusters			
				VDC	NP	VDC	NP	Total	
EDR	Mountain	Taplejung	Limbudin-1, Surumkhim-2			2	-	2	
		SoluKhumbu	Garma- 1; Salleri- 7			2	-	2	
	Hill	Sankhuwasabha	Hatiya-4, Siddhakali-6			2	-	2	
		Panchthar	Aargha-2, Nangeen-3			2	-	2	
		Terhathum	Hawaku-9			1	-	1	
		Ilam	Banjho-1, Iaxmipur-5, Santipur-6			3	-	3	
		Dhankuta	Khuwphok-1			1	-	1	
		Udayapur	Aaptar-1, Mainamaini-9	Trijuga-7	2	1	3		
	CDR	Mountain	Khotang	Bijayakharka- 7, Kubhende-5			2	-	2
			Bhojpur	Bhojpur -2; Khawa-1			2	-	2
Terai		Okhaldhunga	Andheri-3, Pokhare-2			2	-	2	
		Jhapa	Chakchaki-3, Jyamirgadhi- 9, Satasidham-6			3	-	3	
		Morang	Bairban-2, Itahara- 1, Pathari-5, Urlabari-9			4	1	5	
		Siraha	Asanpur-7, Hanuman Nagar-8, Radhapur-6	Biratnagar-4	3	-	3		
		Saptari	Malekpur -2, Didhawa-7		2	-	2		
		Sunsari	Hansposha-4, Simariya-8	Dharan-19	2	-	2		
		Dolakha	Dada Kharka-5, Khupa changu- 4, Susmachhamabati- 8	Bhimeshwor-1	3	1	4		
		Sindhupalchok	Bhotang- 1; Golchi- 2; Lisankhu- 8; Sanasiruwari- 4; Thulo Siruwari- 4;		5	-	5		
Hill	Sindhuli	Kayaneshor-1; Tribhuwan Ambote- 5			2	-	2		
	Ramechhap	Khimti- 5; Manthli- 7, Tilpung-2			3	-	3		
	Lalitpur	Godawari- 1; Thalba- 4	Lalitpur N.P.- 6	2	1	3			
	Kathmandu	Satungali-8, Lapsipedi-3, Dhapasi-9	Kathmandu- 6,10,13, 16,23,31 & Kirtipur- 11	3	7	10			
	Bhaktapur	Nakhel-9	Bhaktapur-3, Madhyapur Thimi-15	1	2	3			
	Dhading	Dhola-7, Sunaula Bazar-5		2	-	2			
		Churemai- 6, Makwanpur gadhi- 9, Tistung - 4		3	-	3			
		Bageswori- 7, Kakani- 1, Shikhar-Beshi- 3		3	-	3			
		Hokse Bazar- 2; Nala (Ugrachandi) - 6		2	1	3			
	Terai	Chitwan	Gardi- 6; Shivanagar- 9	Banepa-5	2	-	2		
Bara		Jitpur(Bhawanipur)- 4, Tetariya- 2		2	-	2			
Parsa		Nichuta-5		1	-	1			
Rautahat		Bairiya-2; Laxmipur Belbichhwa-2, Sitalpur Baiganiya- 9		3	-	3			
Dhanusha		Deupura Rupatha - 4, Machijitkaiya-8, Yagya Bhumi-6	Janakpur Dham -8	3	1	4			
Mahottari		Khairbani-8; Simardahi-6		2	-	2			
Sarlahi	Dhungri Khola-9; Madhuban- 5		2	-	2				

Development Region	Ecological Zones	District	Selected VDC		Nagarपालिका	Total Clusters			
			VDC	VDC		VDC	NP	Total	
WDR	Mountain Hill	Manang	Tanki Manang-(3+4)			1	-	1	
		Kaski	Bharat Pokhari- 3; Thumako Dada-2		Pokhara-3	2	1	3	
		Tanahu	Basantapur - 5; Ramjakot- 7			2	-	2	
		Lamjung	Bichour-7			1	-	1	
		Parbat	Deurali- 1, Katuwa Chaupari- 9			2	-	2	
		Arghakhanchhi	Khan -5			1	-	1	
		Palpa	Chhahara-4, Tahun-4			2	-	2	
		Gulmi	Hasara-2			1	-	1	
		Syangja	Kewarebhanjhyang-1			1	-	1	
		Baglung	Bongadovan-1, Tangram-3			2	-	2	
		Gorkha	-		Prithvi Narayan-3	-	1	1	
		Terai	Navalparasi	Gaidakot - 1, Badhara Dubuliya-6, Mainaghat-4, Pithauli-7, Somani-1			5	-	5
		Rupandehi		Babhani-4, Devdaha-7, Kervani-1, Parroha-1 Shankar Nagar-8		Butwal-5, Siddharthanagar-7	5	2	7
		MWDR	Mountain Hill	Kapilvastu	Banganga-4, Gugauli-4, Lalpur-3, Ramghat-1			4	-
Jumla	Haku-9, Taliun-4					2	-	2	
Kailkot	Kumalgaun-3, Phukot-9					2	-	2	
Salyan	Chhayachhetra-4, Kubhinde Daha-6					2	-	2	
Pyuthan	Hansa Pur-5, Sari-5					2	-	2	
Rolpa	Gumchel-3, Pang-1					2	-	2	
Rukum	Musikot-8, Bijeshori-5					2	-	2	
Surkhet	Bajedichaur-5, Khanikhola-2, Sahare-4					3	-	3	
Dailekh	Gamaudi-4, Piliadi-5				Narayanpur-1	2	1	3	
Jajarkot	Jagatipur-1, Thalarai-9					2	-	2	
Banka	Bhawanipur-3, Saigaun-1, Kanchanpur-8, Narayanipur-5					4	-	4	
Dang	Bela-5, Gobardiya-1, Hakuli-2, Narayanpur-6, Rampur-8, Urahari-6				Tulsipur-5	6	1	7	
Bardiya	Baniyabhar-9, Gala-4, Motipur-6, Sanoshree-1				Gulariya-3	4	1	5	
Darchula	Huti-1, Surmali-2, Boharagaon-8					3	-	3	
FWDR	Mountain Hill	Bajhang	Sunkuda-3, Bhatekhola-5, Kotadewal-1, Dantola-8, Koiralakot-6, Pipalkot-2			6	-	6	
		Bajura	Bichhiya- 3, Kailasmandu-1, Sapata- 5			3	-	3	
		Achham	Baradadevi-1, darna-6, Jupu-7, Marku-5, Siddheshwor-1			5	-	5	
		Doti	Banjha Kakani- 4, Gadsara-5, Kadachaur-1, Saraswoti Nagar- 1			4	-	4	
		Dadeldhura	Ashigram- 8, kailapmandu- 2		Amargadhi- 10	2	1	3	
		Baitadi	Bhumeshwor- 8, Giregada- 5, Maharudra- 8, Sarmali- 5			4	-	4	

Development Region	Ecological Zones	District	Selected VDC	Nagarपालिका	Total Clusters	
					VDC	NP
4						
	Terai	Kailali	Bhajani- 4, Godawari- 3, Khaivala- 6, Sadepani- 3, Thapapur- 9, Dhansingpur-8, Manuwa-6, Pathariya-9	Tikapur-9, Dhangadhi -9	8	2
		Kanchanpur	Chandani- 7, Jhalari- 2, Parasan- 1, Rampur Bilaspur- 9, Tribhuvan Basti- 3	Mahendra Nagar- 10	5	1
Total	Mountain	11				32
	Hills	38				96
	Terai	20				80
	Nepal	69			181	27
						208

Appendix-5
Central Staff Involved in BCHIMES Activities

S.N	Name	Status	Office	Assigned work/ Assigned sample point
1	Ms. Savitri Singh	Deputy Director General	CBS	Project Director
2	Mr. Krishna Prasad Shrestha	Deputy Director	CBS	Project Co-ordinator
3	Mr. Suresh Basnyat	Statistical Officer	CBS	Central Supervisor
4	Mr. Nebin Lal Shrestha	Statistical Officer	CBS	Central Supervisor
5	Mr. Kedar Basnet	Economist	CBS	Central Supervisor
6	Mr. Sarad Raj Nepal	Statistical Officer	CBS	Central Supervisor
7	Mr. Mahesh Kumar Chalise	Statistical Officer	CBS	Central Supervisor
8	Mr. Damodar Fuyal	Account Officer	CBS	Account Supervisor
9	Mr. Hari Prasad Luitel	Non Gaz. Ist Class	CBS	Account Assistant
10	Mr. Pralad Khadka	Non Gaz. Ist Class	CBS	Computer & Office Assistant
11	Mr. Sitaram Karki	Non Gaz. 2nd Class	CBS	Office Assistant

Appendix 5.1: Field Staff Involved in BCHIMES Activities

Team No.	Name	Status
1	Bodh Prasad Acharya Kedar Prasad Neupane Ganga Gautam Radhika Subedi Renuka Khanal	Team Leader Editor Enumerator Enumerator Enumerator
2	Khamb Sher Rai Buddhi Prasad Paudel Jayakala Rai Kopila Basnet Januka Bhattarai	Team Leader Editor Enumerator Enumerator Enumerator
3	Keshar Bahadur Karki Anjani Kumar Pokharel Santa Ghimire Sulabha Paudel Kamla Adhikari	Team Leader Editor Enumerator Enumerator Enumerator
4	Suresh Mohan Bhandari Gajendra Lal Shrestha Barsha Basnet Srijana Adhikari Pratima Adhikari	Team Leader Editor Enumerator Enumerator Enumerator
5	Rita Shrestha Kebal Singh Bista Aruna Pokheral Uma Shrestha Krishna Kumari Rayamajhi Bhawani Tandukar	Team Leader Editor Enumerator Enumerator Enumerator Enumerator
6	Kamala Rupakheti Mahesh Dhungana Sadhana K.C. Yamuna Shrestha Kalkita Shrestha	Team Leader Editor Enumerator Enumerator Enumerator

TeamNo.	Name	Status
7	Kiran Raut Milan Karki Januka Bhattarai Susmita Dulal Yashoda Dangol	Team Leader Editor Enumerator Enumerator Enumerator
8	Shiva Hari Dahal Basanta Kumar Chaudhari Sita Lamsal Rama Dhungana Dipika Dahal	Team Leader Editor Enumerator Enumerator Enumerator
9	Diwakar Sapkota Ramji Gautam Yamuna Gurung Kalpana Kharel Dipa Sharma	Team Leader Editor Enumerator Enumerator Enumerator
10	Bhakti Ram Gautam Ram Bahadur Kumal Tika kumari B.C. Krishna Kumari Bansi Bandana Yogi	Team Leader Editor Enumerator Enumerator Enumerator
11	Bishnu Prasad Marashini Dilliram Sharma Gopal Paudel Sarmila Acharya Laxmi Sigdel Saraswoti Sharma	Team Leader Editor Editor Enumerator Enumerator Enumerator
12	Byasha Muni Chaudhari Resham Bahadur Budha Meena Kumari Budha Sita Sharma Sita Adhikari	Team Leader Editor Enumerator Enumerator Enumerator
13	Lok Bahadur Khatri Pashupati Lal Das Goma G.C. Rupa Chaudhari Jamuna Shaha	Team Leader Editor Enumerator Enumerator Enumerator
14	Binod Acharya Tek Bahadur Bohara Dhana Magar Sita Sharma Lalita Gautam	Team Leader Editor Enumerator Enumerator Enumerator

Appendix 5.2: Persons Involved in Data Entry

- Jana Magar
- Narayan Khakurel
- Pushpa Khanal
- Gyanendra Mahat
- Rajendra Silwal
- Sita Ram Karki
- Shanti Tuladhar
- Pushpa Poudyal
- Birendra Shrestha
- Devendra Basnet
- Dipendra Mahat
- Ganesh Khanal
- Abiskar Shrestha
- Surya Bikram Shah
- Pralad Khadka
- Harish Chandra Shrestha

Glossary of Abbreviation

ADDCN	Association of District Development Committee of Nepal
ANC	Antenatal Care
ANM	Auxiliary Nurse Midwife
AHW	Auxiliary Health Worker
ARI	Acute Respiratory Infections
BCG	Bacillus Calmette Guerin (tuberculosis vaccine)
BCHIMES	Between Census Household Information, Monitoring and Evaluation System
BF	Breastfeeding
CBS	Central Bureau of Statistics (Nepal)
DPT	Diphtheria/ Pertussis (Whooping Cough) Tetanus Combination Vaccine
E+ C+ W	(Eastern + Central + Western) Development Region
ECD	Early Childhood Development
EPI	Expanded Programme on Immunization
FCHV	Female Community Health Volunteer
GER	Gross Enrollment Ratio
HC	Health Center
HDK	Home Delivery Kit
HIV/AIDS	Human Immuno deficiency Virus/Acquired Immuno Deficiency Syndrome
HMG/N	His Majesty Government of Nepal
HP	Health Post
IDD	Iodine Deficiency Disorders
IEC	Information Education and Communication
MCH	Maternal and Child Health
MCHW	Maternal Child Health Worker
MOES	Ministry of Education and Sports
MOH	Ministry of Health
MOPE	Ministry of Population and Environment
MW+ FW	(Midwestern + Far western) Development Region
NCASC	National Centre for AIDS and STD Control
NER	Net Enrollment Ratio
NFHS	Nepal Fertility and Health Survey
NHEICC	National Health Education Information and Communication Center
NID	National Immunization Day
NMIS	Nepal Multiple Indicator Surveillance
NMSS	Nepal Micro Nutrient Status Survey
NPCS	National Planning Commission Secretariat
NVAP	National Vitamin A Programme
OPV	Oral Polio Vaccine
ORS	Oral Rehydration Solution
PNC	Postnatal Care
PPM	Parts per million
PPS	Probability Proportional to Size
PHCC	Primary Health Care Centre
SHP	Sub Health Post
STD	Sexually transmitted disease
TBA	Traditional Birth Attendants
TT	Tetanus Toxoid - Vaccine
VDC	Village Development Committee
VHW	Village Health Worker

GENERAL NOTES

- 1. Figures in the text and tables may not tally with one another as the actual figures and rounded off figures are synonymously used.**
- 2. Figures in some tables may not tally with other tables due to differences in number of missing cases, sources not stated and the like.**
- 3. Some tables have shown the components (%) attributed to the total percentage instead of showing its own independent.**
- 4. Analysis of data by sub regions may slightly differ from chapter to chapter since Kathmandu valley has either been treated as one of the sub regions or as a separate region irrespective of other sub regions.**

