

**UTILIZATION OF CONDOM IN THE CONTEXT
OF HIV / AIDS IN NEPAL**

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MASTER OF PHILOSOPHY

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DECLARATION

I do hereby declare that the dissertation entitled “**Utilization of condom in the context of HIV / AIDS in Nepal**” submitted by me is a bonafide work and that it has not been submitted to any other university for the award of any other degree.

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It is hereby recommended that the dissertation may be placed before the examiners for evaluation.

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ACRONYMS

ADRA = Adventist Development and Relief
AIDS= Acquired Immune Deficiency Syndrome
CBS = Central Bureau of Statistics, Nepal
CDR = Central Development Region
EDR = Eastern Development Region
FPAN = Family Planning Association of Nepal
FWDR = Far Western Development Region
HHS = Households
HIV = Human Immune Virus
INGOs = International Non Governmental Organizations
KAP = Knowledge, Attitude and Practice Survey
MOPE = Ministry of Population and Environment, Nepal
MOLD = Ministry of Local Development, Nepal
MOH = Ministry of Health
MWDR = Mid Western Development Region
NCPS = Nepal Contraceptive Prevalence Survey
NDHS = Nepal Demographic Health Survey
NFS = Nepal Fertility Survey
NFHS = Nepal Family Health Survey
NFFHS = Nepal Fertility, Family planning and Health Survey
NGOs = Non Governmental Organizations
PSU = Primary Sampling unit
STD = Sexually Transmitted Diseases
STI = Sexually Transmitted Infections
VDC = Village Development Committee
WDR = Western Development Region
WHO = World Health Organization

Chapter: I

INTRODUCTION

1.1 Background

1.1.1 Historical Perspective on condom use

“Condom” is a mechanical barrier that has been used for centuries to protect against pregnancy and infection” (Hatcher, RA. 1978: 85-88)

There is a long history of condom use in the world. Barriers have been used to cover the penis to protect against disease since 1350 BC and for pregnancy prevention since at least 16th Century AD (Lewis, 1998). Before the development of modern latex condom, penis sheaths were used centuries ago for protection against, for example, evil spirit and insect bites. During the Renaissance period, Syphilis epidemic was thriving in Europe and people used barriers to protect from syphilis (Brown, 1998). Condoms were also used by the members of upper class people to prevent pregnancy (Guerrand, 1979). Latex condoms have been available since 1930 to prevent both pregnancy and sexually transmitted disease. The first significant modification to condom manufacturing occurred in 1930 and the production of condom was regularly started since 1930. When Mackintosh first manufactured condoms on an industrial scale in England they were then also exported to Western Europe and America (Brown, 1998). Since that year, over 300 million condoms were sold annually in United States (Lewis, 1998). When a variety of contraception became available during 1960 to 1970, use of condom declined. However with the emergence of HIV/AIDS during 80's in the world, the demand of latex condom increased sharply. Condom became very popular among sexually active people (Hessol, 1989). During 90's, the distribution of condom increased by hundred folds in many developing countries (UNAIDS, 2000b). Now condoms are available in every part of the world and the utilization of condom has been increasing. The usage rate of condom varies in the world even though in a country there is differential use of condom due to numerous factors.

1.1.2 Global context of condom use

The use of modern condoms was dramatically accelerated especially after the emergence of HIV/AIDS in the world. The condom market expanded worldwide speedily. It has been used as the best protective method of HIV/AIDS and STDs and preventive method for pregnancy. In fact, HIV/AIDS ushered in a new era of condom promotion at global level. Current numbers of condom distributed, however is enough to cover only a small part of sexual encounter (Hearst, 2004).

Research conducted in 1990 in the different parts of the world showed that about 60.0 percent of married condom users lived in developed countries. Japan alone accounted for 20.0 percent (46.0 percent of all couples and 78.0 percent of all family planning users relied on condoms), Scandinavian countries more than 20.0 percent and US only 11.2 percent. Only 3.8 percent of married couples of reproductive age in developing countries used condoms for family planning but in sub-Saharan Africa, the overall use of contraceptive was low and the share of condom was less than 1.0 percent at global level (Population Reports, 1999). On the other hand, it was also found that around 44.0 million (9.2 percent) married couples used condom for family planning at global level. The share of condoms used by married couples is low due to available alternative choices of contraception (UN, 1998).

Data from DHS and US Census Office showed that the level of condom use among the unmarried people varied at the global level. In 1998 it was found that 2.0 to 16.8 percent sexually active unmarried women and 7.0 to 50.0 percent sexually active men reported using condom during sex. However, the data on condom use with multiple partners showed that a large number of men were using it. Ugandan DHS 1996, showed that 25.0 percent of men and 13.0 percent of women aged 15-49 had non- regular partners and almost 70.0 percent reported that they had used condoms during sex (Population Reports, 1999).

Results of Demographic Health Surveys, in nineties from different parts of the world showed that 6.0 to 9.0 billion condoms were used annually in the world. It was also estimated that 24.0 billion condoms should be used up annually by men ages 15-59 years to protect fully against sexually transmitted disease. Out of 24.0 billion condoms, 3.0 billion (12.0 percent of total) condoms should be used to prevent the pregnancy within marriage, 17.0 billion condoms (71.0 percent of total) should be used among sexually active but unmarried persons, which shows the substantial

volume of unmarried persons involving in sexual activities, and 3.8 billion (16.0 percent of total) condoms should be used among married person engaged in extramarital sexual activities (Population Reports, 1999). This estimate was based on the Demographic Health Surveys conducted during 1990 to 1997 in many countries of the world.

Powath (2002) illustrates that only 9.2 billion condoms were used up during 2000 to 2001 at global level for preventing pregnancy and protecting infection. This estimate showed that in Japan 753.6 million condoms were used, China 1243.7, South Asia 1132.7 and, Korea 147.3, Indo-China 86.3, South East Asia 332.2, Middle East and West Asia 126.3 million condoms. Likewise, in West Africa 280.2 million, North Africa 207.9, Southern Africa 168.2, West Europe 1270.8, USA 907.1, other North America 241.4, South America 621.2, other Caribbean 27.4 and Australia and New Zealand 53.8 condoms were used up. This estimate was based on the distribution of condom in specific countries and regions of the world. On the other hand, an estimate of Future Group International on condom use at global level shows that out of total contraceptives, the share of condom was only 5.0 percent in 1980 but this proportion decreased to 4.0 percent in 1990 and the long term projection shows that the share of condom would be 10.0 percent by 2015 in the world (FGI, 1999). But the new projection of United Nations (1996) shows that the prevalence rate of condom among the total contraceptive prevalence would be 7.0 percent by 2015 (Bongaarts, 2002). Having discussed the condom use at the global level, we present the condom use in Nepal. The profile of the country is given first.

1.1.3 Country Profile

Nepal is landlocked Himalayan country situated between the world's most populous countries India and China. The total land area is 147.2 thousand square kilometers having three parallel ecological regions on the basis of altitude, viz., Mountain, Hill and Terai. The shape of the country is almost rectangular extending from East to West. The country is divided into five regions for the administrative purpose namely: Eastern (EDR), Central (CDR), Western (WDR), Mid Western (MWDR) and Far Western Development (FWDR) regions. The country is further divided into 14 zones and 75 districts. Districts are again divided into village development committee (VDC) and urban Municipalities. Again each VDC is

composed of nine wards but the numbers of wards in each municipality depends upon the volume of population. Recent statistics shows that there are 58 municipalities and 3914 VDCs (CBS 2002).

Mountain is the Himalayan part of the country, which covers the land area of 51.9 thousand square kilometers. According to 2001 census only 7.0 percent (1.7 million) of total population live in this region and the density of this region is 33.0 persons per square kilometer. On the other hand, the middle part is Hill covers an area of 61.4 thousand square kilometers comprising 44.0 per cent (10.3 million) of total population with population density of 167.0 persons per square kilometers. Terai is a plain region of Nepal, which is attached to Bihar and Uttar Pradesh of India, covering 34.1 thousand square kilometer area. A large proportion of populations reside in Terai region, consisting of 44.0 per cent (11.2 million) of total population with population density of 330 persons per square kilometer (CBS, 2001). A wide disparity is observed in climate by regions. Mountain region has very cold weather, Hill has moderate and Terai is rather hot.

According to the latest population census 2001, Nepal's population was 23.15 million as of June 2001. The annual growth rate is 2.25 per cent per annum. The sex ratio of population is 99.8 comprising 49.9 percent of males and 50.1 percent of females.

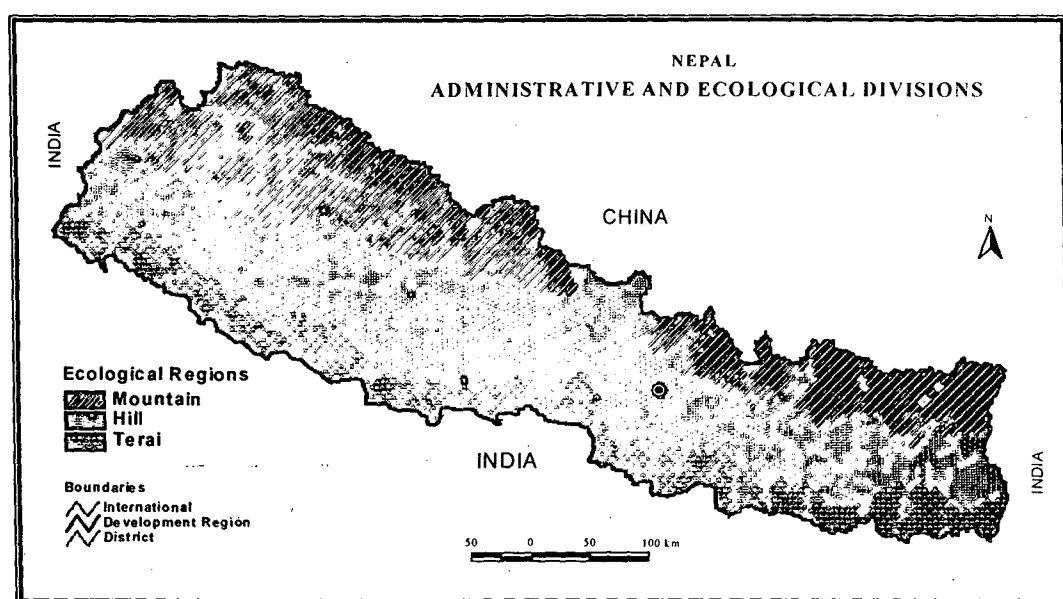


Figure 1.1

Nepal is a multiethnic and multilingual country. According to 2001 census, there are 103 castes / ethnic groups including unidentified groups. Among these groups, Chhetri has the highest share (16.0 percent), followed by Brahman (13.0 percent), Magar (7.0 percent), Tharu and Rajbanshi (7.0 percent), Newar (6.0 percent), Tamang (6.0 percent) and others in small proportion (CBS, 2001). Around 92 different languages are spoken in Nepal and Nepali is the national language and 49.0 percent of people speak Nepali followed by Maithli, which is spoken 12.0 percent. All these languages originated from two major groups: the Indo- Aryans and Tibetan- Burmese (CBS, 2001).

Nepal is a Hindu Kingdom with legal provision of no discrimination against other religions. The population of Hindu in the country is (80.8 percent) followed by Buddhist (11.2 percent) and Muslim (3.7 percent) and the share of other religions is very small as compared to these religions (CBS, 2001).

Table 1.1 gives the information on population in different censuses. The growth rate is negative in the two censuses of 1920 and 1930 due to influenza epidemic. From 1941, the population of Nepal has been growing with high growth rate. The growth rate between 1971 and 1981 is the highest (2.7 percent) in the history of Nepalese census. Sex ratio is favorable for females from 1952/54 censuses except

in 1971 and 1981. The fluctuation in the data mostly depends up on the quality of data collection in different censuses (Acharay, 1996). The growth rate has been found to increase explosively after 1971, which might be due to the better medical facilities, control over the communicable and non-communicable diseases in the country and better services of transportation (MOH, 2003). The growth rate is still high and if this continues then the population would be double in nearly 31 years according to census 2001.

Age is also an important demographic characteristic of population. According to 2001, 39.4 percent of population is under age 15 years, which reflects the younger nature of the Nepalese population. The female population in reproductive age covers 49.3 percent of total female population. Adolescent's population at age 15-19 years is 10.5 per cent of total population and the percent of male and female adolescent is 10.4 percent and 10.6 percent. Table 1.2 gives the distribution of population by five-year age group of Nepal in 2001.

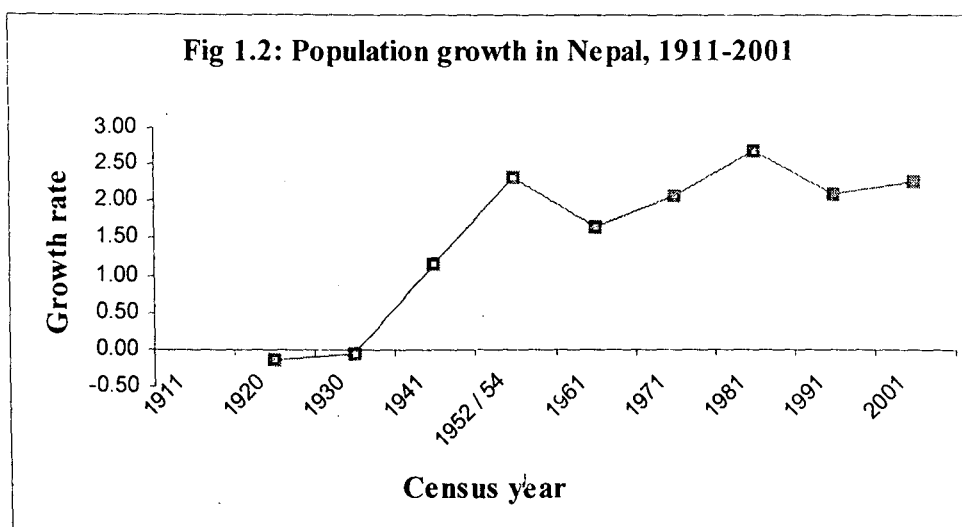
The age wise sex ratio of population in 2001 shows that sex ratio is in favor of males at age group 0-19 years and 45 years and above. Sex ratio is in favor of females at age group 15-44 years. More women in the reproductive age group means the larger number of births will take place given a fixed fertility rate (MOPE, 2002).

The percent distribution of the total population by broad age group viz., below 15 years is 39.4 percent, between 15 and 59 years is 54.1 percent and 60 years and over is 6.5 percent of the total population. The young dependency ratio of Nepal in 2001 is 72.8 percent and the old dependency ratio is 12.0 percent. The overall dependency ratio is 84.8 percent, which shows that Nepal has a heavy burden of dependency especially at the younger ages. The 2001 census shows that approximately 100 persons in the economically productive ages have to bear the responsibility for 84.8 dependents in terms of basic needs.

Table 1.1: Population size, growth and sex ratio of Nepal, 1911-2001

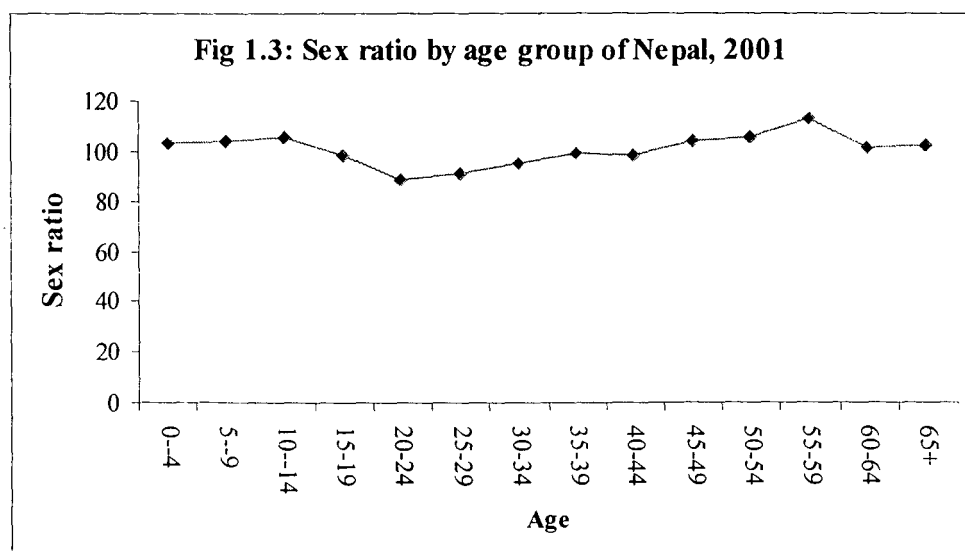
Censuses	Male (million)	Female (million)	Total (million)	Annual growth	Sex Ratio
1911	-	-	5.64		-
1920	-	-	5.57	-0.13	-
1930	-	-	5.55	-0.07	-
1941	-	-	6.28	1.16	-
1952-54	1.05	4.18	8.23	2.30	96.80
1961	4.63	4.78	9.41	1.65	97.28
1971	5.82	5.74	11.56	2.07	101.37
1981	7.70	7.34	15.04	2.66	105.02
1991	9.22	9.27	18.49	2.10	99.47
2001	11.56	11.59	23.15	2.25	99.80

Source: CBS 1987, 1995 2001
MOPE (2002)

Fig 1.2: Population growth in Nepal, 1911-2001**Table 1.2: Population size by age and sex and sex ratio of Nepal, 2001**

Age group	Male pop. (Million)	Percent of total Male	Female Pop. (Million)	Percent of total female	Sex ratio	Percent of total population
0-4	1.39	12.29	1.34	11.95	102.7	12.12
5-9	1.63	14.38	1.58	13.87	103.5	14.12
10-14	1.53	13.5	1.45	12.73	105.9	13.11
15-19	1.12	10.44	1.2	10.57	98.6	10.51
20-24	0.95	8.33	1.07	9.4	88.5	8.87
25-29	0.82	7.93	0.91	7.95	90.8	7.59
30-34	0.73	6.39	0.76	6.71	95.1	6.55
35-39	0.65	5.73	0.65	5.79	98.8	5.76
40-44	0.54	4.75	0.55	4.82	98.5	4.79
45-49	0.47	4.13	0.45	3.99	103.5	4.06
50-54	0.39	3.46	0.37	3.28	105.2	3.37
55-59	0.32	2.8	0.28	2.49	112.4	2.65
60-64	0.26	2.31	0.25	2.27	101.8	2.29
65+	0.47	4.26	0.46	4.16	102.3	4.2

Source: CBS 2001.



1.1.4 Contraceptive use in Nepal

The history of materialization of contraceptive in Nepal goes back to the early of mid 20th century, especially the establishment of Family Planning Association of Nepal (FPAN). In the beginning very limited services were made available. In fact, Nepal was one of the first countries in South Asia where information about family planning was available through non-governmental organization. FPAN was established in 1959 but it became functional after 1965. IUD, Pills and condoms were made available for the couples and special priority was given to promote IUD and Pills rather than condom.

During the five-year plans the target approach was adopted in family planning program but it was not coercive. In fact, the target approach was implemented since third five-year plan (1965-70) and continued for a long period. Comparatively, the achievement of condom in each five-year plan was more than the target, which was based on the number of condoms distributed during the plan periods. The number of condoms distributed gives the only the number but we do not know how many people are using them. During 1975 to 80 family planning services were extended throughout the country under “Family Planning / Maternal and Child Health Project”. A village based field worker was also appointed to motivate and distribute the contraceptives especially condoms. Commercial distribution of contraceptive was also started throughout Nepal by contraceptive retail sales (CRS) since 1980. The family planning services were integrated with health services and made available in all government health institutions. In 1990 the government decided

to operate one sub- health post in each VDC, which increased the accessibility of family planning services at VDC level in Nepal.

A substantial growth was observed in the number of new acceptors of condoms up to the end of the ninth five-year plan (1997-2002). Currently, besides the government program a large number of NGOs are also providing family planning services in Nepal. Table 1.3 gives the trends in current use of family planning methods in Nepal.

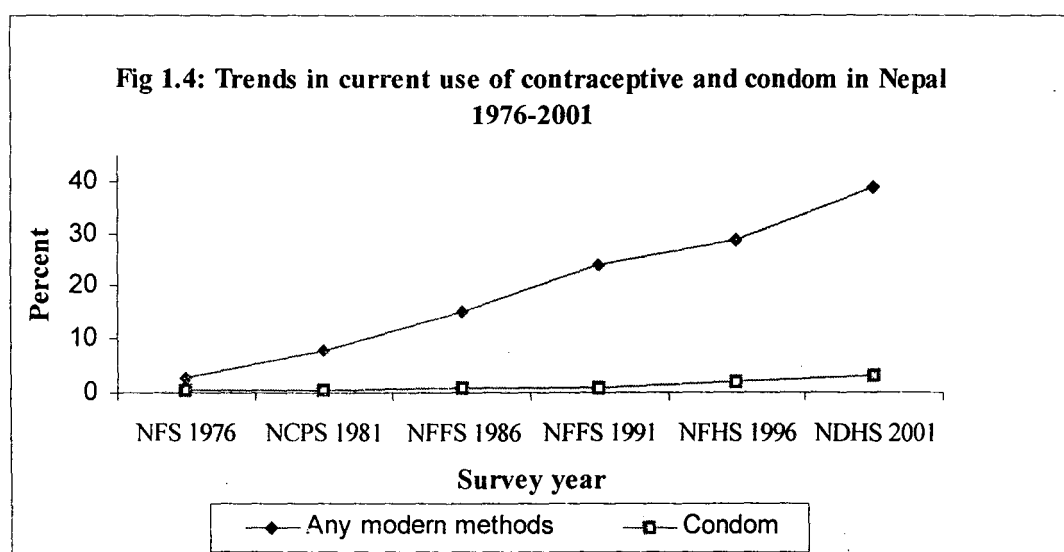
The level of modern contraceptive use in Nepal has risen over the last two decades. The current contraceptive prevalence rate (CPR) is 38.9 percent in 2001, which was 3.2 percent in 1976. The percent increase in current use of contraceptive among currently married women is the highest between 1996 and 2001 and lowest between 1991 and 1996. The use of modern contraceptive methods increased by 35.0 percent over the last five years. Among the methods female sterilization has become popular, which was only 0.1 percent in 1976 but 16.5 percent in 2001. However, the share of female and male sterilization has decreased substantially over the period. The share of female sterilization decreased to 42.0 percent in 2001 from 46.0 percent of the modern methods in 1996 and the share of male sterilization also decreased to 18.0 percent in 2001 from 21.0 percent in 1996. The share of temporary methods has increased to 40.0 percent from 33.0 percent in the same period. This indicates that more women have the tendency to utilize spacing methods rather than limiting methods. Among the temporary methods, injectables were most preferred in 2001 but it was very low in 1976. There is ten-fold increase in use of injectables between 1981 and 2001.

The current use of condom has considerably increased between 1991 and 2001. Due to the influence of socio-economic, religious and other reasons, the use of condom is low especially in the rural parts of the country. On the other hand, accessibility, affordability and other behavioral factors are also the key causes of not using condoms in the rural part of the country (Karki, 1995). The use of condom has been increasing in all parts of the country due to of HIV/ AIDS, improvement in literacy level of men and women, the social marketing of condom in recent years and the migration of men from MWDR and FWDR to cities in search for better work. However during these years HIV / AIDS has also emerged as an important reason for using condom. Fig 1.4 shows the trend in total contraceptive prevalence and condom prevalence rates in different surveys.

Table 1.3: Trend in current use of contraception by method in different surveys

Contraceptive methods	NFS 1976	NCPS 1981	NFFS 1986	NFFS 1991	NFHS 1996	NDHS 2001
Sterilization - Female	0.1	2.6	6.8	12.1	13.3	16.5
Male	1.9	3.2	6.2	7.5	6	7
Pills	0.5	1.2	0.9	1.1	1.5	1.8
Injectables	0	0.1	0.5	2.3	5	9.3
Condom	0.3	0.4	0.6	0.6	2.1	3.2
Norplant	-	-	-	0.3	0.5	0.7
IUD	0.1	0.1	0.1	0.2	0.3	0.4
Modern methods	2.9	7.6	15.1	24.1	28.8	38.9

Source: NFS 1976, NCPS 1981, NFFS 1981, NFFS 1991, NFHS 1996 and NDHS 2001



1.2 Research Problem

A condom can be effective in preventing pregnancy and it also can protect against a wide range of STDs. More recent studies have confirmed HIV/AIDS and Chlamydial infection can be prevented through the use of condom (Austin, 1999). Many studies conducted during nineties in the most parts of the world showed that many people did not believe in condom due to its quality and effectiveness (Lan, 2002, Friedman, 2002 and Gardner, 1999). The consistent use of condom is found to be very low particularly in the developing countries of Asia and sub-Saharan Africa.

As mentioned earlier, condom was supposed to be the method of family planning during mid sixty to eighty in Nepal. However, after the emergence of HIV/AIDS, condom has been used for both the purposes in the most parts of the country.

The pattern of condom use has changed considerably although the prevalence rate of condom is still low. In this context the proposed study will try to answer the following queries.

- What is the current level of knowledge of condom, knowledge of sources of condom and utilization pattern of condom among currently married men in Nepal?
- What are the reasons for condom use and problems with condom among currently married men in Nepal?
- Do currently married men know about HIV/AIDS and ways to avoid it?
- Is there any change in pattern of condom use in the context of HIV /AIDS among currently married men in Nepal?

1.3 Objectives

Personal characteristics, such as age, sex, educational attainment, occupation, mass media exposure, spousal communication, sexual activities, drinking and smoking behaviors and geographical characteristics viz., residence, ecological regions, development regions have major impact on condom use. Hence the use of condom will be analyzed controlling the effect of these background characteristics. The main objectives of this study are

- To analyze the effect of personal and geographical characteristics on knowledge, knowledge of sources and use of condom (ever and current use) among currently married men in Nepal.
- To examine the effect of personal and geographical characteristics on the reasons for first use of condoms and problems with condom among currently married men in Nepal.
- To analyze the effect of personal and geographical characteristics on the knowledge of HIV/AIDS, ways to avoid the HIV/AIDS and the lack of knowledge to avoid HIV /AIDS for currently married men.

1.4 A literature review on condom use

At a global level, numerous studies have been conducted concerning the issues of contraceptives use. Condom is the only male-based method that offers dual

protection. In fact, the importance of condom was really understood after 80's to protect from HIV/AIDS and some extent for the protection from sexually transmitted diseases. Increasing condom use is crucial to controlling the spread of AIDS. A large number of studies, which examine the various aspects of use of condom viz., knowledge of condom, reasons for using condom, problems with condom and use of condom in the context of HIV / AIDS have been conducted at global level.

A study conducted in Russia in an STDs treatment clinic to examine HIV / AIDS knowledge, attitude towards condom, and source of information among 200 male showed lack of substantial knowledge of HIV /AIDS and condom. A majority of respondent reported that condom was very expensive and the quality was also very poor. Many respondents experienced the breakage of condom during vaginal intercourse (*Pinkerton, 2004*).

A qualitative research was conducted at Sichuan in China to examine the factors associated with condom use among 106 men. From focus group discussion showed that 24.0 percent of them replied that condom was difficult to use and easy to forget, 20.0 percent reported that source of condom was not easily accessible and 30.0 percent replied condom reduces the sexual pleasure and rest of the respondents 26.0 percent replied condom was difficult to store, price of condom was expensive and not having good quality (*Luo, 1996*).

An anonymous questionnaire survey was carried out among 720 undergraduate students at the University of Tirana, Albania, in October–November 2002. Two hundred seventy-nine students reported having sexual experience and provided data on condom use as well as knowledge about STIs. In multivariate models, there was an overall association of knowledge about STIs with consistent condom use (odds ratio = 1.74). There was a positive association among students with highly educated parents (odds ratio = 1.48)(*Burazeri, 2004*)

An extensive research conducted between 1997 to 1998 on 701 female sex workers in Southern China (Shenzhen) on HIV related knowledge, condom use and STD history showed that “refusal by men” was the main cause of not using condom. Odds ratio from multivariate analysis showed that the use of condom was significantly associated with age, educational attainment and average number of client intakes per day (*Lau, et al., 2002*).

Data from 932 sexually active grade 10-12 students from a sample of 72 public secondary schools in seven Australian states and territories were collected

using a cross-sectional, self-report questionnaire between May and September 1992. The sample comprised 175 senior classes and consisted of 408 boys and 524 girls. Odds ratios from binary logistic regression analysis showed that age was significantly associated with use of condom for both sexes and the sex itself was also a strong predictor of condom use. The odds ratio of boys is found higher than the odds ratio of girls. Higher percent of adolescents were more aware about pregnancy prevention rather than diseases prevention (*Donald, 1994*).

300 patients (255 males and 45 females) attending a public STD (sexually transmitted diseases) clinic in Singapore during 1998 to 1999 were interviewed regarding their frequency of condom use, attitudes towards condoms, problems related to condom use, and places to purchase the condoms. The most common reasons why male respondents did not use condoms consistently were that condoms decreased sensation, condoms made sex mechanical, the use of other forms of contraception, no condoms were available, and the perception that there was no risk of contracting STD/AIDS. Condoms were most commonly obtained from sex partners, supermarkets, roadside sundry shops and the Maternal and Child Health Clinics (*JHUCCP, 2003*).

The Sri Lanka Contraceptive Prevalence Survey, 1982, provides information on effective knowledge of family planning sources, types of available sources, and accessibility of sources. The knowledge of condom among men and women living in urban areas was higher than their rural counterparts. The knowledge of condom varied among the sub- group viz., government, private, non-program, and other, which included Ayurvedic doctors and the workplace. The multivariate analysis showed that urban, better-educated, nonworking women used private and non-program sources. However, women from Muslims and Roman Catholics used both private and government sources but Sihanli and Hindu women were more likely to use government sources. Correspondingly, education was highly correlated with private source rather than government sources (*JHUCCP, 2003*).

Data from a reproductive health survey conducted in July-August 2000 among a representative sample of 1284 unmarried sexually experienced youth aged 15-24 years in urban Cameroon shows that odds ratio from binary logistic regression for the youth who had multiple partners was higher than men having only one partner. The odds ratio of condom use was found to decrease with rise of age but odds ratio was

found to increase with rise of educational attainment of women. Education was significantly associated with use of condom (*JHUCCP, 2003*).

In Bali STD and AIDS survey were conducted between 1997 and 1999 and samples of 2,026 men were selected for interviews in low price brothels. Statistical methods included multivariate regression models. Results of the study showed that younger men, who had resided in Bali for at least a year, and more educated men were more likely to use condoms than the occasional visitors. Furthermore, men with better AIDS and STD knowledge and condom beliefs were more likely to use condoms (*Ford, 2002*).

Results from the 1994 Côte d'Ivoire Demographic and Health Survey shows that accuracy of knowledge about AIDS does not significantly predict condom use. For male respondent, the odds of condom use from logistic regression are found to be lower at age 35 years and older than among those aged 15-19 years. Compared to uneducated men, educated men are significantly more likely to report condom use. Among women, those aged 25 years or older had significantly lower odds of condom use than women at aged 15-19 years. The odds of condom use are significantly higher for men and women who have attained higher education and having the knowledge of AIDS (*Zellner, 2003*).

A behavioral survey conducted among 300 US women in 2000 shows that the odds ratio of utilization of condom is found to be higher among women who tested for HIV and increase as perceptions of their chance (and their partner's chance) of being positive increases. Furthermore, women who perceived themselves to be at least somewhat likely to be HIV positive have a higher probability of using a condom to prevent STD, and women who perceived their partners to be HIV positive are twice as likely as other women to use a condom for STD prevention (*Gorman, 2001*).

Cambodia had the highest HIV rate in Asia Pacific region with high proportion of transmission occurring through commercial sex. When government instituted a 100 percent condom program and condom distribution rose from 99,000 in 1994 to 16 million in 2001, STI among the sex workers fell by 60.2 percent and HIV prevalence in general population has also started to fall by 2 percent (*Hearst, 2004*).

A survey conducted in Cameron in 2000 among 1284 sexually experienced adolescent men and women aged 15-19 years showed that most of the youth tried condom at least once. The likelihood of utilization of condom was higher among

those who had knowledge of AIDS and STDs. For males who had discussed about family planning and STI, the utilization of condom was higher than those who did not discuss about the family planning. Odds ratio from logistic regression showed that the odds of use of condom decreased with rise of age of men but there was no significant link between age and use of condom. On the other hand, the use of condom is low for those who believe that condom reduces the sexual pleasure (*Meekers, 2000*).

A multiyear survey conducted between 1992-98 in Abidjan among 5,730 female sex workers who were invited to a clinic to check their health showed that the decrease in HIV prevalence (89.0 to 32.0 percent), gonorrhoea (33.0 to 11.0 percent) and other diseases (20.0 to 5.0 percent). The odds ratio from logistic regression also shows that the increase in utilization of condom leads to the decrease in infections rate (*Ghys, 2002*).

A research on “Reasons for non-use of condom in eight countries of sub-Saharan Africa.” conducted by Population Service International (PSI) in 2002 showed that trust of their partner was the main cause of not using condom among men and women. On the other hand, dislike of condom was also the most important determinant of not using condom and price of condom was also the barrier to use condom. Lack of condom availability was also cited as the reason for not using condom (*Agha, 2002*).

The data from a panel study of 661 men aged 20-24 in rural Malawi during 95s shows that age, education, occupations other than farming, and childhood residence in a city or town all show positive associations with HIV/AIDS knowledge. However, a strong negative relationship is also apparent among those with no education (*Fallon, 2004*).

The existing literature shows few studies have been conducted regarding the issue of condom use in Nepal. KAP surveys referred to some studies on use of condom although no study is concerned with various aspect of condom use viz., knowledge of source of condom, reason for first use of condom, problems with condom and especially use of condom to avoid HIV /AIDS and no attempt has been made to correlate some important characteristics of men with these aspects.

A qualitative survey conducted in rural village of Chitwan district of Nepal over a 12-months period in 1993-94 reveals that majority of men and women had the misconception that condom weakens, thins and creates an uneasy feeling for a person. In addition to this, a majority of men replied that condom was difficult to use,

embarrassing to obtain and not reliable to use because of the higher breakage rate (Sharon, 1999).

A study on “Gender and HIV / STDs risk in Nepal” conducted in nine village reveals that woman’s concerns about having “good character” often prevented them from using condom. If a woman even were even to discuss condom use, her character and fidelity would be questioned (*Population Report, 1999*).

A study on “Constraints on condom use among young men in border towns of Nepal” showed a wide gap among knowledge, attitude and practice regarding the utilization of condom among young men. A majority of young men perceived that casual sex did not transmit diseases. On the other hand, trust was another barrier for not using condom “A healthy looking person does not possess HIV /AIDS” is the common notion among young men. Some respondent replied that condom always diminishes the sexual pleasure and it also spoils the sexual mood (Tamang, *et al.*, 2000).

A survey conducted among youth in age group 15-19 years in three districts (Dhading, Morang and Lalitpur) of EDR and CDR in 1999 showed type of residence, source of information and educational level were highly significant with knowledge of condom and knowledge of HIV / AIDS in Nepal. In addition to this, young men were better informed about condom and AIDS than young women (*Simkhada, 2000*).

Behavior Surveillance Survey (1999) in the Highway route of Nepal shows that knowledge of AIDS was high (98.8 percent) among transport workers, (99.0 percent) among students, male labor force and the least among the sex worker (88.0 percent). The knowledge of condom among the student was the least (92.0 percent) but the knowledge of condom among the sex worker was comparatively higher than others. Use of condom in all sexual intercourse with a client was 42.0 percent. The main purpose to use condom among the sex workers was to avoid the pregnancy and avoid the infection. Among the transport worker and the male labor force, utilization of condom with wife or girl friend was lower than sex worker and casual partners (*New Era, 1990*).

A study conducted in 2001 by Save the Children US shows that among 610 rural men in western Nepal, approximately 2.3 percent of men had HIV infection, while 1.3 percent was diagnosed with at least one STI. HIV rate was disaggregated by migration status viz., 3.7 percent of migrants of the other countries, 3.0 percent of internal migrants and 0.7 percent of non-migrants had HIV infection. Both the

knowledge of condom (96.0 percent) among men and the knowledge of AIDS was high (93.0 percent) (*Smith-Estelle, 2003*).

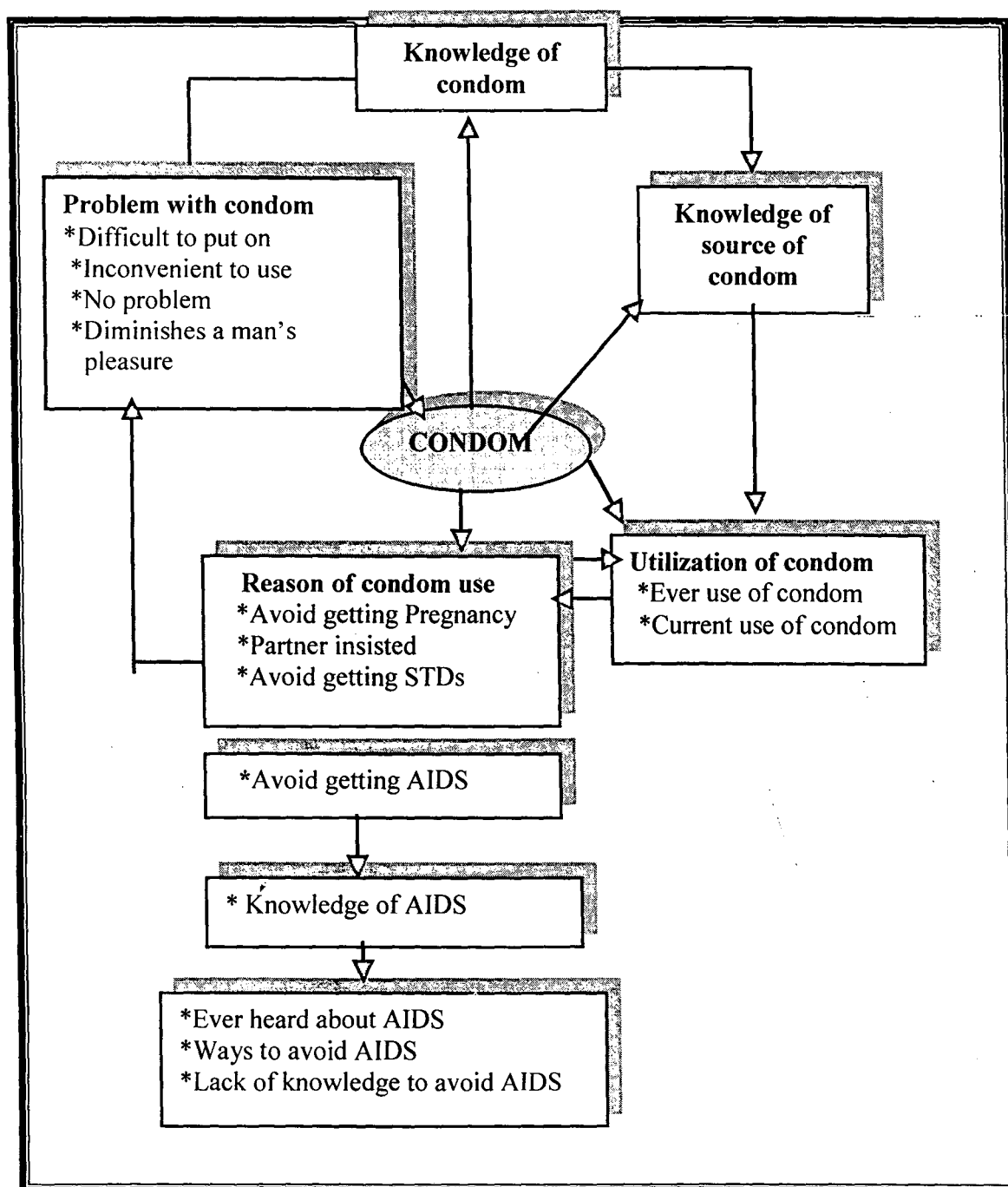
Based on the survey of literature, we have developed a conceptual framework for utilization of condom in the context of HIV/AIDS in Nepal. Fig 1.5 presents the conceptual framework on utilization of condom in the context of HIV / AIDS in Nepal.

1.5 Conceptual Framework

One of the most important factors of utilization of condom is the knowledge of condom, which leads to the search for sources of condom from where condom is available. Better access to condom can increase the utilization of condom. There are numerous sources of condom in Nepal viz., government sources, private and non-governmental organizations. However the contribution of government health post / center, pharmacy and shops is substantial in the supply of condom as compared to the other sources.

It is our hypothesis that utilization of condom is also linked with the reasons for utilization. As the literature survey shows, the main purpose of utilization of condom is to prevent pregnancy and protection from sexually transmitted diseases (STDs) and HIV / AIDS. However the utilization of condom for protection of AIDS depends up on the knowledge of AIDS and ways to avoid AIDS. A large number of men have mentioned condom related (difficult to put on, embarrassing to obtain, breakage of condom) and other behavioral (diminishes the pleasure, spoils the mood) problems. We expect that utilization of condom is also strongly linked to these problems. We have tried to explore the use of condom in the context of HIV / AIDS in Nepal based on the information from Nepal Demographic Health Survey 2001.

Fig 1.6: Conceptual framework of utilization of condom in the context of HIV / AIDS in Nepal



1.6 Hypotheses

The null hypotheses to be tested are as follows:

- There is no significant difference in knowledge of condom by background characteristic of men.
- There is no significant difference in knowledge of source of condoms (government health post / center, pharmacy and shops) by background characteristics of men.
- There is no significant difference in ever use of condom by background characteristics of men.
- There is no significant difference in reason for using condom (avoids the pregnancy and avoiding AIDS) by background characteristics of men.
- There is no significant difference in problems with condom (difficult to put on, no problem) by background characteristics of men.
- There is no significant difference in knowledge of HIV/AIDS (ever heard of AIDS) by background characteristics of men.
- There is no significant difference in the ways of avoiding AIDS (use of condom during sex) and use of condom among those who know AIDS.

1.7 Methodology

1.7.1 Source of Data

The analysis presented here is primarily based on NDHS 2001, which is the sixth series of national level population and health survey conducted in Nepal. It is the most comprehensive demographic sample survey after NFHS 1996. This survey was conducted as part of global Demographic and Health Survey (DHS) program. Men questionnaire was also added in NDHS 2001 for the first time in Nepal. This survey was carried out under the supervision of Ministry of Health and ORC Macro International provided the technical support through its MEASURES DHS+ project. The main objective of this survey was to provide updated information on fertility, family planning, IMR, CMR, status of women and children and knowledge of HIV/AIDS.

1.7.2 Sampling method

A sample of 8,726 ever married women in age group 15-49 years and 2,261 ever-married men between in age group 15-59 years were interviewed in NDHS 2001.

In NDHS 2001, data were collected separately for urban and rural and based on eco-dev regions by cross-classifying three ecological belts with five development regions.

For NDHS2001, the sampling frame used was the1991 census. In NDHS 2001, the primary sampling unit (PSU) was a ward or group of wards in rural area and sub-ward in urban areas. The sample for the survey was based on two-stage stratified sampling. At the first stage 257 PSU, 42 from urban and 205 from rural were selected in 2001. PSU's were selected by systematic sampling with probability proportional to size sampling. At the second stage, 34 households per PSU on average were selected in 2001 to provide the reliable estimate of the variables. It was estimated to obtain completed interviews of 8400 ever-married women aged 15-49. In 2001, ever-married men age 15-59 were also interviewed in every third households. Considering the non-response error, a total of 8700 households nationwide were selected.

In Mountain region, there was no urban place in 1991 census sampling frame so that no PSU was included as an urban from Mountain region in 2001. The response rate in NDHS 2001 is lower than in NFHS 1996. In addition to this, the response rate for eligible men is lower than for eligible women in NDHS 2001. Response is varied for men by rural urban residence. Rural response rate for men is higher than urban response rate. Table 1.4 gives the information about sample selection in NDHS 2001.

Table 1.4: Sample allocation for NDHS 2001 of Nepal

Characteristics	2001		
	Urban	Rural	Total
PSU	42	205	247
Mountain	-	35	35
Hill	21	83	104
Terai	21	87	108
HHs selected	1271	7593	8864
HHs interviewed	1218	7384	8602
Response rate	95.8	97.2	97.1
Men			
No. of eligible men	329	2024	2353
No. of interviewed men	304	1957	2261
Response rate	92.4	96.4	96.1
Total response rate (M/F)	95.9	98.1	97.8

Source: NDHS 2001

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1.7.3 Questionnaire

NDHS 2001 was similar to Demographic Health Surveys (DHS) conducted in other developing countries of Asia and Africa. The content and design of questionnaire were based on measure DHS+ Models 'B' type questionnaire. In addition to this, a number of additional questions specific to ongoing health and family planning programs were added in Nepal. In 1996 only two types of questionnaire namely, household and women's questionnaire were used although in 2001 men's questionnaire was also added. These questionnaires were developed into three languages, Nepali, Maithali and Bhojpuri.

The household questionnaire collected the information on relations to the households, resident, age, sex, marital status, and education of each usual resident or visitors. All usual members in selected households, and visitors who stayed there in previous night were enumerated. In addition to this, source of drinking water, access to toilet, religion and ethnicity, number of bedrooms available in the house were also asked. The main purpose of this questionnaire was to find women who were eligible for individual interviews, that is, ever-married women aged 15-49.

On the other hand, women's questionnaire collected information on background characteristics including age, education, religion, reproductive history, contraceptive knowledge and use, antenatal, delivery and postnatal care, fertility preference and attitude about family planning, marriage, breast feeding and weaning practices, child health, maternal mortality, vaccination and the health of children, height and weight of children and their mothers and family planning and knowledge of HIV/AIDS.

In 2001 survey, men's questionnaire collected information on male's backgrounds characteristics, contraceptive knowledge and use, fertility preference, marriage, attitude towards family planning and knowledge of HIV/AIDS. More specific questions were added regarding the condom use in men's questionnaire in 2001. The set of questionnaires was tested before the survey. Pre-testing for all three set of questionnaire was conducted in December 2000 and it was conducted in both rural and urban areas in 2001 survey.

1.7.4 Methods and tools of data Analysis

In this study, currently married men are taken as the unit of analysis. The dependent and independent variables under the study are categorical in nature. An

attempt has been made to apply the best measures to analyze the data. Chi-square test, binary and multinomial logistic regression have been used for the analysis. The detailed explanation of these techniques is given below.

Chi- square test:

Chi square test has been primarily used to test the independence between the background characteristics and response variables. The mathematical form of Chi square test is given by

$$\text{Chi square} = \sum \frac{(O_i - E_i)^2}{E_i}$$

Where O_i = Observed frequencies and

E_i = Expected frequencies

Null Hypothesis:

There is no significant difference between the background characteristics and the response variables under study.

Alternative Hypothesis:

There is consistent and predictable relationship between background characteristics and response variables under study

Decision rule:

Accept the null hypothesis if calculated value is less than or equal to tabulated value and if calculated value is greater than tabulated value then reject the null hypothesis with $(c-1) (r-1)$ degrees of freedom at given level of significance.

Logistic regression

Since the dependent variables under study are categorical in nature so that logistic regression is applicable for the best explanation. Two types of logistics regression have been used.

Binary Logistic Regression

In binary logistic regression, the response variable contains two categories like true and false etc. Mathematical form of binary logistic equation is given as

$$P = \frac{1}{1 + \text{Exp}(-Z)}$$

Where, p = estimated probability

Z = predictor

But for the multivariate case, z can be expressed in terms of linear combination of other predictor variables as $Z = b_0 + b_1X_1 + b_2X_2 + \dots + b_nX_n$ then the logistics function reduces to the form

$$P = \frac{1}{1 + \text{Exp}[-(b_0 + b_1X_1 + b_2X_2 + \dots + b_nX_n)]}$$

The ratio of probability of success and not success is also known as Odd

$$\text{Odds} = \frac{P}{1 - P}$$

Hence the binary logistic function reduces to the form

$$\text{Logit}P = b_0 + b_1X_1 + b_2X_2 + \dots + b_nX_n$$

Logistic regression can also be expressed as in probability form

$$P(x) = \frac{\text{Exp}(b_0 + b_1X_1 + b_2X_2 + \dots + b_nX_n)}{1 + \text{Exp}(b_0 + b_1X_1 + b_2X_2 + \dots + b_nX_n)}$$

Odds ratio:

Odd ratio has been used to compare the relative change in response variable with respect to predictor variables. The odd ratio is given by

$$\frac{\Omega^*}{\Omega} = \text{Exp}(b) \text{ which leads to } \log \frac{\Omega^*}{\Omega} = b$$

Where, Ω has its usual meaning.

This odd ratio gives the change in response variable when there is unit change in one predictor variable keeping rest of the variable constant multiplying the odds by certain exponential factor.

Multinomial Logistic regression:

For the case of more than two categories in response variable, multinomial logistics regression has been used. For three categories say; X_1 , X_2 and X_3 with estimated probabilities P_1 , P_2 and P_3 then the multinomial logistic model consists two equations

$$\text{Log}\left(\frac{P_1}{P_3}\right) = a_1 + b_1X_1 + c_1X_2 + d_1X_3$$

$$\text{Log}\left(\frac{P_2}{P_3}\right) = a_2 + b_2X_1 + c_2X_2 + d_2X_3$$

Where, the sum of the probabilities $P_1 + P_2 + P_3$ is unity.

The results are presented in terms of odds ratios. Wald statistics has been used to test the statistical significance of odds ratios. The goodness of fit statistics is tested by using model Chi square test, which is based on Hosmer-Lemeshow statistic. Under Hosmer - Lemeshow test for goodness of fit, the non-significant value indicates the model fits (Munro, 2001: 289-95)

1.8 Limitations of the Study

A study of sexual behavior is a very complex and difficult task because every respondent wants to keep this information secret. Collecting reliable information is a difficult task and the information collected from respondent may also suffer from biases. NDHS 2001 has provided benchmark data for this study but the surveys are confined to the following limitations.

(a) NDHS 2001 is based on samples and some samples are very small in national, regional and district level, which might not represent the district or regional level characteristics.

(b) Only ever-married men aged 15-59 have been included in the study. Global research shows that almost 71.0 percent of total condoms are used up outside the marriage especially, in adolescent age group 15-19 (Population Reports, 1999). A large number of condom users have been excluded from the data, which is a serious limitation of this study.

(c) Our study is only focused on utilization of condom by men although we have used the data on women's reporting of current use of condom to show the trends in current use of condom and contraceptive use because no information is available for men before 2001.

1.9 Organization of the study

The second chapter explains pattern and level of condom use (knowledge of condoms, knowledge of source of condom, ever use of condoms and current use of

condoms) in Nepal based on the background characteristics. Chi square test has been used to test for independence between background characteristics and different aspects of condom use.

The following chapter analyses condom use in Nepal. We analyze the reasons for using condoms and problems with condoms. Logistic regression has been used for analysis. Use of condoms in the context of AIDS has been discussed in fourth chapter. This chapter focuses on knowledge of AIDS, ways of avoiding AIDS and lack of knowledge of AIDS. The research conclusions are presented in the fifth chapter.

Chapter II

LEVEL AND PATTERN OF UTILIZATION OF CONDOM

2.1 Introduction

During 1960, knowledge and utilization of condom was extremely low in Nepal. In fact, maintaining a consistent supply of condom was very difficult in the country plagued by severe infrastructural constraints, lack of transportation and staffing irregularities. During the five-year plans, the target approach was adopted in family planning program although the target of condom was successfully fulfilled and the achievement rate of condom was also higher than other methods except female sterilization. Nepal Contraceptive Prevalence Survey (1981) showed that condoms were used as the preventive device for family planning during that time and condom was supposed to be the method of preventing pregnancy. The pattern of condom use changed after the emergence of HIV/ AIDS in the World and the first case of AIDS was identified in Nepal in 1988. From 1990, condoms have been extensively used as dual devices in Nepal. Nepal Behaviors Surveillance Survey (1999) also shows that condom has been widely used as the protective method for HIV / AIDS and STDs.

Before NFHS 1996, there was a lack of benchmark data on condom (knowledge and use) although Family Planning Association of Nepal (FPAN) conducted large number of micro-level study on contraceptives (FPAN 1998). NDHS 2001 give the specific information on knowledge, source and use of condom for the first time in Nepal. In NDHS 2001, data were collected from 2261 men regarding the various aspect of data was collected from ever married men aged 15-59 years. The total numbers of respondents were 2261 men. In this chapter knowledge, source and utilization of condom (ever and current use) have been analyzed. It has been found that there is no considerable difference between the sample of ever married and currently married men so this study is only confined to currently married men.

2.2 Description of variables

In the study of utilization, knowledge of condom, knowledge of source of condom and use of condom are the major factors. The four variables that are considered, as response variables are knowledge of condom, knowledge of source of

condom, ever use of condom and current use of condom. The percent distribution of response variables is presented in table 2.1.

Table 2.1: Percent distribution of response variables, 2001

Response	Yes	NO	DK	N
Knowledge of condom	97.0(2194)	3.0(67)	-	2261
Knowledge of Source of condom				
<i>Government health post / center</i>	30.7(694)	69.3(1566)	-	2261
<i>Pharmacy</i>	29.9(679)	70.0(1581)	0.1(1)	2261
<i>Shops</i>	15.4(348)	84.6(1912)	0.1(1)	2261
DK the source of condom	15.1(341)	84.9(1919)	0.1(1)	2261
Ever use of condom	35.7(806)	61.4(1388)	2.9(67)	2194
Current use of condom	6.7(152)	28.9(654)	64.4(1455)	2261

Source: NDHS 2001

The first response variable knowledge of condom has two responses yes and no. 97.0 percent men reported having the knowledge of condom and only 3.0 percent men reported not having knowledge of condom.

The second response variable has also two categories yes and no. This response variable has four main source of condom listed in the data set. These sources are: Government sector (Government hospital / clinic, Primary health care center / health center, Health post, Sub-health post, PHC outreach clinic, FCHV, Condom box and Other government), Non-government sector (Family Planning Association of Nepal, Marrie stopes, ADRA, Nepal Red Cross Society, Pharmacy and other private sources), Private medical sector (Private hospital/ clinic, Nursing home, Pharmacy and Other private) and other sources (Shops, friend / relative and other). However, only government health post / center, pharmacies and shops are the main sources of condoms in Nepal and 43.2 percent of condoms were distributed through government health center/ post followed by pharmacy, 35.8 percent and shops, 20.5 percent in ninth five years plans in Nepal (*MOH, 2001*). On the other hand, among men interviewed in 2001 a higher percent of men reported the knowledge of these three sources: 30.7 government health post/ center, 30.0 pharmacy and 15.4 percent shops. 5.2 percent of men obtained condom from FCHV, 5.1 government hospital, 2.1 percent friends and relatives, 2.0 FPAN, 1.2 private hospital / clinic, 0.7 PHC outreach clinic, 0.4 condom box, 0.2 NRCS, 0.2 ADRA Nepal, 0.2 other NGOs, 0.1 others and 0.04 percent from Marrie Stopes. An additional response variable “do not know the source of condom” has also been used to compare with knowledge of source

of condom. This response variable has three categories yes (15.1 percent), no (84.9 percent) and DK (0.1 percent).

The third response variable ever use of condom has three categories; yes, no and do not know. Among 2261 men, 35.7 reported ever use of condom, 61.4 percent not using condom and 2.9 percent reported do not know (missing).

The fourth response variable is current use of condom having three categories viz., yes, no and do not know. 6.7 percent reported currently using condom, 28.9 currently not using condom and 64.4 percent reported do not know. The reason why 64.4 percent as do not know is because the responses were obtained from a question on usage of all contraceptive including condoms. We surmise that 64.4 percent of all males are using other contraceptive methods other than condom including traditional method.

As predictor we have used personal characteristics viz., age, educational attainment, occupation, mass media exposure, spousal communication, smoking cigarettes, drinking alcohol, recent sexual activity and geographical variables viz., type of residence, ecological regions and development regions. These set of predictors under study are also categorical in nature. The detail description of theses variables is given in table 2.2.

Table 2.2: Percent distribution of men according their characteristics, 2001

Characteristic	Category
Age	
15-19	3.1(70)
20-29	27.6(625)
30-39	29.7(672)
40+	39.5(894)
Edu. attainment	
No education	37.4(846)
Primary	29.8(674)
Some secondary	20.1(455)
SLC and above	12.6(286)
Occupation	
Non-agriculture	64.6(1461)
Agriculture	35.4(799)
Mass media exposure	
None	2.2(14)
Any one	38.2(868)
Any two	18.0(406)
All three	15.7(354)

Spousal communication	
Never	49.3(1082)
Once or twice	31.3(687)
More	19.3(424)
Smokes cigarettes	
Yes	49.4(1118)
No	50.6(1143)
Ever drunk alcohol	
Yes	70.4(1591)
No	29.6(670)
Recent sexual Activity	
Active in last 4 weeks	81.3(1836)
Not active in last 4 weeks	18.7(423)
Residence	
Urban	13.4(304)
Rural	86.6(1957)
Eco. regions	
Mountain	13.6(307)
Hill	35.1(793)
Terai	51.3(1161)
Dev. regions	
EDR	25.2(570)
CDR	28.0(633)
WDR	17.2(390)
MWDR	13.0(293)
FWDR	16.6(375)

Source: NDHS 2001

2.3 Knowledge of condom

Knowledge of contraceptive method is the major basis of contraceptive use. A person does not use contraceptive unless s/he knows the method. Data of knowledge on contraceptives were collected in Nepal Fertility Survey that was a part of World Fertility Survey. Table 2.3 gives the trends in percent of currently married women who have knowledge of condoms in Nepal (1976-2001). Data on women's knowledge on condom have been used to show the trends in knowledge of condom because no data are available for men's knowledge before 2001. During 25 years, the level of knowledge of condom among currently married women increased from 4.8 percent in 1976 to 90.0 percent in 2001, almost 19 times, which is a sizeable increase. Initially the level of knowledge was poor and it increased sharply after 1986 with emergence of HIV /AIDS in Nepal. Figure 2.1 also illustrates the trends in knowledge of condom among currently married women in Nepal (1976-2001).

Table 2.3: Percent of currently married women who have knowledge of condom in Nepal, 1976 to 2001

Survey	Percent
NFS 1976	4.8
NCPS 1981	13.6
NFHS 1986	16.8
NFHS 1991	51.6
NFHS 1996	74.4
NDHS 2001	90.0

Source: MOH 2003, NFHS 1996, and NDHS 2001

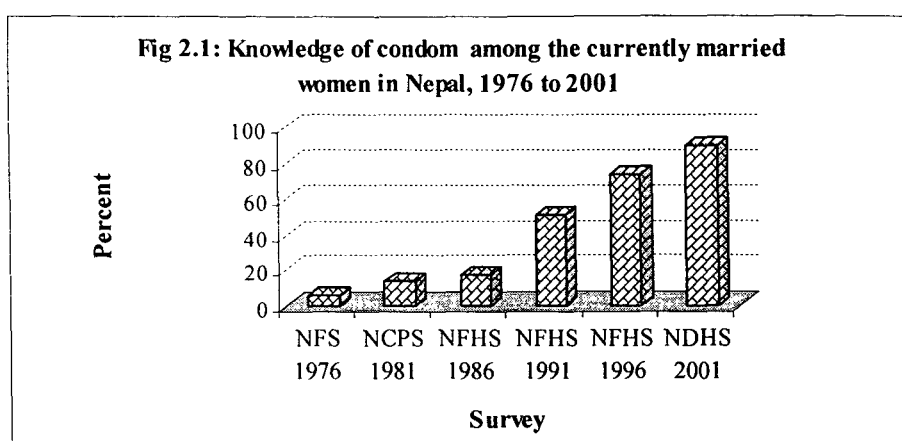


Table 2.4 shows the percent of knowledge of condom among currently married men by their characteristics. A Chi square test has been used to identify the association between the variables. We discuss the association for which Chi-square is statistically significant. These data show that over time, knowledge of condom has improved. In 2001 the overall knowledge of condom among married men is 97.0 percent. A higher proportion of men, 100.0 percent at younger age 15-19 years have the knowledge of condom than men at older age in 2001. Educational attainment of men is positively associated with the knowledge of condom. 100.0 percent men know condom who have attained SLC and above education know of condom, followed by 99.6 percent who have attained some secondary and the least, 93.3 percent for uneducated men. A South African survey conducted in 1994 also shows that level of knowledge of condom among illiterate men was 40.0 percent less than men having higher education (Population Reports, 1996). More educated men are more likely to know condom than their less educated counterparts. Chi square test validates that educational attainment of men is strongly associated with the knowledge of condom. Occupation of men is a strong predictor of knowledge of condom. Higher percent of

men, 98.7 percent working in non-agricultural sector know condom, followed by men working in agricultural sector, 96.1 percent.

A statistically significant difference has emerged between mass media and knowledge of condom among men. Higher portion of men, 100.0 percent who are exposed to at least two media know condoms, followed by, 99.8 percent those who are exposed to all three media (radio, TV and newspapers) and the least, 90.9 percent who are not exposed to any media. There is a strong link between spousal communication and the knowledge of condom among men. Higher percent of men, 99.8 percent who discuss more than twice about family planning know condom, followed by those who discuss once or twice, 99.4 percent and the least, 95.0 percent among men who never discuss about family planning. Recent sexual activity emerges as a statistically significant predictor for knowledge of condom. A higher proportion of men, 97.6 percent who were active in last four weeks know of condom than men, 94.6 percent who were not active in the last four weeks.

Among the geographical characteristics, residence and development regions exhibit a strong significant association with the knowledge of condom. Globally, it is argued that there is wide variation in knowledge of contraceptive by residence. This is particularly so in developing countries where a considerable disparity is observed between rural and urban residence. A higher proportion, 99.3 percent of men living in urban areas know condom than their rural counterparts, 96.7 percent. Chi square test for independence also confirms that there is significance difference in knowledge of condom by residence of men in 2001. A statistically significant association is observed between development regions and knowledge of condom in Nepal. A higher percent of men, 99.2 percent living in FWDR know condom because of their migration in search of better education and employment in the other regions. 98.6 percent of men living in EDR know condom and the least 93.8 percent men living in WDR know condom. Figure 2.2 to 2.7 present the knowledge of condom by different background characteristics of men.

Table 2.4: knowledge of condom by characteristic of men, 2001

Characteristic	Percent
Age	
15-19	100.0(70)
20-29	99.2(620)
30-39	98.7(663)
40+	94.1(841)
Chi Square	45.0**

Education	
No education	93.3(789)
Primary	98.9(667)
Some secondary	99.6(453)
SLC and above	100.0(285)
Chi Square	68.6**
Occupation	
Agriculture	96.1(1404)
Non-agriculture	98.7(789)
Chi square	12.6**
Mass media index	
None	90.9(636)
Any one	99.2(857)
Any two	100.0(406)
All three	99.8(353)
Chi square	120.7**
Spousal communication	
Never	95.0(1028)
Once or twice	99.4(683)
More	99.8(423)
Chi Square	43.3**
Smokes cigarettes	
No	97.6(1115)
Yes	96.5(1079)
Chi square	2.12
Drink alcohol	
No	96.0(643)
Yes	97.5(1515)
Chi square	3.8
Recent sexual activity	
Active in last four weeks	97.6(1794)
Not active in last four weeks	94.6 (400)
Chi square	11.1**
Residence	
Urban	99.3(302)
Rural	97.7(1892)
Chi Square	6.5**
Eco. regions	
Mountain	96.4(296)
Hill	97.5(773)
Terai	96.5(1125)
Chi Square	1.1
Dev. regions	
EDR	98.6(562)
CDR	97.2(615)
WDR	93.8(366)
MWDR	95.2(279)
FWDR	99.2(372)

Chi Square	28.17**
N	2194

Note:

1. The sum of percent is not equal to 100 due to percent in terms of total of each category.
2. The figures in parenthesis denote the total number of cases.
3. ** = $P < 1\%$, * = $p < 5\%$
4. In case of column only the positive responses have given. But the Chi square has been conducted by using both positive and negative responses. The negative response is not shown in the table.

Source: NDHS 2001

Fig 2.3: Percent of men who know condom by age group, 2001, Nepal

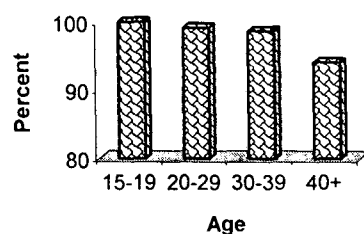


Fig 2.4: Percent of men who know condom by dev.regions, 2001, Nepal

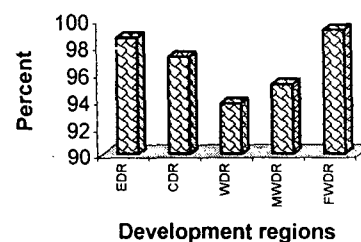


Fig 2.5: Percent of men who know condom by educational attainment, 2001, Nepal

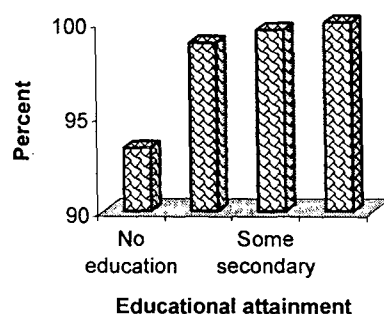


Fig 2.6: Percent of men who know condom by mass media exposure, 2001, Nepal

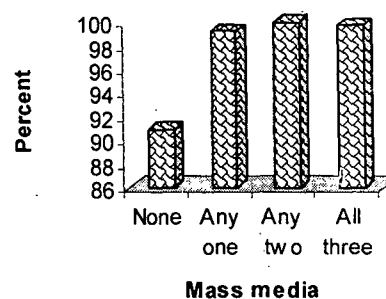


Fig 2.7: Percent of men who know condom by spousal communication, 2001, Nepal

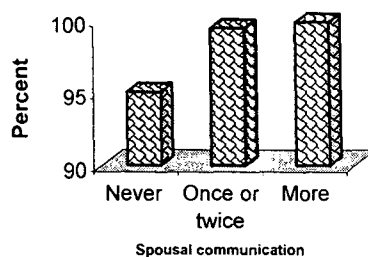
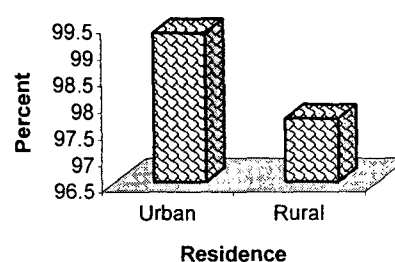


Fig 2.8: Percent of men who know condom by residence, 2001, Nepal



2.4 Knowledge of Source of condom

Knowledge of source is also an important factor for utilization of condom. Global experience shows that few condoms are used up if the source of condom is not easily accessible. In addition to this, ignorance of source is another important determinant of not using condom. Currently social marketing of condom is becoming very popular in some African and Asian countries. In this context, social marketing might become the major source for the condom promotion (*UNAIDS, 2002b*). A cross-sectional survey conducted in de Cotevire in 2000 among college students, who were involving in heterosexual activities (n=158) showed that 42.0 percent of them wanted condom but the source of condom was not known by them (*Crossby, 2002*).

As explained earlier, the topographic structure of Nepal is not uniform and it is a major obstacle for consistent supply of condoms to the remote rural part of the country. Although a series of organizations have been involved for the condom distribution and awareness program in these areas but the achievement is not satisfactory.

As explained in table 2.2 only three response variables viz., government health post / center, pharmacy, shops as a main source of condom have been analyzed here. For comparative purposes another response variable, lack of knowledge of source of condom has also been added in analysis. We discuss the association for which Chi-square is statistically significant.

Table 2.5 presents percent of men who know the source of condom where one can obtain a condom and background characteristics for 2001. Nearly 31.0 percent of men interviewed in 2001 reported that they know that condom is available from government health post / center, 30.0 percent pharmacy and 15.4 percent shops. Age does not show a significant association with knowledge of source of condom but age has a significant association with lack of knowledge of source of condom. A higher proportion of men at older age do not know the source of condom than men at younger ages. Educational attainment of men shows a highly significant variation with the knowledge of government health post / center and pharmacy. 34.2 percent men attained primary education know government health post / center, followed by 31.3 percent men who attained some secondary education and the least, 20.1 percent who have attained SLC and above education. 36.6 percent of men who have attained some secondary education know pharmacy as a source of condom followed by 35.1 percent men who have attained primary education. Educational attainment of men is

significantly associated with lack of knowledge of source of condom. An inverse relationship exists between educational attainment and lack of knowledge of source. Among uneducated men, 31.6 percent do not know the source but 0.6 percent of men having education SLC and above do not know the source. Occupation of men shows a statistically significant association with knowledge of government health post / center. 35.5 percent men working in agricultural sector know government health post / center as a main source of condom compared with 22.8 percent men working in non-agricultural sector. Nigerian Demographic Health Survey during 90s shows that higher proportion of men working in non-agricultural sector reported knowledge of pharmacy and shops as a main source of condom (*Kamboji, 2000 and Olide, 2001*). 18.2 percent men working in agricultural sector do not know source but only 9.4 percent men who are working in non-agricultural sector do not know the source of condom. This indicates that men who work in agricultural sector are less likely to know of the source of condom. Occupation has strong relationship with lack of knowledge of source.

Mass media exposure shows a statistically significant association with knowledge of government health post / center and pharmacy. 36.1 percent of men who are exposed to any one mass media report the knowledge of government health post/ center followed by 30.3 percent of men exposed to no mass media and the least, 20.1 percent of men who are exposed to all three media report knowledge of government health post / center. Similarly, 35.7 percent of men who are exposed to any two mass media report the knowledge of pharmacy followed by 31.9 percent of men who are exposed to any one mass media and the least, 23.6 percent of men who are exposed to no mass media have knowledge of pharmacy. There exists a statistically significant association between mass media exposure and ignorance of source of condom. 33.8 percent of men who are not exposed to any mass media report ignorance of source of condom. Similarly, 12.6 percent of men who are exposed to any one mass media report ignorance of source of condom and the least 0.6 percent of men, who are exposed to all three mass media, do not know the source of condom. Spousal communication exhibits a significant relationship with the knowledge of government source and ignorance of source of condom. 32.9 percent of men who have never discussed about family planning with their partner know government health post / center, followed by 30.6 percent who discuss once or twice but less percent of men reported to know government health post / center who discuss more

about family planning. This is because those who discuss FP with partner more than twice in a year know pharmacy (29.3 percent) better than government health post / center (24.6). Likewise, 23.3 percent of men who never discuss about family planning with their partner report the ignorance of source of condom but 2.6 of percent men do not know the source of condom who discuss about family planning frequently.

Residence has a direct positive link with knowledge of source of government health post / center, pharmacy and shops. Among men, 33.9 percent living in rural area are more likely to know government health post / center than their urban counterparts, 10.2 percent. Similarly, 42.1 and 26.0 percent of men living in urban areas are more likely to know pharmacy and shops than their rural counterparts, 22.8 and 13.8 percent respectively. It is apparent that government sources are more popular in rural parts and pharmacy and shops are mostly accepted in urban areas in Nepal. On the other hand, men living in urban area are more knowledgeable about the sources of condom than men living in rural areas in Nepal. Ecological regions emerge a significant association with government health post / center and shops. 45.0 percent of men residing in Mountain region know of government health post /center followed by 32.8 and 25.5 percent of men living in Hill and Terai region respectively. On the other hand, 31.6 percent of men living in Terai region know pharmacy followed by 27.6 and 19.6 percent men living Hill and Mountain regions respectively. Comparatively, men living in Mountain region are less likely to know source of condom than men living in Hill region. Development regions show a significant association with all three sources of condom. 36.5 percent of men living in MWDR know government health post / center followed by 32.8 percent in CDR and the least in EDR, 26.4 percent know government health post / center. On the other hand, 39.0 percent of men in CDR know pharmacy followed by WDR, 33.6 percent and the least in EDR, 20.2 percent. 19.2 percent of men in WDR know about the shops followed by EDR, 18.6 percent and the least in MWDR, 8.5 percent. The data on knowledge of source of condom shows that government health post/ center is more popular in western Nepal and pharmacy and shops are popular in Eastern Nepal in 2001. Among men, 20.5 percent living in MWDR do not know source of condom followed by men, 18.1 percent living in EDR and the least 10.1 percent men living in EDR do not know the source of condom in Nepal.

Table 2.5: Percent of men who know the three main sources of condoms by background characteristic, 2001.

Characteristics	Knowledge of source			
	Government health post / center	Pharmacy	Shops	Do not know the sources
Age				
15-19	28.6(20)	35.7(25)	20.0(14)	1.4(1)
20-29	32.7(204)	32.7(204)	14.6(91)	5.9(37)
30-39	28.6(192)	29.5(198)	14.6(98)	10.7(72)
40+	31.1(278)	28.2(252)	16.2(145)	25.8(231)
Chi square	2.8	4.2	2.3	141.7**
Edu. attainment				
No education	31.1(264)	24.0(203)	13.2(112)	31.6(267)
Primary	34.2(231)	35.1(236)	17.5(118)	9.7(66)
Some Secondary	31.3(142)	36.6(166)	17.2(78)	1.3(6)
SLC and above	20.1(57)	25.8(74)	13.9(40)	0.6(2)
Chi Square	20.6**	40.7**	8.4	315.2**
Occupation				
Agriculture	35.0(511)	29.3(428)	14.9(217)	18.2(266)
Non-agriculture	22.8(182)	31.5(251)	16.4(131)	9.4(75)
Chi Square	35.9**	1.1	1.0	31.2**
Mass media index				
None	30.3(193)	23.6(150)	13.2(84)	33.8(215)
Any one	36.1(312)	31.9(276)	14.9(129)	12.6(109)
Any two	29.1(118)	35.7(145)	19.5(79)	3.4(14)
All three	20.1(71)	30.6(108)	15.9(56)	0.6(2)
Chi square	31.0**	20.4**	7.7	279.6**
Spousal communication				
Never	32.9(356)	29.9(324)	15.4(167)	23.3(252)
Once or twice	30.6(210)	30.9(212)	16.2(111)	7.7(53)
More	24.6(104)	29.3(124)	14.7(62)	2.6(11)
Chi Square	9.9**	0.3	0.5	141.9**
Recent sexual activity				
Active in last 4 weeks	29.8 (584)	30.4(558)	15.2(280)	13.4(247)
No active in this period	34.5 (146)	28.6(121)	16.1(68)	22.2(94)
Chi Square	3.5	0.5	0.2	20.6**
Residence				
Urban	10.2(31)	42.1(128)	26.0(79)	6.9(21)
Rural	33.9(663)	22.8(551)	13.8(269)	16.4(320)
Chi Square	69.4**	24.3**	30.2**	18.4**
Eco. regions				
Mountain	45.0(138)	19.6(91)	12.7(39)	16.6(51)
Hill	32.8(260)	27.6(221)	14.0(111)	12.5(99)
Terai	25.5(296)	31.6(367)	17.1(198)	16.5(191)
Chi Square	45.8**	3.1	5.4*	6.4*
Dev. regions				
EDR	26.4(1401)	20.2(115)	18.6(106)	18.1(103)

CDR	32.8(207)	39.2(248)	15.8(100)	13.0(82)
WDR	30.5(109)	33.6(131)	19.2(75)	14.9(58)
MWDR	36.5(107)	22.5(66)	8.5(25)	20.5(60)
FWDR	32.3(121)	31.7(11)	11.2(42)	10.1(38)
Chi Square	16.5*	62.6**	24.6*	20.0**

Notes:

1. The sum of percent is not equal to 100 due to percent in terms of total of each category.
2. The figures in parenthesis denote the total number cases.
3. ** = $P < 1\%$, * = $p < 5\%$
4. In case of column only the positive responses have given. But the Chi square has been conducted by using both responses. The negative response have not shown in the table.

Source: NDHS 2001

2.5 Ever use of condom

Data on ever use of contraception has special importance because it reveals the cumulative success of the program promoting the use of family planning among couples. Data on ever use of condom gives the number of persons using the condoms at least once. Table 2.6 shows the percent of men who have ever used condom by their characteristics, 2001.

Table 2.6: Percent of men showing ever use of condom by characteristics, 2001

Characteristic	Percent
Age	
15-19	38.6(27)
20-29	46.8(290)
30-39	42.5(242)
40+	24.6(207)
Chi Square	89.7**
Edu. attainment	
No education	20.4(161)
Primary	34.2(228)
Some secondary	49.2(223)
SLC and above	68.1(194)
Chi Square	252.4**
Occupation	
Agricultural	30.4(427)
Non- agricultural	48.0(379)
Chi square	66.5**
Mass media index	
None	19.2(111)
Any one	33.5(287)
Any two	46.1(187)
All three	62.6(221)
Chi square	197.2**

Sexual communication	
Never	25.3(260)
Once or twice	43.3(296)
More	57.0(241)
Chi Square	144.0**
Smoke cigarettes	
Yes	32.8(354)
No	40.5(452)
Chi Square	14.1**
Drink alcohol	
Yes	40.2(623)
No	28.5(183)
Chi Square	26.8**
Recent sexual activity	
Active in last 4 weeks	39.4(706)
Not active in last 4 weeks	25.0(100)
Chi Square	29.0**
Residence	
Rural	35.1(664)
Urban	47.0(142)
Chi Square	15.9**
Eco. regions	
Mountain	26.4(78)
Hill	38.8(300)
Terai	38.0(428)
Chi Square	16.0*
Dev. regions	
EDR	37.5(211)
CDR	33.3(205)
WDR	35.0(128)
MWDR	38.0(106)
FWDR	41.9(156)
Chi Square	8.3**

Notes:

1. The sum of percent is not equal to 100 due to percent in terms of total of each category.
2. The figures in parenthesis denote the total number of cases
3. ** = $P < 1\%$, * = $p < 5\%$
4. In case of column only the positive responses have given. But the Chi square has been conducted by using both responses. The negative responses are not shown in the table

Source: NDHS 2001

Age of men is significantly associated with ever use of condom. 46.8 percent of men at age 20-29 years report ever use of condom followed by 42.5 percent of men at age 30-39 years and the least 24.6 percent of men at age 40 and over report ever use of condom. This is almost universal because the frequency of sexual intercourse among young men is higher than men at older ages (*Brown, 1980*). Educational

attainment of men shows a positive association with ever use of condom. Men who have attained higher education show higher use of condom than their less educated counterparts. Higher proportion of men, 68.1 percent who have attained SLC and above education report ever use of condom than less educated men. 49.2 percent of men who have attained some secondary education followed by 34.2 percent of men having primary education and the least 20.4 percent of uneducated men report ever use of condom. Occupation is a strong predictor of ever use of condom. 48.0 percent of men working in non-agricultural sector report ever use of condom than 30.4 percent of men working in agricultural sector.

Mass media exposure shows a high degree of association with ever use of condom. The analysis shows that more exposure to mass media leads to higher ever use of condom. A higher proportion of men, 62.6 percent who are exposed to all three media are likely to report ever use of condom followed by 46.1 percent of men exposed to any two mass media and 33.5 percent of men exposed to any one mass media. However, a small proportion of men, 19.2 percent report ever use of condom who are exposed to no mass media. Spousal communication is positively associated with ever use of condom. As in mass media, more discussion about family planning with their partner leads to higher ever use of condom. Among men, 57.0 percent who discuss more than twice about family planning with their partner report ever use of condom followed by 43.3 percent who discuss once or twice and the least 25.3 percent who never discuss about family planning with their partner. Smoking cigarettes and drinking alcohol are also significantly associated with ever use of condom. 40.5 percent of men who do not smoke cigarettes report ever use of condom, which is higher than 32.8 percent of men who smoke cigarettes. 40.2 percent of men who ever used alcohol report ever use of condom and 28.5 percent of men who do not drink alcohol ever use condom. A statistically significant association exists between recent sexual activities and ever use of condom. 39.4 percent men who were sexually active in the last 4 weeks report ever use of condom while only 25.0 percent men who were not sexually active in the last four weeks report ever use of condom.

All the geographic characteristics show a significant variation in ever use of condom in Nepal. Ever use of condom is lower for men residing in rural areas than in urban, which is almost universal in most of the developing countries (*Robert 2000*). This is equally applicable in Nepal. Lower proportion of men, 35.1 percent living in rural areas report ever use of condom than their urban counterparts, 47.0 percent.

Residence shows a strong association with the ever use of condom as shown by Chi square test. 38.8 percent of men living in Hill region report ever use of condom followed by 38.0 percent of men living in Terai region, and the least 26.4 percent of men in Mountain region report ever use of condom. There is a statistically significant association between ecological regions and ever use of condom among men. A high degree of association has been found between the development regions and ever use of condom. 41.9 percent of men living in FWDR report ever use of condom followed by 38.0 percent in MWDR and the least 33.3 percent in CDR report ever use of condom. However, FWDR is the second least developed region than other regions although ever use of condom is high. As mentioned this is because of migration of men from this region to other regions in search for employment and better educational attainment

2.6 Current use of condom

Current use of contraceptives gives the proportion of currently married men and women who reported the use of contraceptives at the time of the survey. NDHS 2001 collected information on current use of condom based on sample of currently married women and men. Over 40 years (1976-2001), there is a substantial increase in current use of contraceptives in Nepal. Information on current use of condom for men was also collected in NDHS 2001. Current use of condom is an indicator as the success of condom promotion program. On the other hand, it helps to formulate the policies for future programs regarding condom.

2.6.1 Trends in current use of condom

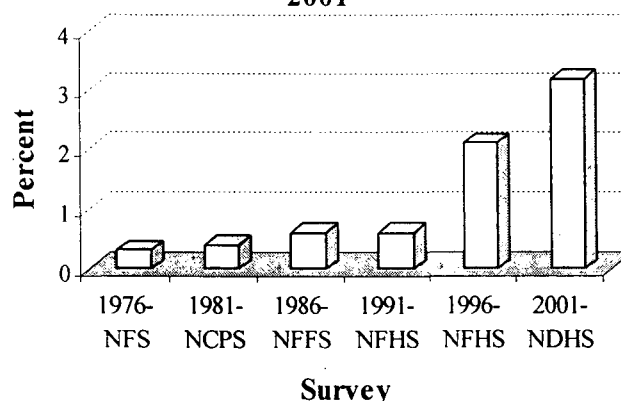
We have used the data on women's reporting of current use of condom to show the trends in current use of condom because no information is available for men before 2001. Over the period of 25 years, there is a significant transformation in the level of current use of condom among the currently married women in Nepal. The overall level of current use of condom in 2001 is almost ten times than that in 1976, which is a substantial improvement. On the other hand, the current use of condom increased more than three times between 1991 and 1996 and two times between 1996 and 2001, which is a extremely high growth as compared to 1976, 1981 and 1986. Table 2.7 and fig 2.2 show the trends in current use of condom among currently married women during 1976 to 2001 in Nepal.

Table 2.7: Trend in current use of condom, 1976 to 2001

Survey	Percentage
1976-NFS	0.3
1981-NCPS	0.4
1986- NFFS	0.6
1991-NFHS	0.6
1996-NFHS	2.1
2001-NDHS	3.2

Source: NFHS 1996, NDHS 2001

: Ministry of Health (1993) and MOPE (2002)

Fig 2.2: Trend in current use of condom in Nepal, 1976-2001

A chi square test has been used to understand the association between the variables as was shown earlier. We discuss the association for which Chi-square is statistically significant in table 2.8. Age shows a strong association with current use of condom. As expected the current use of condom decreases with the increase of age. 17.1 percent of men at age 15-19 years report current use of condom than 2.2 percent of men at age 40 and over. It is well documented that educational attainment is positively associated with current use of condom (Castle, 2003). More educated men are more likely to use condom than their less-educated counterparts. Among men interviewed in 2001, 16.1 percent of higher educated men reported current use of condom and only 2.6 percent-uneducated men reported current use of condom. Educational attainment of men exhibits a strong significant association with current use of condom as shown by Chi square test. Occupation is a strong predictor of current use of condom. 9.0 percent of men, who work in non-agricultural sector, reported current use of condom than 5.0 percent of men working in agricultural sector.

A statistically significant association is observed between mass media exposure and current use of condom in Nepal. Among men, 12.1 percent of men who are exposed to at least two media are likely to report current use of condom. But a lower percent of men, 2.2 exposed to no mass media report current use of condom. Men who discuss with their partner about family planning report higher current use of condom than men who never discuss about family planning with their partner. 13.7 percent of men who discuss more about family planning with their partner report current use of condom and 2.7 percent of men who never discuss about family planning with their partner report current use of condom. Smoking cigarettes exhibits a highly significant association with ever use of condom. 8.5 percent of men, who do not smoke report current use of condom but only 5.0 percent of men who smoke cigarettes report current use of condom. Consumption of alcohol does not show any significant link with current use of condom but 6.8 percent of men who drink alcohol reported use of condom, which is higher than 5.5 percent who do not drink alcohol. Recent sexual activity emerges a significant association with current use of condom in Nepal. 7.2 percent of men who were sexually active in the last four weeks reported currently using condom than 2.1 percent of men who were not sexually active in the last four weeks.

Table 2.8: Percent of men currently using condom by Characteristics

Characteristic	Percent
Age	
15-19	17.1(12)
20-29	11.0(69)
30-39	6.5(44)
40+	2.2(20)
Chi Square	61.7**
Edu. attainment	
No education	2.6(22)
Primary	5.6(38)
Some secondary	8.6(39)
SLC and above	16.1(46)
Chi square	161.2**
Occupation	
Agriculture	5.0(73)
Non- agriculture	9.0(72)
Chi square	13.9**
Mass media index	
None	2.2(14)

Any one	5.0(43)
Any two	12.1(49)
All three	11.0(39)
Chi square	55.9**
Spousal communication	
Never	2.7(29)
Once or twice	8.4(58)
More	13.7(58)
Chi Square	65.1**
Smokes cigarettes	
Yes	4.3(48)
No	8.5(97)
Chi Square	16.6**
Drink alcohol	
Yes	6.8(108)
No	5.5(37)
Chi Square	1.3
Recent sexual activity	
Active in last 4 weeks	7.2(133)
Not active in last 4 weeks	2.8(12)
Chi Square	11.1**
Residence	
Rural	8.6(26))
Urban	6.1(119)
Chi Square test	58.9**
Eco. regions	
Mountain	2.9(9)
Hill	7.2(57)
Terai	6.8(79)
Chi Square	210.8**
Dev. regions ,	
EDR	6.0(34)
CDR	5.1(32)
WDR	6.4(25)
MWDR	6.1(18)
FWDR	9.6(36)
Chi Square	85.9**

Notes:

1. The sum of percent is not equal to 100 due to percent in terms of total of each category.
2. The figures in parenthesis denote the total number of user.
3. ** = $P < 1\%$, * = $p < 5\%$
4. In case of column only the positive responses have given. But the Chi square has been conducted by using both responses.

Source: NDHS 2001

Current use of condom is higher among men living in urban areas than their rural counterparts. 8.6 percent of men living in urban areas reported current use of condom than their rural counterparts, 6.1 percent. Residence is strongly associated

with current use of condom. 7.2 percent of men living in Hill region report current use of condom followed by 6.8 percent living in Terai region and the least in Mountain region, 2.3 percent report current use of condom. Ecological regions have emerged as a significant predictor of current use of condom. 9.6 percent of men living in FWDR report current use of condom followed by 6.4 percent in WDR and the least 5.1 percent in CDR reported current use of condom in 2001. Development regions are strongly linked with current use of condom (Table 2.7).

2.6.2 Differentials in current use of condom

Religion is also a barrier for condom use in the global context. For example, religious pressure led Zambian health officers to drop the advertisement aimed in promoting the use of condom in electronic media (Baschetti, 2003). Similarly a South African survey showed that the current use of condom among Christian was higher than Muslim by four times (Population Reports, 1999). Nepal is a multi-religious country having the dominance of Hindu religion and there is strong influence of religion on current use of condom. NDHS 2001 shows that overall 6.6 percent men are currently using condoms. Table 2.9 shows that only 42.9 percent of Muslim men are currently using condoms. On the other hand, 18.8 percent of Hindu men are currently using condom. Religion is not significantly associated with the current use of condom among men in Nepal. The sample size among religion other than Hindu is small to draw any firm conclusion.

Table 2.9: Percent of current use of condom by religion 2001

Religion	Men
Hindu	18.8(703)
Buddhist	13.8(65)
Muslim	42.9(140)
Christian	NA
Other	21.7(23)
Chi Square	6.7

Source: Same as in table 4.

2.7 UNGASS indicator of condom use at high risk

United Nations General Assembly Special Session (UNGASS) on HIV / AIDS in June 2001 in which, 189 countries participated established a declaration to commitment to a program of national and international activities to combat with HIV

/ AIDS (Slaymaker, 2004). In that session a UNGASS indicator was prescribed on condom use. This indicator is the proportion of those aged 15-24 years who had sex with other women than cohabiting partner in the last year who used a condom the last time they had sex with that partner. This indicator is also known as “Condom use at last higher risk sex”. Based on NDHS 2001, UNGASS indicator for Nepal is calculated as follows.

Table 2.10: Number of men who had sexual intercourse with non-cohabiting partner last year by age groups

Age	Intercourse with non-cohabiting partner used condom		Total
	No	Yes	
15-19	4	1	5
20-24	6	13	19
25-29	8	4	12
30-34	6	4	10
35-39	11	3	14
40-44	2	2	4
45-49	3	-	3
50-54	3	1	4
55-59	1	-	1
N	44	28	72

Source: NDHS 2001

Number of men aged 15-24 who had sex in the last year with a partner other than wife who used condom the last time

UNGASS indicator = $\frac{\text{Number of men aged 15-24 who had sex in the last year with a partner other than wife who used condom the last time}}{\text{Number of men at aged 15-24 who had sex in the last year with a partner other than wife}}$

Number of men at aged 15-24 who had sex in the last year

with

partner other than wife

$$= \frac{14}{72} = 19.4 \text{ Percent}$$

This indicator measures the proportion of men who are using condoms (or the proportion who are not). It is apparent that only 19.4 percent of men at the high risk are using condom in Nepal. The estimate of UNGASS for Benin (2001) is 34.5 percent, Tanzania (1999), 30.6 percent, Uganda (2001), 61.6 percent and Zambia (2000), 40.3 percent (Slaymaker and Basia, 2003). Compared to these African countries, the level of UNGASS indicator for Nepal is very low. Although, condom

use is clearly a key element of HIV protection, measures on condom use often appear contrary. But this measure does not tell anything whether the condoms were used properly. On the other hand, this measure does not describe the changes in size of the group who are at risk of contracting HIV / AIDS infection. The size of the risk group depends not only on condom use among the sexually active men. This indicator is to be explained cautiously (Slaymaker and Basia, 2003).

2.8 Summary of findings

From the above analysis we find that knowledge of contraception is almost universal in Nepal among men in the beginning year of 21st century. Over time, the overall knowledge of condom has improved among men. Knowledge of condom is highly significant with age, educational attainment, occupation, mass media exposure, spousal communication, recent sexual activity, residence, ecological regions and development regions. A higher percent of younger men have knowledge of condom than men at the older ages. Educational attainment is a strong predictor of knowledge of condom. Mass media and spousal communication are also strong predictors on knowledge of condom. There is a wide variation in knowledge of condom according to geographical areas.

Bivariate analysis reveals that age of men is a strong predictor for the knowledge of source of condom. Government clinics are the main sources of condom in Nepal. Generally men at younger age prefer pharmacy and shops as a main source of condom but higher proportion of men at the older ages know government health post / center better than other sources. Education is also a strong predictor of knowledge of source of condom however, higher education does not necessarily show higher knowledge of source of condom. Men working in non-agricultural sector know more about pharmacy and shops but men working in agriculture sector know government clinic. Mass media exposure and spousal communication are better associated with knowledge of pharmacy and shops than government health post / center. Rural men are more likely to know of government clinics than pharmacy and shops but urban men are more likely to know of pharmacy and shops than government sources. Men living in Hill and Terai regions know more about pharmacy and shops than men living in Mountain region. Government sources are more popular in western and pharmacy and shops are popular in eastern parts of Nepal.

Bivariate analysis shows that ever and current use of condom is higher among younger, more educated, working in non- agricultural sector, exposed to more mass media, who discuss more about family planning with their wives, living in urban areas and living in Hill region in Nepal. The use of condom among men who drink alcohol is higher than who do not, which is a contradictory result because a large number of earlier researches show the negative relationship between them. Further research is needed to verify this hypothesis. Recent sexual activity is also a strong predictor of ever and current use of condom in Nepal. Sexually active men in the last four weeks are more likely to use condom than not sexually active men in the last four weeks. Religion is also an important factor of utilization of condom; however the sample size other than Hindu religion is small to draw rigid inference. Table 2.11 gives the summary of association of predictors on response variables.

Table 2.11: Summary of association of predictors on response variables, 2001

Response	Predictors										
	Age	Edu.	Occ.	MM	SPC	SC	DA	RSA	Res.	Eco. reg	Dev. reg
Knowledge	**	**	**	**	**			**	**	**	**
Knowledge of source of condom											
<i>Govt. source</i>		**	**	**	**				**	**	**
<i>Pharmacy</i>		**		**					**		**
<i>Shops</i>									**	*	*
Ever use	**	**	**	**	**	**	**	**	**	*	**
Current use	**	**	**	**	**	**		**	**	**	**

Note: 1. Edu= Education, Occ.= Occupation, MM= Mass media, SPC= Spousal communication, SC

Smoking cigarettes, DA= Drink alcohol, RSA= Recent sexual activity, Res. = Residence

2. ** = P <1 %, * = p < 5%

Table 2.11 presents the summary results of association of predictors on response variables. We have tested hypotheses based on the summary result from bivariate analysis. Except smoking cigarettes and drinking alcohol, all the personal and geographical characteristics exhibit a highly significant link with knowledge of condom. This implies that there is a significant variation in knowledge of condom among these characteristics but smoking cigarettes and drinking alcohol do not show any consistent and predictable variation in knowledge of condom among men in Nepal.

Regarding the testing of hypothesis for knowledge of source of condom, the assumptions of null hypothesis under government health post /center are accepted for age and recent sexual activity. Age and recent sexual activity do not show significant variation in knowledge of government health post / center as a main source of condom. Null hypothesis under pharmacy for age, occupation, spousal communication, recent sexual activities and ecological regions are accepted. Correspondingly, null hypothesis under shops as a source of condom for age, education, mass media, occupation, spousal communication, and recent sexual activity are accepted.

All assumptions of null hypothesis under ever use of condom are rejected which implies that personal and geographical characteristics show a significant variation in ever use of condom. The assumption of null hypothesis under current use of condom for drinking alcohol is accepted. This indicates that drinking of alcohol does not show any consistent and predictable variation in current use of condom.

Chapter III

ANALYSIS OF UTILIZATION OF CONDOM

3.1 Introduction

We have explained in detail about the utilization of condom in the previous chapters. In this chapter an analysis of utilization of condom viz., reasons for condom use and problems with condom are analyzed with respect to personal and geographical characteristics. This chapter attempts to analyze reasons and problems associated with condoms.

In NDHS 2001, data were collected from 2261 men regarding the various aspects of condom use from ever married men aged 15-59 years. The total numbers of respondents were 2261 men. Among the respondents, 36.7 percent reported that they have heard of and using condoms, 63.3 percent reported that they have knowledge of condom but not using condom at the time of sexual intercourse and 3.0 percent reported that they have never heard about condom. The mean age at first condom use was 18.9 years.

3.2 Description of variables

The two variables that are considered as response variable are reasons for use of condom and problems with condom. One response variable called reason for condom use has five reasons listed in the data set. These reasons are: avoid pregnancy, partner insisted, avoiding STDs, avoiding AIDS and protect against diseases. In case of condom being used for avoiding pregnancy, 33.4 percent of the respondents have supported the reason while 2.2 did not. In case of use of condom due to insistence, avoiding getting AIDS, the positive response is rather small and the positive response ranges from 1.8 to 2.4 percent. However, 79.2 percent of the respondent mentioned that they use condom as it protects against diseases. As shown table 3.1 for the four reasons for using condom, avoiding pregnancy, partner insisted, avoiding STDs and AIDS, the numbers of observations that are missing are very large. 64.4 percent of respondents have been recorded in this category. The reason why 64.4 percent of the respondents are shown as missing is not clear.

The other response variable is the problem experienced due to condom. Two of the problems, inconvenient to use and diminish the pleasure have small percent of

missing data compared with the problem of difficult to put on. The category mentioning no problem also has a high missing number of observations. Here again the reason for such high missing responses is not clear. In the analysis where the missing responses are large, we have used Chi square test for understanding the relationship with background characteristics of men. For those variables where the missing responses are relatively small, we have used multivariate analysis for understanding the relationship with the background characteristics of men. That is, multivariate analysis has been conducted for protecting diseases, inconvenient to use and diminishes the men's pleasure. The results have been presented in terms of odds ratios. Wald statistics have been used to test the statistical significance of odds ratio. Those variables, which are used in second chapter, have been used as predictors in the analysis of reasons and problems with condom.

Table 3.1: Percent distribution of response variables by their categories

Response variables				
Reason for condom use	No	Yes	Do not know	N
Avoid the pregnancy	2.2(50)	33.4(755)	64.4(1456)*	2261
Partner insisted	33.2(751)	2.4(54)	64.4(1456)*	2261
Avoid getting STDs	33.3(752)	2.3(53)	64.4(1456)*	2261
Avoid getting AIDS	33.8(765)	1.8(40)	64.4(1456)*	2261
Protect against diseases	17.9(404)	79.2(1790)	2.9(67)*	2261
Problems with condom	Disagree	Agree		
Difficult to put on	26.8(672)	5.9(134)	67.3(1522)*	2261
Inconvenient to use	30.1(678)	40.0(906)	29.9(677)	2261
Diminish the men's pleasure	17.9(403)	43.8(992)	38.3(866)	2261
No problems	12.3(280)	23.3 (526)	64.4(1455)*	2261

Note: * denotes the missing observations

Source: NDHS 2001

3.3 Reasons for condom use

A Chi square test has been used to understand the association between reason for condom use and the background characteristics, which have been mentioned in the previous chapter. We discuss the association for which Chi-square is statistically significant in table 3.2.

A higher proportions of men across different characteristics report use of condom for avoiding pregnancy. The other reasons across different characteristics

have emerged to be statistically significant. Age is significantly linked to the reason for avoiding STDs. Men in the younger age report that condom is used to prevent STDs. Among men aged 15-19 years, 14.8 percent report condom is used to protect STDs. Educational attainment of men shows significant association with the reason for condom use for avoiding AIDS. 13.1 percent men who have attained education SLC and above reported that condom was used to prevent AIDS followed by 7.6 percent who have attained some secondary and the least 0.6 percent who are uneducated. Occupation of men is significantly associated with the reasons, insistence due to partner and use of condom for avoiding STDs. 4.8 and 8.5 percent of men working in non-agricultural sector reported that condom was used due to insistence of partner and avoiding AIDS. Among those who work in agricultural sector, 8.4 percent men used condom due to the insistence of partner and 4.9 percent to avoid STDs in 2001.

Mass media shows a significant link with the reason due to partner's insistence and avoiding AIDS. 12.6 percent of men who are not exposed to any media use condom due to partner's insistence. 8.0, 5.9 and 2.7 percent men reported use of condom due to insistence of partner who are exposed to any two, any three and all three mass media respectively. On the other hand 8.6 percent of men who are exposed to all three mass media use condom to avoid AIDS. Among them, 3.7, 3.5 and 3.6 percent men reported use of condom for avoiding AIDS who are exposed to any two, any one and none of the mass media respectively. Spousal communication shows a highly significant link with the

Table 3.2: Percent of men using condom by reasons and background characteristic, 2001

Characteristics	Reasons for condom use			
	Avoid getting Pregnancy	Partner insisted	Avoid STD	Avoid AIDS
Age				
15-19	88.9(24)	11.1(3)	14.8(4)	7.4(2)
20-29	91.4(265)	7.9(23)	9.3(27)	7.2(21)
30-39	95.0(267)	7.8(22)	4.3(12)	4.6(13)
40+	96.1(199)	2.9(6)	4.8(10)	1.9(4)
Chi square	6.7	6.9	10.0*	7.6
Edu. attainment				
No education	94.4(152)	8.7(14)	4.7(14)	0.6(1)
Primary	91.6(208)	8.8(20)	6.2(14)	7.0(16)
Some secondary	94.6(211)	5.4(12)	5.4(12)	7.6(17)
SLC and above	94.8(184)	4.1(8)	6.7(13)	13.1(6)

Chi Square	2.6	5.2	1.8	13.3**
Occupation				
Agricultural	94.6(404)	8.4(36)	4.9(21)	4.2(18)
Non-agricultural	92.9(351)	4.8(18)	8.5(32)	5.8(22)
Chi square	1.1	4.3*	4.1*	1.1
Mass media index				
None	93.7(104)	12.6(14)	5.4(6)	3.6(4)
Any one	94.1(270)	8.0(23)	6.6(19)	3.5(10)
Any two	93.7(175)	5.9(11)	5.3(10)	3.7(70)
All three	93.6(206)	2.7(6)	8.2(18)	8.6(19)
Chi square	0.7	12.7**	1.6	8.6*
Spousal communication				
Never	92.7(240)	10.8(28)	10.0(26)	5.8(15)
Once or twice	93.9(278)	8.1(24)	6.1(18)	4.7(14)
More	95.0(229)	0.4(1)	3.3(8)	4.1(10)
Chi Square	1.2	23.3**	9.4**	0.8
Smoke cigarettes				
No	94.7(427)	4.7(21)	5.3(24)	5.1(23)
Yes	92.7(328)	9.3(33)	8.2(29)	4.8(17)
Chi square	1.4	6.9**	2.7	0.4
Drink alcohol				
No	93.4(171)	3.3(6)	4.4(8)	4.4(8)
Yes	93.9(548)	7.7(48)	7.2(45)	5.1(32)
Chi square	.05	4.5*	1.9	0.2
Recent sexual activities				
Active in last 4 weeks	93.5(659)	6.5(46)	6.4(45)	4.8(34)
Not active in last 4 weeks	96.0(96)	8.0(8)	8.0(8)	6.0(6)
Chi square	1.0	0.3	0.4	0.3
Residence				
Urban	95.0(134)	3.5(5)	7.1(10)	0.7 (1)
Rural	93.5(621)	7.4(49)	6.5(43)	5.9 (39)
Chi Square	0.46	2.7	0.07	6.6*
Eco. regions				
Mountain	92.3(72)	1.3(1)	6.4(5)	5.0(7)
Hill	94.3(282)	4.3(13)	7.7(23)	5.7(17)
Terai	93.7(401)	9.3(40)	5.8(25)	3.7(16)
Chi Square	0.4	11.1**	0.96	4.4
Dev. regions				
EDR	94.3(199)	0.5(1)	6.2(13)	5.2(11)
CDR	93.1(190)	1.5(3)	4.9(10)	3.9(8)
WDR	93.0(119)	0.8(1)	5.5(7)	8.6(11)
MWDR	98.1(104)	0.9(1)	2.8(3)	2.8(3)
FWDR	97.1(143)	30.8(48)	12.8(20)	4.5(7)
Chi Square	5.01	179.2**	13.6**	5.2

Notes:

1. The sum of percent is not equal to 100 due to percent in terms of total population.
2. The figures in parenthesis denote the total number of user.
3. ** = $P < 1\%$, * = $p < 5\%$
4. In case of column only the positive responses have given. But the Chi square has been conducted by using both responses.

Source: NDHS 2001, NA = not available

reason that condom was used due to partner's insistence and avoiding STDs. 10.8 and 10.0 percent of men who never discussed about family planning with their partners reported condom was used due to partner's insistence and avoiding STDs respectively. However, 8.1 and 6.1 percent men who discussed family planning with their partners once or twice reported that condom use due to partner's insistence and avoiding AIDS. Smoking cigarettes is significantly associated with the reason for use of condom due to partners' insistence. 9.3 percent men who smoke cigarettes reported use of condom due to insistence of partner. Drinking alcohol shows a significant association with the reason for condom use due to partner's insistence. Among men, who drink alcohol 7.7 percent reported condom was used due to insistence of partner. Recent sexual activity does not show a significant relation with the reason for condom use.

Residence is significantly associated with the reason for avoiding AIDS. 5.9 percent men living in rural areas reported use of condom to avoid AIDS. Ecological regions show significant relation with the reason for condom use due to partner's insistence. Among men, 9.3 percent living Terai region reported condom was used due to partner's insistence and 4.3 percent men living in Hill region reported use of condom due to insistence of partner and the least, 1.3 percent men living in Mountain region reported the use of condom due to insistence of partner. However, ecological regions have a significant association with other reasons for using condom in 2001. Development regions emerge a significant link with partner's insistence and avoiding STDs. 30.8 and 12.8 percent living in FWDR reported condom was used due to partner's insistence and avoiding STDs. Men, 1.5 and 4.9 percent living in CDR reported the use of condom due to partner's insistence and avoiding STDs. However, 8.6 percent of men living in WDR reported use of condom to avoid AIDS.

The above analysis has been conducted on the basis of percent that were recorded in the survey. As the table shows the number of cases for which Chi square test was used as rather small, therefore the conclusion that have been presented above should be considered tentative in nature. We now present as mentioned above, multivariate analysis for use of condom to protect against diseases and problems with condom.

Condom protects against diseases

Having discussed the Chi square analysis, as mentioned, we now present the results of five multivariate analyses for the reason and problems with condom use. Here again those characteristics that have emerged as statistically significant have been explained. Multivariate analysis (binary logistic regression) has been conducted for the reason that use of condom protects against diseases. Table 3.3 gives the logistic regression estimates of predictors on use of condom for protection against diseases. Educational attainment of men is strongly linked with the reason that condom protects from diseases. Men attained SLC and above education have odds ratio, 9.7 times higher than uneducated men. Similarly, men who have attained some secondary education are also more likely to report that condom protects against diseases than men having no education. Odds ratio is 3.1 times higher for men who have attained some secondary education than uneducated men. Men who have completed their primary education are twice more likely to use condom to protect from diseases than men who are uneducated. As the educational level increases the odds ratio increase. Occupation of men does not show any significant relationship with reason that condom protects against diseases.

**Table3.3: Logistic regression estimates of predictors
on use of condom protects diseases, 2001**

Characteristics	Odds ratio
Age	
15-19 (r)	1
20-29	1.22
30-39	0.80
40+	0.60
Education	
No education (r)	1
Primary	2.15**
Some secondary	3.08**
SLC and over	9.72**
Occupation	
Agriculture (r)	1
Non-agriculture	1.34
Mass media	
None (r)	1
Any one	1.74**
Any two	3.49**
All three	2.27**
Spousal communication	

Never (r)	1
Once or two	1.50**
More	2.34**
Smoke cigarettes	
No (r)	1
Yes	0.87
Drink Alcohol	
No (r)	1
Yes	1.84**
Recent sexual activity	
Active in last (r)	1
No active	0.81
Residence	
Urban (r)	1
Rural	0.69
Eco. regions	
Mountain (r)	1
Hill	1.51*
Terai	0.90
Dev. regions	
EDR (r)	1
CDR	1.40
WDR	1.54*
MWDR	0.43**
FWDR	2.61**
-2 Log Likelihood	805.9
N	1790

Note: ** = P < 1 %, * = p < 5% and r = reference category

Mass media is a strong predictor of reason to use condom due to protection against diseases. Men exposed to any two mass media have odds ratio 3.5 times higher than men who are not exposed to any media. On the other hand, men exposed to all three media have a lesser odds ratio than men exposed to any two mass media but 2.3 times higher than men exposed to none of the media. Exposure to any one mass media also shows significant relationship with use of condom for protection against diseases. Spousal communication is also strongly related with the reason of condom use for protection against diseases. Men who discuss frequently about family planning with their partners have odds ratio 2.3 times higher than men who never discuss about family planning with their partners. However, men who discuss once or twice about family planning with their wives have odds ratio 1.5 times higher than men who never discuss. That is discussing family planning once or twice improves

the changes of using condom because of diseases. Drinking alcohol is significantly associated with the reason that use of condom protects against diseases. Although men who drink alcohol have odds ratio 1.8 times higher than men who do not, a large number of studies conducted show that consumption of alcohol and use of condom are inversely linked (*Tamang, 2000, Mataure et al., 2002*)(Table 3.3).

Men living in urban areas are more likely to report that condom protects against diseases than men living in rural areas. Among the ecological regions, men living in Hill region exhibit a strong relationship with the reason that condom protect against diseases. Men living in Hill region are more likely (odds ratio is 1.5 times higher) to use condom for protection against diseases than men living in Mountain region. Men living in Terai region are less likely to use condom for protection against diseases than men living in Mountain region. Men living in FWDR have odds ratio 2.6 times higher followed by WDR of 1.5 times higher than men living in EDR to use condom for diseases protection. WDR, MWDR and FWDR show a significant relation with reason that condom use protects against diseases. Having discussed the reason for condom use in Nepal, now we present the problems with condom use.

3.4 Problems with condom

Condoms are widely used to protect both pregnancy and sexually transmitted diseases. At the global level, most of the governments have spent vast sums of money in condom promotion program but the condom prevalence rate is still low in the most of developing countries. On the other hand, there arises an emerging question “why are the average observed rates both for pregnancy and STDs infection so much worse?” Limited research shows that there is lack of proper use of condom in the world but there is not sufficient evidence to clarify this argument.

Actually, the utilization of condom is surrounded by a nexus of intervening factors viz., social, cultural, economic and religious. In addition to this, little attention has been paid to the behavioral aspect of condom use such as embarrassment in obtaining the condom, inconvenient to use, problem of sensitivity and pleasure. Demographic Health Surveys conducted between 1996 and 2000 show that these intervening factors play a key role in the utilization of condom at a global level (*Lau, 2000*).

(a) Condom is difficult to put on and no problem with condom

Table 3.4 presents the binary logistic regression estimates of predictors on problems with condom by types of problems. Age, education, occupation, mass media index, recent sexual activity and residence of men do not show a significant association with the problem that use of condom is difficult to put on. Similarly, Age, education, occupation, mass media index, spousal communication, recent sexual activity, residence and ecological regions do not emerge as significant variables with there is no problem with using condom.

Table 3.4: Logistic regression of predictors on problems with condom by types of problems

Characteristics	Difficult to put on	No problem with condom
	Odds ratio	Odds ratio
Age		
15-19 (r)	1	1
20-29	0.92	0.95
30-39	1.07	0.90
40+	1.52	0.84
Education		
No education (r)	1	1
Primary	0.69	1.51
Some secondary	0.55	1.37
SLC and over	0.62	0.94
Occupation		
Agriculture (r)	1	1
Non-agriculture	1.01	1.10
Mass media index		
None (r)	1	1
Any one	1.25	0.99
Any two	0.62	1.35
All three	0.71	0.97
Spousal communication		
Never (r)	1	1
Once or twice	0.64*	0.76
More	0.11**	1.09
Smoke cigarettes		
No (r)	1	1
Yes	2.34**	0.51**
Drink alcohol		
No (r)	1	1
Yes	1.92*	0.53**
Recent sexual activity		
Active in last 4 weeks (r)	1	1
Not active in last 4 weeks	0.71	1.66

Residence		
Urban (r)	1	1
Rural	1.26	1.22
Eco. regions		
Mountain(r)	1	1
Hill	1.73	0.91
Terai	2.77**	0.92
Dev. regions		
EDR (r)		1
CDR	NA	0.45**
WDR	NA	0.85
MWDR	NA	1.38
FWDR	NA	0.08**
-2 Log Likelihood	357.5	772.3
N	134	526

Note: ** = P < 1 %, * = p < 5% and r = reference category

Spousal communication is strong predictor of the problem that use of condom is inconvenient to use. Men who discussed more than twice with their partners about family planning are less likely (odds ratio is 0.11) to reply that condom is difficult to put on than men who never discussed about family planning with their partners. Similarly, men who discussed once or twice about family planning with their partners are less likely (odds ratio is 0.6 times) to respond that condom is difficult to put on. However, spousal communication does not show any significant association with use of condom is not a problem. Smoking cigarettes is strongly linked with the problem of condom is difficult to put on and there is no problem with condom. Men who smoke cigarettes are more likely (odds ratio is 2.3 times higher) to respond that condom is difficult to put on than men who do not smoke. But men who smoke cigarettes are less likely to report that there is no problem with condom than men who do not smoke. Drinking alcohol is a significant predictor of problem that condom is difficult to put on and no problem with condom. Men who drink alcohol have higher odds (odds ratio 1.9 times higher) to report that condom is difficult to put on than men who do not. On the other hand, men who drink alcohol is less likely to report that there is no problem with condom than men who do not drink alcohol.

Geographic characteristics have mixed effect on response variables. Among ecological regions, Terai region is significantly linked with condom is difficult to put on. Men living in Terai region have odds ratio 2.8 times higher to report that condom is difficult to put on than men living Mountain region. But ecological regions do not show a significant relationship with no problem with condom. Men living in Terai and

Hill regions are less likely to report that there is no problem with condom than men living in Mountain region. Men living in FWDR are less likely to report that there is no problem with condom than men living in EDR. Men living in MWDR are more likely (odds ratio is 1.4 times higher) to report that there is no problem with condom than men living in EDR. Men living in CDR are also less likely to report that using condom is not a problem.

(b) Condom is inconvenient to use

Among 2261 men interviewed in 2001, 30.1 percent men replied that condom is not inconvenient to use, 40.0 percent agreed that condom is inconvenient to use and 29.9 percent reported do not know. Among these three categories, category, do not know has been taken as the base category for multinomial logistic regression analysis. Table 3.5 gives multinomial logistic regression of use of condom is inconvenient by responses according to their characteristics of respondents.

Table 3.5: Multinomial logistic regression of condom is inconvenient to use according to respondents characteristics, 2001

Characteristics	(Disagree /DK)	(Agree /DK)
	Odds ratio	Odds ratio
Age		
15-19 (r)	1	1
20-29	0.77	0.47*
30-39	0.59	0.43*
40+	0.67	0.49*
Edu. attainment		
No education (r)	1	1
Primary	0.90	0.88
Some secondary	0.98	0.95
SLC and over	1.11	0.74
Occupation		
Agriculture (r)	1	1
Non-agriculture	0.83	0.82
Mass media index		
None (r)	1	1
Any one	1.00	1.35
Any two	0.92	0.74
All three	0.21**	0.71
Spousal communication		
Never (r)	1	1
Once or twice	0.78	0.98
More	0.68*	1.01
Smoke cigarettes		

No (r)	1	1
Yes	1.04	0.92
Drink alcohol		
No (r)	1	1
Yes	1.15	0.93
Recent sexual activity		
Not active in the last 4 weeks (r)	1	1
Active in the last 4 weeks	1.10	1.17
Residence		
Urban (r)	1	1
Rural	0.95	0.86
Eco. regions		
Mountain (r)	1	1
Hill	0.95	0.68*
Terai	1.32	0.80
Dev. regions		
EDR (r)	1	1
CDR	1.25	1.70**
WDR	0.69*	0.88
MWDR	0.30**	0.45**
FWDR	0.53**	1.01
-2 Log likelihood	4031.08	
N	906	678

Note: ** = $P < 1\%$, * = $p < 5\%$ and r = reference category

Age, education, occupation, smoking cigarettes, drinking alcohol, recent sexual activities, residence and ecological regions do not emerge as significant variables for condom is inconvenient to use relative to do not category but education, occupation, mass media index, spousal communication, drinking alcohol, recent sexual activity and residence do not demonstrate a significant relationship with the problem that condom is inconvenient to use relative to do not know category. Men at older ages are less likely to agree that condom is inconvenient to use than men at younger ages. Mass media exhibits a strong significant relationship with the problem that condom is inconvenient to use for those who are exposed to all three mass media relative to do not know. Men exposed to all three mass media are less likely to report that condom is not inconvenient to use than men exposed to no mass media relative to do not know. Men who discuss more than twice in a year about family planning with their partners are less likely to report that condom is not inconvenient to use than men who are not exposed to any mass media. Men living in Hill region are less likely to report that condom is inconvenient to use than men living in Mountain region relative to do not know response. Hill region exhibits a significant relationship with use of

condom is inconvenient to use. Men living in FWDR and MWDR are less likely to report that use of condom is not inconvenient to use than men living in EDR relative to do not know category. FWDR and MWDR emerge, as significant variable with use of condom is not inconvenient. But men living in WDR are also less likely to report that use of condom is not inconvenient to use than men living in EDR relative to do not know response. On the other hand, men living in CDR are more likely (odds ratio is 1.7 times higher) to report that condom is inconvenient to use than men living in EDR relative to do not know response. However, men living in WDR are less likely to report that use of condom is inconvenient to use than men living in EDR relative to do not know response. EDR and CDR emerge, as strong significant variables with use of condom is inconvenient to use. But men living in FWDR are more likely to report that condom is inconvenient to use than EDR relative to do not know response. FWDR does not show any significant relationship with condom is inconvenient to use.

(c) Condom diminishes a man's sexual pleasure

As in the above case, this problem also contains three categories viz., agree, disagree and do not know. Do not know response is taken as a relative category for the both responses agree and disagree. Table 3.6 presents multinomial logistic regression of condom diminishes a man's sexual pleasure by responses according to their characteristics. Mass media index, spousal communication and development regions emerge as significant variables with problem that use of condom does not diminish a man's pleasure. On the other hand, mass media, spousal communication, residence and development regions show a significant association with the problem that condom diminishes a man's sexual pleasure.

Men exposed to all three or any two mass media are less likely to report that condom does not diminish a man's sexual pleasure than men who are not exposed to any mass media relative to do not know response. Mass media exhibits a strong and significant relationship with problem that use of condom does not diminish a man's sexual pleasure. On the other hand, men exposed to all three mass media are also less likely to respond that use of condom diminishes a man's sexual pleasure than men who have never exposed to any mass media relative to do not response. Men who discuss more than two times about family planning in a year with their partners are

less likely to report that condom does not diminish a man's sexual pleasure than men who never discussed about family planning with their partners relative to do not know. Men who discuss once or twice about family planning with their partners are also less likely to report that condom diminishes a man's sexual pleasure than men never discussed about family planning with their partners. Men living in FWDR and MWDR are less likely report that use of condom does not diminish a man's sexual pleasure than men living in EDR relative to do not know response. These two regions show a significant association with the problem that use of condom does not diminish a man's sexual pleasure. Men living in CDR are more likely to report that use of condom does not diminish a man's sexual pleasure than men living in EDR relative to do not know response. But CDR does not show a significant relationship with the problem that use of condom does not diminish a man's sexual pleasure. On the other hand, men living in MWDR and WDR are less likely to respond that use of condom diminishes a man's sexual pleasure than men living in EDR relative to do not know response.

Table 3.6: Multinomial logistic regression of condom diminishes a man's pleasure according to respondent characteristics, 2001

Characteristics	(Disagree/DK)	(Agree /DK)
	Odds ratio	Odds ratio
Age		
15-19 (r)	1	1
20-29	0.81	0.79
30-39	0.65	0.64
40+	0.62	0.68
Edu. attainment		
No education (r)	1	1
Primary	0.81	0.79
Some secondary	0.87	0.94
SLC and over	0.83	0.80
Occupation		
Agriculture (r)	1	1
Non-agriculture	0.90	0.95
Mass media index		
None (r)	1	1
Any one	0.87	0.81
Any two	0.93**	0.59**
All three	0.37**	0.53**
Spousal communication		
Never (r)	1	1
Once or twice	0.81	0.77*

More than two	0.67*	0.94
Smoke cigarettes		
No (r)	1	1
Yes	1.30	1.06
Drink alcohol		
No (r)	1	1
Yes	1.26	0.98
Recent sexual activity		
Not active in the last 4 weeks (r)	1	1
Active in the last 4 weeks	1.20	1.08
Residence		
Urban (r)	1	1
Rural	0.94	0.72*
Eco. regions		
Mountain (r)	1	1
Hill	0.94	0.97
Terai	1.30	0.98
Dev. regions		
EDR (r)	1	1
CDR	1.16	1.18
WDR	0.85	0.64**
MWDR	0.53**	0.42**
FWDR	0.50**	0.83
-2 Log likelihood	3913.2	
N	403	992

Note: ** = P < 1 %, * = p < 5% and r = reference category

3.5 Summary of findings

Table 3.7 and 3.8 present the summary of significance of test from bivariate and multivariate analysis. Bivariate analysis demonstrates that one of the main reasons for condom use is to prevent pregnancy in Nepal. Age is not found significantly associated with the reason for using condom. Men at the younger age reported that condom was used to avoid STDs and AIDS rather than for pregnancy. Age of men and use of condom for avoiding STDs are significantly associated. Higher educational attainment leads to higher use of condom to prevent from AIDS than protection of pregnancy. There is a significant association between educational attainment and use of condom for avoiding AIDS. Higher proportion of men who work in non-agricultural sector are more likely to report that condom is used due to partner's insistence and avoiding AIDS.

Mass media exposure emerges a highly significant association with the reason for condom use due to partner insistence and protects against diseases. Men who drink

alcohol are more likely to respond that condom is used due to partner's insistence and protects against diseases than men who do not drink alcohol. Men living Hill region are more aware to avoid HIV/ AIDS than men living in Mountain and Terai regions in Nepal but geographical characteristics do not show a significant influence on reason for avoiding pregnancy. Higher percent of men living in FWDR are more aware to avoid pregnancy and STDs than other regions. However higher percent of the men living in WDR are more likely to use condom for avoiding AIDS than men living in other regions.

Binary logistic regression of problems with condom has revealed that spousal communication, smoking cigarettes are strongly linked with the problem that condom is difficult to put on and the rest of the variables have mild influence on reason that condom is difficult to put on. On the other hand, smoking cigarettes, drinking alcohol and development regions show a strong influence on the problem that there is no problem with condom. Multinomial logistic regression of problems with condom reveals that mass media and development regions are strongly linked with the problem that condom is inconvenient to use and condom diminishes a man's sexual pleasure however other variables have mild effect on them. From the analysis it is apparent that spousal communication is the most important characteristics for reason for using condom and problems with condom.

Table 3.7: Summary of association of predictors on response variables by characteristics

Characteristics	Reason for condom use			
	Avoiding pregnancy	Partner insisted	Avoiding STD	Avoiding AIDS
Age			*	
Educational Attainment				**
Occupation		*	*	
Mass media exposure		**		*
Spousal Communication		**	**	
Smoke cigarettes		**		
Drink alcohol		*		
Recent sexual activity				
Residence				*
Eco. Regions		**		
Dev. Regions			**	**

Note: ** = $p < 1\%$, * = $P < 5\%$ and - = No significant

Table 3.8: Summary of binary logistic regression analysis of predictors on response variables

Characteristics	Reason for condom use	Problems with condom	
	Protects against diseases	Difficult to put on	No problems
Age			
Educational Attainment	**		
Occupation			
Mass media exposure	**		
Spousal Communication	**	**	
Smokes cigarettes		**	**
Drink alcohol	**	*	**
Recent sexual activity			
Residence			
Eco. Regions	*	*	
Dev. Regions	**		**

Note: ** = $p < 1\%$, * = $P < 5\%$

Based on the information obtained from bivariate and binary logistic regression analysis, we have tested the null hypothesis for reason and problems with condom. All the assumptions of null hypothesis under use of condom for avoiding pregnancy are accepted, which implies that there is no significant variation in avoiding pregnancy among personal and geographical characteristics. Likewise, the assumptions of null hypothesis under use of condom for avoiding AIDS are accepted for age, occupation, and spousal communication, smoking cigarettes, drinking alcohol, recent sexual activity and ecological regions. This means that these variables do not emerge as significant for the reason that condom avoids AIDS.

Correspondingly, assumption of null hypothesis under condom is difficult to put on for age, education, occupation, mass media, recent sexual activity and residence are accepted. This implies that these variables do not emerge significant variation on condom is difficult to put on. Similarly, age, education, occupation, mass media, spousal communication, recent sexual activity, residence and ecological regions have no consistent and predictable relationship with no problem with condom, which leads to the acceptance of null hypothesis.

Chapter IV

UTILIZATION OF CONDOM IN THE CONTEXT OF HIV / AIDS

4.1 Introduction

4.1.1 Global Scenario

We have analyzed in detail about level and pattern of utilization of condom and, reasons and problems with condoms in the previous chapters (second and third). As mentioned in second chapter, condom is the only contraceptive method that provides dual protection viz., protects against sexually transmitted infections including HIV / AIDS and prevents from pregnancy. Despite the HIV / AIDS pandemic, many people have been practicing risky sexual activities even when they know that condom prevents it.

HIV is a Human Immunodeficiency Virus. It infects and weakens people making them very ill and unable to fight off other infections. AIDS – Acquired Immunodeficiency Syndrome develops between 2 to 10 years after infection of HIV as a final stage (Population Reports, 2001). AIDS can transfer from blood, semen and vaginal fluid of infected person. However, more than 75.0 percent of HIV infections are transmitted through the sexual relation between men and women.

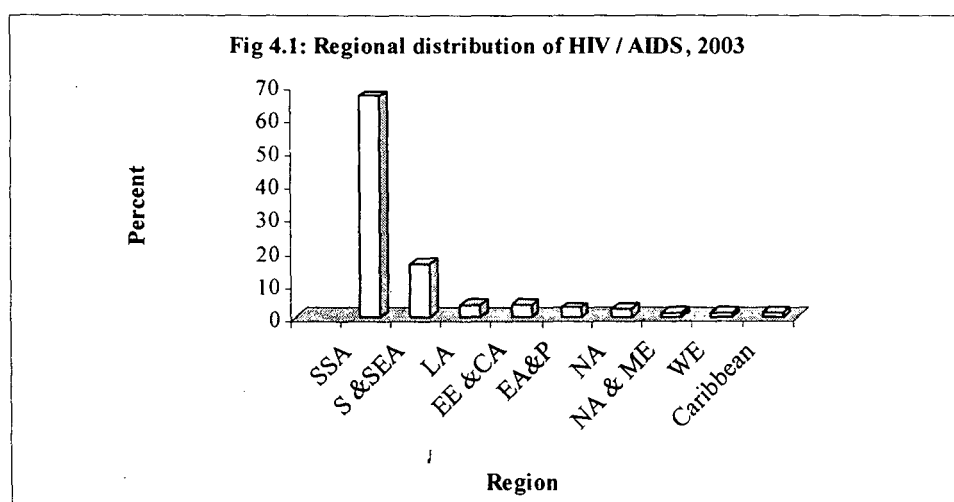
The history of identification of HIV/ AIDS goes back to 1981 for the first time in United States of America. Probably, AIDS is the first epidemic in the latest era of globalization. In the initial phase it was found in some specific region of the World but it accelerated because of advanced transportation, internal and international migration. On the other hand, globalization and urbanization are also the major factors for the transmission of HIV / AIDS worldwide (Suneetha, 2004).

According to WHO estimate in 1998 only 96,433 AIDS cases were identified in 136 countries in the world but in 1992 this number reached to 450,000 almost 39.0 percent. In 2003 more than three million died, five million new HIV infection and forty million of people have been living with HIV / AIDS in the world (WHO, 2003). HIV / AIDS is the fourth largest cause of death globally and the leading cause of death in Africa (Population Reports, 2001). In sub- Saharan Africa AIDS prevalence has remained comparatively high than other regions of the World. Table 4.1 gives the global situation of HIV / AIDS in 2003.

Table 4.1: Regional distribution of HIV / AIDS, 2003

Region	HIV / AIDS (in million)	Percent
Sub-Saharan Africa (SSA)	26.6	66.5
South and South East Asia (S &SEA)	6.4	16.0
Latin America (LA)	1.6	4.0
Eastern Europe and Central Asia (EE &CA)	1.5	3.8
East Asia and Pacific (EA&P)	1.2	3.0
North America (NA)	1.0	2.5
North Africa and Middle East (NA & ME)	0.6	1.5
Western Europe (WE)	0.6	1.5
Caribbean	0.5	1.3
Total	40.0	100.0

Source: WHO AIDS epidemic update, Dec. 2003



Apparently, the situation of HIV / AIDS in sub-Saharan Africa is alarming. Beyond sub-Saharan Africa more recent the epidemic continue to grow in China, India, Indonesia, Papua New Guinea, Vietnam, independent states of former USSR and North Africa. However the epidemic differs significantly from country to country due to socio-economic, cultural, demographic and other factors. Even in a country, there is wide variation in prevalence of infection. Half of all new HIV infections occur in people aged 15-24 years. IPPF estimate shows that around 6000 youths in a day become infected with HIV/ AIDS i. e. one youth in every 14 seconds and majority of them are women. Two third of newly infected youth aged 15-19 in sub-Saharan Africa are females (IPPF, 2002).

With the emergence of HIV /AIDS, attempts have been made to prevent the infection of HIV; however, these attempts are not completely satisfactory. Condom is

only the most effective method to prevent HIV / AIDS transmission although a large number of people do not use condom during risky sex in developing countries. In many countries of the World, utilization of condom is becoming the norm, which has helped dramatically to cut the incidence of HIV and STDs and condom promotion has been becoming successful among commercial sex workers (Norman, 2004). Demographic Health Surveys conducted between 1990 and 2000 in many African countries show that there is high prevalence of condom use with casual partners at the last high risk sex among men and women. In Bukoba district of Tanzania (Stoneburner, 2002) use of condom with casual sex partner rose from 12 percent in 1998 to 23.4 percent than in 1992. Similarly, in Lusaka, Zambia, HIV prevalence among 15-19 years old pregnant women fell from about 30.0 percent to about 15.0 percent between 1993 and 1998 with the increase in condom use from 12 percent to 39 percent (Bloom et al., 2002, Agha 2002). During 90's condom distribution increased 100 folds in many African countries but the prevalence of HIV transmission rate continued higher. It does not necessarily mean that a large consumption of condom leads to lower rate of transmission of infection because the prevalence rate also depends upon the effectiveness of usage (Population Reports, 2001).

Mathematical models of HIV transmission demonstrate that condom use in particular circumstances such as when either partner has STI symptom can be more important epidemiologically than average population rate of condom use (Bracher et al., 2004). On the other hand, some countries viz., Thailand, Senegal, Brazil and their neighbours have achieved remarkable successes in AIDS prevention by promoting condoms (Norman, 2004). When the government of Thailand implemented 100.0 percent condom program in its sex industries the condom use immediately reached to 90.0 percent in commercial sex encounter and men visiting sex workers fell by 50.0 percent. Later on, it was also found that rate of STI and prevalence of HIV declined (Norman et al., 2004). Similar experiences can be shared from Cambodia, where there was the highest HIV prevalence rate in Asia and Pacific region. Uganda was one of the first countries to be devastated by AIDS and also the sub-Saharan Africa to reverse its own epidemic. The government of Uganda paid more attention to reduce the sexual partners and encouraged to use condom consistently (Kilian et al., 1999). It appears that these successes show the reduction in HIV infection with rise in use of condoms.

4.1.2 Nepalese Context

The first case of HIV / AIDS was identified in 1988 in Nepal. Comparatively, the existing statistics does not show the high rate of transmission of HIV among the general population but potentiality of infection rate is large among the high-risk group such as female sex workers, clients of sex workers, and low level of condom use and pockets of intravenous drug users. On the other hand, poverty, gender inequality, low level of education and literacy, denial, stigma and discrimination are the major contributing factors to HIV / AIDS vulnerability in Nepal. Situational analysis of HIV /AIDS in Nepal shows young people, mobile population, female sex workers, men who have sex with men and injecting drugs users are the most vulnerable to HIV / AIDS in Nepal.

Recent behavioral data indicate the increasing vulnerability of young people to HIV / AIDS as a generational and cultural gap between emerging new values, knowledge and independence on the side of adolescents, and the values, reference point and norm on the side of older generation is widening (NCASC, 2003). A KAP survey among 1400 young people in seven different districts of Nepal shows that Nepalese adolescents are highly aware about HIV risk, although this consciousness does not necessarily translate into safe sexual behavior. Among the respondents, 92.0 percent had knowledge of AIDS, only 74.0 percent of teenagers knew that condom protects from AIDS. Almost two third of respondents reported, AIDS is protected if sex with commercial sex worker is avoided. One in five boys and one in ten girls reported that a sexual experience. 65.0 percent boys reported that they used condom (UNAIDS, 2003).

Economic migration (internal and international) is not new phenomenon in Nepal. It is estimated that 1.5 to 2.0 million Nepali work outside the country. Estimates shows that one million Nepalese workers in India. A survey conducted in western part of the country shows that 10.0 percent of male migrants returned from Mumbai were HIV positive. Similar type of trends is observed in other districts in Western Nepal (Poudel, KC. Et al., 2001).

Female sex workers have little access to accurate information about reproductive health and AIDS. FHI, survey in 1999 among FSWs and truckers along the highway routes in the Terai region of Nepal showed that 75.0 percent of truckers had sex with sex workers and that only 70.0 percent of them used a condom at the last

sex intercourse. Survey showed that STD prevalence among truckers was 10.2 percent and HIV prevalence was 1.5 percent (FHI, 1999).

There is no long history of homosexuality in Nepal and it is not acceptable in Nepalese society. Although, a small survey have reported that the sex between men and men is relatively common in the urban areas, especially in the capital city Kathmandu in Nepal. Furthermore, it has been shown that many married men are also engaged in homosexuality, putting their partners at high risk of being infected with HIV / AIDS (Panta, 2001).

Among the high-risk group, IDU are the most vulnerable of HIV infection in Nepal. FHI survey in 1999 showed that 40.0 to 50.0 percent IDUs who had HIV infection were in Kathmandu valley. Recent research shows that the prevalence rate has increased to 68.0 percent among IDUs in Kathmandu (New Era and FHI, 2002).

Nepal behavioral surveillance survey shows that majority of client of sex workers are transport workers, industrial workers, migrant workers, police / army personnel, rikshawalas and male students (NEW ERA, 1997). On the other hand, people in Nepal have limited knowledge about HIV and STIs infection. There is no consistent official estimate of STI that exists for common population and the poor data collection makes these estimates unsure.

As of May 31, 1998 only 1,067 persons were identified as HIV positive of which 209 were full – blown cases of AIDS (National Center for AIDS and STD Control-NCASC). However in December 2002, it was reported that 2,598 persons had HIV positive and 624 persons had AIDS cases. On the other hand, it was estimated that almost 60,018 people were living with HIV/ AIDS by the end of 2002. Most of the infected individuals, 56.03 percent of all cases were in the age group 20-29 years and were likely to have been infected due to heterosexual relationship. The reported cases are so small as compared to the estimated value because the identified cases were based on the blood sample collected from different hospitals of the country and limited number of persons have been tested for HIV / AIDS in Nepal (UNAIDS, 2002). As we have explained earlier the prevalence rate of condom is still very low in Nepal as compared to other developing countries due to various factors. Still the overall prevalence rate of condom is 3.2 percent in 2001 but it was only 0.3 percent in 1976.

4.2 Description of variables

This chapter primarily focuses on the study of knowledge of AIDS and the utilization of condom in the context of HIV / AIDS in Nepal and provides the information on knowledge of AIDS and ways to avoid the AIDS for men. The three variables that are considered as response variables are knowledge of AIDS, ways to avoid AIDS and lack of knowledge of AIDS. Table 4.2 gives the percent distribution ever heard of AIDS, ways to avoid AIDS and DK the ways to avoid AIDS. In case of knowledge 72.4 percent men know about AIDS and 27.6 percent men do not know about AIDS. The other response variable ways to avoid AIDS has four ways to avoid AIDS listed in the data set. These ways are: use condom during sex, only one sex partner, avoid sex with someone who has AIDS and avoid partner who has many partners. In case of condom use for avoiding AIDS, 51.9 percent supported and 44.6 percent did not. 20.1 percent approved and 76.4 did not approve that sex should be avoided with someone who has AIDS to protect from AIDS and 27.1 percent supported and 72.9 did not support that sex should be avoided with whom have many partners to protect from AIDS. These all four ways of avoiding AIDS are programmatically important for protection of AIDS. The last response variable do not know to avoid AIDS also contains two categories yes (33.2 percent) and no (66.8 percent). For the predictors we have used those that have been presented in second chapter.

Table 4.2: Percent distribution of ever heard of AIDS, ways to avoid AIDS and do not know the ways to avoid AIDS, 2001

Response Variable	Yes	No	DK	N
Ever heard of AIDS	72.4(1636)	27.6(625)	-	2261
Ways to avoid AIDS	67.0(1516)	5.4(120)	27.6(625)	2261
Use condoms during sex	51.9(1173)	44.6(1009)	3.2(73)	2261
Only one sex partner	28.2(638)	68.3(1544)	3.5(79)	2261
Avoid sex with someone who has AIDS	20.1 (455)	76.4 (1727)	3.5(79)	2261
Avoid partner, who have many partners	23.6 (534)	72.9 (1648)	3.5(79)	2261
DK ways to avoid AIDS	33.2(750)	66.8(1511)	-	2261

Source NDHS 2001, DK = missing values.

Association between response and predictors has been evaluated by using binary logistic regression based on odds ratios. Wald statistics has been used to test the significance of odds ratio. We now explain about the knowledge of AIDS among

men in Nepal. We discuss the association for which odds ratio is statistically significant.

4.3 Knowledge of AIDS

The overall knowledge of AIDS among men was 72.4 percent in 2001. The knowledge of AIDS among men varies by their background characteristics. Table 4.3 gives the logistic regression estimates of predictors on knowledge of AIDS. Age, education, occupation and mass media index show a significant relationship with knowledge of AIDS among men in Nepal.

Table 4.3: Logistic regression estimates of predictors on knowledge of AIDS, 2001

Characteristics	Odds ratio
Age	
15-19 (r)	1
20-29	0.61
30-39	0.37*
40+	0.22**
Edu. attainment	
No education (r)	1
Primary	2.83**
Some secondary	4.17**
SLC and over	8.36**
Occupation	
Agriculture (r)	1
Non-agriculture	1.49**
Mass media index	
None (r)	1
Any one	4.03**
Any two	4.08**
All three	9.12**
Smoking cigarettes	
No (r)	1
Yes	0.72
Drink alcohol	
No (r)	1
Yes	2.93
Recent sexual activity	
Active in the last four weeks (r)	1
Not active in the last four weeks	0.73
Residence	
Urban (r)	1
Rural	0.34
Eco. regions	

Mountain (r)	1
Hill	1.20
Terai	0.64
Dev. regions	
EDR (r)	1
CDR	1.93
WDR	2.05
MWDR	1.26
FWDR	0.85
-2 Log likelihood	594.3
N	1636

Note: ** = P < 1 %, * = p < 5 %, r = reference category

Age of men (30-39 and 40+ years) shows a significant relationship with knowledge of AIDS. Men at younger ages are more likely to report knowledge of AIDS than men at older age. Men at age 40 and over are less likely to have the knowledge of AIDS than men at age 15-19 years. Similarly, men at age 30-39 years are also less likely to know about AIDS than men at age 15-19 years. Men having attained SLC and above education have odds ratio 8.4 times higher than uneducated men. Likewise men having attained some secondary education have odds ratio 4.2 times higher than uneducated men. The odds ratio is 2.8 times higher than uneducated men who have attained primary education than uneducated men. This implies that higher educational attainment of men leads to higher knowledge of AIDS. Occupation of men is also a significant predictor of knowledge of AIDS. Men working in non-agricultural sector have odds ratio 1.5 times higher than men working in agricultural sector.

Men exposed to all three mass media have odds ratios 9.1 times higher than men who are not exposed to any media. Likewise, the odds ratio for men exposed to any two and one mass media is 4.1 and 4.0 times higher than men exposed to none of the media respectively. There exists a highly statistically significant relationship between mass media and knowledge of AIDS. Rest of the variables do not show a significant association with the knowledge of AIDS. Having discussed the knowledge of AIDS, we present the ways of avoiding AIDS.

4.4 Ways to avoid HIV / AIDS

A large number of questions were asked about ways to avoid AIDS among men in NDHS 2001. In fact this survey has collected substantial information on

AIDS. However some of the responses have small sample size and they are not amenable for further statistical analysis. Among these variables four, which are explained earlier in table 4.2 have been used as response variables. Table 4.4 displays the logistic regression estimates of predictors on ways to avoid AIDS.

Age of men does not show a significant relationship with the ways of avoiding AIDS. Men having attained SLC and above education, are 6.5 time more likely to know the ways about avoiding AIDS than men having no education. Similarly men having some secondary education are 4.2 times likely to know the ways of avoiding AIDS than uneducated men. Likewise men having attained primary education have odds ratio 1.6 times higher than uneducated men. Higher education and some secondary education of men exhibit a highly significant association with ways to avoid AIDS but primary education emerges as a significant variable.

Table 4.4: Logistic regression estimates of predictors on knowledge of avoiding AIDS, 2001

Characteristic	Odds Ratio
Age	
15-19 (r)	1
20-29	2.63
30-39	1.48
40+	0.91
Edu. attainment	
No education (r)	1
Primary	1.58*
Some secondary	4.17**
SLC and over	6.48**
Occupation	
Agriculture (r)	1
Non-agriculture	1.10
Mass media index	
None (r)	1
Any one	1.48
Any two	3.89**
All three	3.77**
Spousal communication	
No (r)	1
Yes	2.49**
Smoking cigarettes	
No(r)	1
Yes	1.06
Drink alcohol	
No	1

Yes	1.70*
Recent sexual activity	
Active in last 4 weeks (r)	1
No active in the last 4 weeks	0.98
Residence	
Urban (r)	1
Rural	0.77
Eco. regions	
Mountain (r)	1
Hill	1.43
Terai	1.25
Dev. regions	
EDR (r)	1
CDR	2.12**
WDR	1.70
MWDR	0.85
FWDR	1.42
-2 Log likelihood	685.3
N	1517

Note: ** = P < 1 %, * = p < 5 %, r = reference category

Mass media exposure exhibits a significant relationship with ways to avoid AIDS. Men exposed to at least any two media have odds ratio 3.9 times higher than men who are not exposed to any mass media. Similarly, men exposed to all three mass media have odds ratio 3.4 times higher than men who are not exposed to any mass media. Spousal communication is a highly significant variable on the ways of avoiding AIDS. Men who discuss about AIDS with their partners have, 2.5 times higher odds to know the ways of avoiding AIDS than men who do not discuss about AIDS with their partners. Drinking alcohol has significant influence on the knowledge of avoiding AIDS. Men who drink alcohol have odds ratio 1.7 times higher than men who do not drink alcohol.

Geographical variables residence and ecological regions are not significant predictors of ways of avoiding AIDS. However, among the development regions CDR emerges as highly significant variable for ways of avoiding AIDS. On the other hand, Men living in CDR have odds ratio 2.1 times higher than men living in EDR followed by WDR, which is 2.7 times higher.

Table 4.5 gives the logistic regression estimates of predictors on use of condom to avoid AIDS, Only one sex partner, avoid sex with someone who has AIDS and avoid sex with partners who have many partners. Age of men is not significantly associated with all the response variables. Educational attainment of men is highly

significant with use of condom for prevention of AIDS and avoiding many partners but educational attainment is not significantly associated with only one sex partner and avoiding sex with someone who has AIDS. For response variable, use of condom for prevention of AIDS, men who have attained some secondary education have odds ratio, 3.5 times higher than uneducated men and men having education SLC and above have odds ratio 3.3 times higher than uneducated men. Similarly, men who have attained primary education have odds ratio 1.4 times higher than uneducated men. On the other hand, men who have attained some secondary and primary education are less likely to report that sex should be avoided with partner who has many partners for prevention of AIDS. Occupation of men is significantly associated with use of condom for prevention from AIDS. Men working in non-agricultural sector have odds ratio 1.4 times higher than men working in agricultural sector. But occupation of men does not show significant relation with remaining response variables.

Mass media is strongly related with use of condom for the protection of AIDS and avoid partner who have many partners. However, mass media is not significantly linked with avoiding sex with someone who has AIDS and only one sex partner. The exception is those men who are exposed to all three media. Men exposed to all three media are likely to know ways of avoiding AIDS than men who are exposed to none of the mass media in all responses. For response variable, use of condom for protection of AIDS, men exposed to all three mass media have odds ratio 3.1 times higher than men who are not exposed to any media and men exposed to any two media have odds ratio 3.2 times higher than men who are not exposed to any media. Similarly, men exposed to at least one mass media have odds ratio 2.4 times higher than men who are not exposed to any mass media. On the other hand, for response variable, avoid sex with partner who has many partners, men exposed to all three mass media have odds ratio 2.1 times higher than men who are not exposed to any mass media. Spousal communication is significantly linked with use of condom for prevention of AIDS. Men who discuss with their partners about AIDS have odds ratio, 1.5 times higher than those who do not discuss. Spousal communication is not significantly related with avoiding sex with someone who has AIDS, only one sex partner and avoid partners who have many partners. Men who discuss about AIDS with their partner are more likely to report the ways of avoiding AIDS than men who do not discuss about AIDS with their partner. Drinking of alcohol is significantly

linked with use of condom for protection of AIDS and only one sex partner. Men who drink alcohol have odds ratio 1.7 times higher than men who do not drink alcohol for use of condom to protect from AIDS. On the other hand, men who drink alcohol have odds ratio 1.2 times higher than men who do not drink alcohol for only one sex partner. Recent sexual activity is significantly related to only one sex partner. Men who are sexually active in the last four weeks are more likely to know that sex with only one partner prevents from AIDS than men who are not sexually active in the last four weeks.

**Table 4.5: Logistic regression estimates of predictors
on response variables by their types, 2001**

Characteristics	Use of condom during sex	Only one sex partner	Avoid sex with someone who has AIDS	Avoid partners who have many partners
	Odds ratio	Odds ratio	Odds ratio	Odds ratio
Age				
15-19 (r)	1	1	1	1
20-29	1.30	1.5	1.58	0.84
30-39	0.89	1.7	1.29	0.99
40+	0.69	1.9	1.51	0.99
Edu. attainment				
No education (r)	1	1	1	1
Primary	1.43*	0.96	1.14	0.69**
Some secondary	3.45**	0.84	1.01	0.65**
SLC and over	3.34**	0.97	1.16	0.73
Occupation				
Agriculture (r)	1	1	1	1
Non-agriculture	1.38*	0.86	1.00	1.09
Mass media				
None (r)	1	1	1	1
Any one	2.36**	1.4	1.32	1.17
Any two	3.19**	1.2	1.01	1.02
All three	3.13**	1.6	1.44	2.13**
Spousal communication				
No (r)	1	1	1	1
Yes	1.48**	1	1.94	1.84
Smoke cigarettes				
No (r)	1	1	1	1
Yes	1.01	1.1	1.08	1.19
Drink alcohol				
No (r)	1	1	1	1
Yes	1.66**	1.2**	1.09	0.94
Recent sexual activity				
Active in the last four	1	1	1	1

weeks (r)				
Not active in the last four weeks	0.81	0.85*	0.98	0.88
Residence				
Urban (r)	1	1	1	1
Rural	0.93	0.94**	1.76**	1.06
Eco. regions				
Mountain (r)	1	1	1	1
Hill	1.77**	0.83**	0.86	0.49**
Terai	1.67**	2.1**	0.72	0.59**
Dev. regions				
EDR (r)	1	1	1	1
CDR	0.72*	3.0**	1.20	2.06**
WDR	1.64**	1.75**	2.72**	1.81**
MWDR	2.17**	0.64**	1.65**	2.37**
FWDR	3.04**	3.31**	3.47**	9.37**
-2 Log likelihood	1599.0	1240.5	1913.3	1912.9
N	1173	638	455	534

Note: ** = P < 1 %, * = p < 5 %, r = reference category

Residence shows a significant relation with sex with only one partner and avoidance of sex with someone who has AIDS. Men living in rural areas are less likely to report that sex with only one partner prevents from AIDS than their urban counterparts. On the other hand, residence emerges as a highly significant predictor of avoiding sex with someone who has AIDS for prevention of AIDS. Men living in rural areas have odds ratio 1.8 times higher than men living in urban area. Ecological regions exhibit a strong relation with use of condom for prevention from AIDS, only one sex partner and avoid sex with partner who has many partners. Men living in Hill region are more likely to know use of condom prevents from AIDS than men living in Mountain region. Men living in Hill region have odds ratios, 1.8 followed by 1.7 times higher in Terai region than men living in Mountain region. On the other hand, men living in Terai region have odds ratio 2.1 times higher than men living in Mountain region but men living in Hill region are less likely to report that sex with only one partner prevents from AIDS. In the same way, men living in Hill and Terai regions are less likely to report that avoidance of partner who has many partners can prevent from AIDS than men living in Mountain region. Development regions exhibit a strong relation with the ways of avoiding AIDS. Men living in FWDR are more likely to know that use of condom prevents from AIDS. Men living in FWDR have odds ratio 3.1 times higher than men living in EDR. Similarly, men living in MWDR

have odds ratio 2.2 followed by WDR 1.6 times higher than men living in EDR. However, men living in CDR are less likely to report that condom use prevents from AIDS than men living in EDR. Development region is also significant variable for only one sex partner for prevention of AIDS. Men living in FWDR have odds ratio 3.3 times higher than men living in EDR. Men living in CDR have odds ratio 3.0 times higher followed by, 1.8 times higher in WDR than men living in EDR. But men living in MWDR are less likely to report that only one sex partner for prevention of AIDS. There is a statistically significant relationship between development regions and avoid sex with someone who has AIDS for prevention of AIDS. Men living in FWDR have odds ratio 3.5 times followed by 2.7 times in WDR and 1.7 times in MWDR higher than men living EDR. CDR does not show a significant relationship with avoid sex with someone who has AIDS. A statistically significant relationship is observed between development regions and avoid partner who has many partners for prevention of AIDS. Men living in FWDR have odds ratio 9.4 times higher than men living in EDR followed by 2.4 in MWDR, 2.1 in CDR and 1.8 in WDR than men living in EDR. Having discussed the knowledge of ways of avoiding AIDS, now we present lack of knowledge of avoiding AIDS in Nepal.

4.5 Lack of knowledge of avoiding AIDS

A large proportion of men do not know how to avoid HIV / AIDS in Nepal. Almost 33.0 percent of men know about AIDS but do not know how to avoid HIV/ AIDS in 2001. Table 4.6 furnishes the logistic regression estimates of predictors on the lack of knowledge of avoiding AIDS. Age of men 20-29 years is significantly related with the lack of knowledge of AIDS. Men at age 20-29 years is less likely to report lack of knowledge of AIDS than men at age 15-19 years. Men at the older age especially 40 and over are more likely to report that they do not know ways to avoid AIDS than men at younger age 15-19. But age 40 and over do not show significant relation with lack of knowledge of condom. No education and primary education are strong predictors of lack of knowledge of AIDS. Men having no education have odds ratio 6.9 times higher than men having attained SLC and above education. Similarly, men having attained primary education have odds ratio 4.6 times higher than men having attained SLC and above education.

Mass media (exposed to none and exposed to any one) are significantly related with the lack of knowledge of AIDS. Men who are not exposed to the mass media are more likely to report lack of knowledge of avoiding AIDS than men exposed to mass media. Men exposed to none mass media have odds ratio 3.8 times higher than men exposed to all three mass media. Similarly, men exposed to one mass media have odds ratio 2.9 times higher than men exposed to all three mass media. Men who do not discuss about AIDS with their partners have higher probability to report the ignorance of avoiding AIDS than men who discuss more about AIDS with their partners. Men who do not discuss about AIDS with partner have odds ratio 2.7 times higher than men who discuss about AIDS with partner. A statistically significant relationship is observed between spousal communication and lack of knowledge of condom in Nepal. Smoking cigarettes, drinking alcohol and recent sexual activity have mild effect on lack of knowledge of condom. EDR and CDR show a significant relationship with lack of knowledge of condom. Men living in EDR have odds ratio 1.6 times higher than men living in FWDR. But men living in CDR are less likely to report the lack of knowledge of AIDS than men living in FWDR. Other development regions have mild effect on lack of knowledge of AIDS. Having discussed about lack of knowledge of AIDS, we present the use of condom in the context of HIV / AIDS in Nepal.

**Table 4.6: Logistic regression estimates of
Predictors on lack of knowledge of AIDS, 2001**

Characteristics	Odds ratio
Age	
15-19 (r)	1
20-29	0.36*
30-39	0.72
40+	1.01
Education	
No education	6.90**
Primary	4.60**
Some secondary	1.58
SLC and over (r)	1
Occupation	
Agriculture	1.2
Non-agriculture (r)	1
Mass media index	
None	3.82**

Any one	2.85*
Any two	1.07
All three (r)	1
Spousal communication	
No	2.70**
Yes (r)	1
Smoking cigarettes	
No	1.02
Yes (r)	1
Drink alcohol	
No	1.69
Yes (r)	1
Recent sexual activity	
Active in the last four weeks (r)	1
Not active in the last four weeks	0.84
Residence	
Urban (r)	1
Rural	1.8
Eco. regions	
Mountain (r)	1
Hill	0.72
Terai	0.89
Dev. regions	
EDR	1.62*
CDR	0.75**
WDR	0.87
MWDR	1.74
FWDR (r)	1
- 2 Log likelihood	705.5
N	750

Note: ** = P < 1 %, * = p < 5 %, r = reference category

4.6 Analysis of condom use in the context of HIV / AIDS

Figure 4.2 shows the utilization of condom in the context of HIV / AIDS in Nepal. Among men interviewed in 2001, 74.2 percent men reported to know about AIDS and only 25.8 percent men did not have knowledge of AIDS. Men who know AIDS, 45.1 percent are ever using condom and 54.5 percent are not using condom. Table 4.7 gives the logistic regression estimates of predictors on those who know about AIDS and using condom.

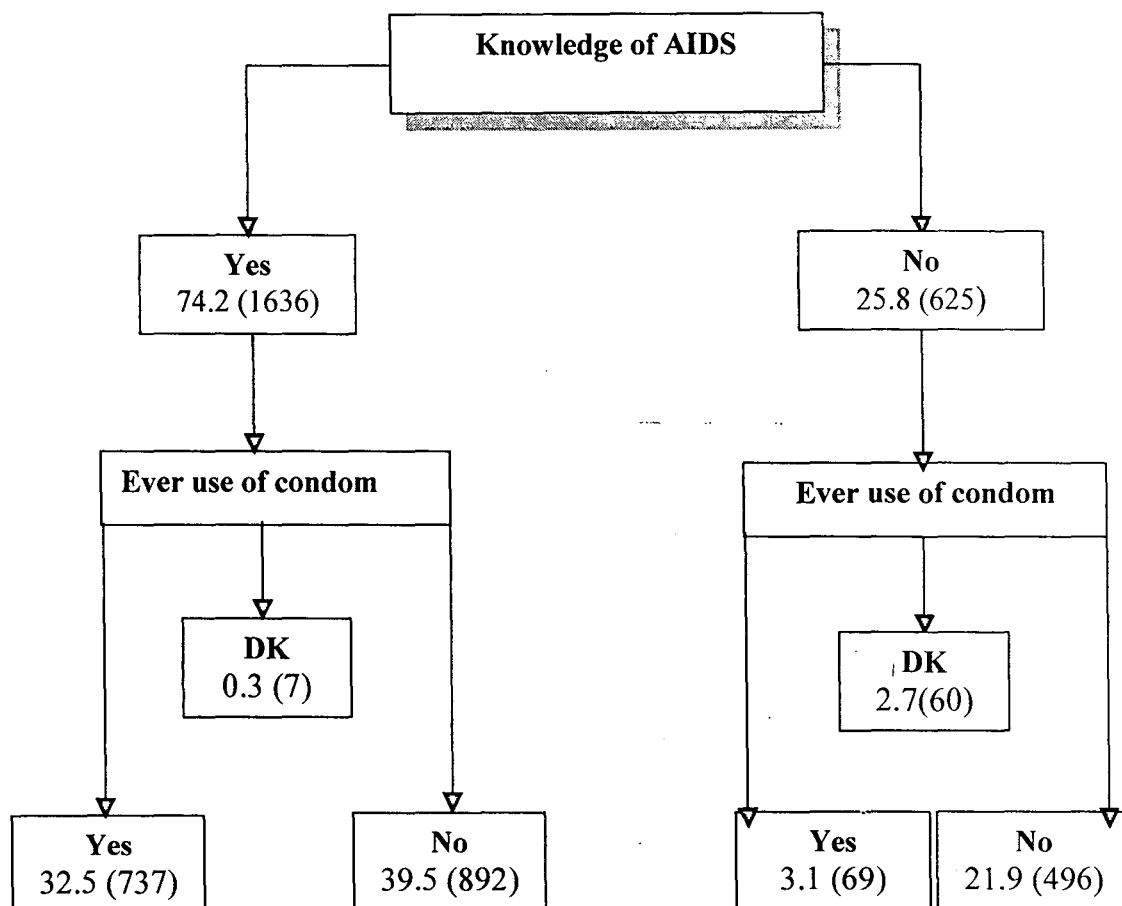
Age of men is not significantly associated with ever use of condom. Some secondary and higher educational attainment of men is strongly related with use of condom. Higher educational attainment of men leads to more use of condom than men

who have not attained education. Men having attained SLC and above education have odds ratio 2.7 times higher than men having attained no education. Similarly men who have acquired some secondary education have odds ratio 1.5 times higher than uneducated men. A statistically significant relation is observed between occupation and use of condom. Men working in non-agricultural sector have higher likelihood to use condom than men working in agricultural sector. Men working in non-agricultural sectors have odds ratio 1.4 times higher than men working in agricultural sector.

Mass media exposure has statistically significant relation with ever use of condom. Men exposed to all three media have higher probability to use condom than men who are exposed to no mass media. Men having exposed to all three mass media have odds ratio 2.5 times higher than men exposed to no mass media. Likewise men exposed to two and one of the media have odds ratio 1.7 times followed by 1.4 times exposed to one mass media than men who are not exposed to any mass media. A statistically significant relationship exists between spousal communications and ever use of condom. Men who discuss about AIDS with their partner have odds ratio, 1.5 times higher than men who do not. Drinking alcohol shows a strong significant relationship with ever use of condom. Men who drink alcohol have higher odds to report ever use of condom than men who do not drink. Men who drink alcohol have odds ratio 1.5 times higher to report ever use of condom than men who do not drink alcohol. This result is conflicting with earlier research reports and the reason for this is not clear. Recent sexual activity is not significantly linked with ever use of condom.

Knowledge of AIDS and ever use of condom in Nepal

Fig 4.2



Residence and ecological regions do not show significant relation with ever use of condom. WDR and MWDR show a strong significant link with ever use of condom. Men living in WDR, MWDR and FWDR have lower odds of ever using condom than men living in EDR.

Table 4.7: Logistic regression estimates of predictors on knowledge of AIDS and ever use of condom, 2001

Characteristics	Odds ratio
Age	
15-19 (r)	1
20-29	1.17
30-39	1.15
40+	0.80
Edu. attainment	
No education (r)	1

Primary	1.12
Some secondary	1.52**
SLC and over	2.74**
Occupation	
Agriculture (r)	1
Non-agriculture	1.35**
Mass media index	
None (r)	1
Any one	1.38*
Any two	1.69**
All three	2.51**
Spousal communication	
No (r)	1
Yes	1.45**
Smoking cigarettes	
No (r)	1
Yes	0.94
Drink alcohol	
No (r)	1
Yes	1.54**
Recent sexual activity	
Active in the last four weeks (r)	1
Not active in the last four weeks	0.69
Residence	
Urban	1.22
Rural (r)	1
Eco. regions	
Mountain (r)	1
Hill	1.31
Terai	1.33
Dev. regions	
EDR (r)	1
CDR	1.00
WDR	0.61**
MWDR	0.60**
FWDR	0.82
- 2 Log Likelihood	2008.8
N	737

Note: ** = P < 1 %, * = p < 5 %, r = reference category

Fig 4.3 gives current use of condom in 2001. As shown in fig 4.2, 72.4 percent men have knowledge on HIV /AIDS. Only 6.1 percent men are currently using condom who know about AIDS.

Knowledge of AIDS and current use of condom in Nepal

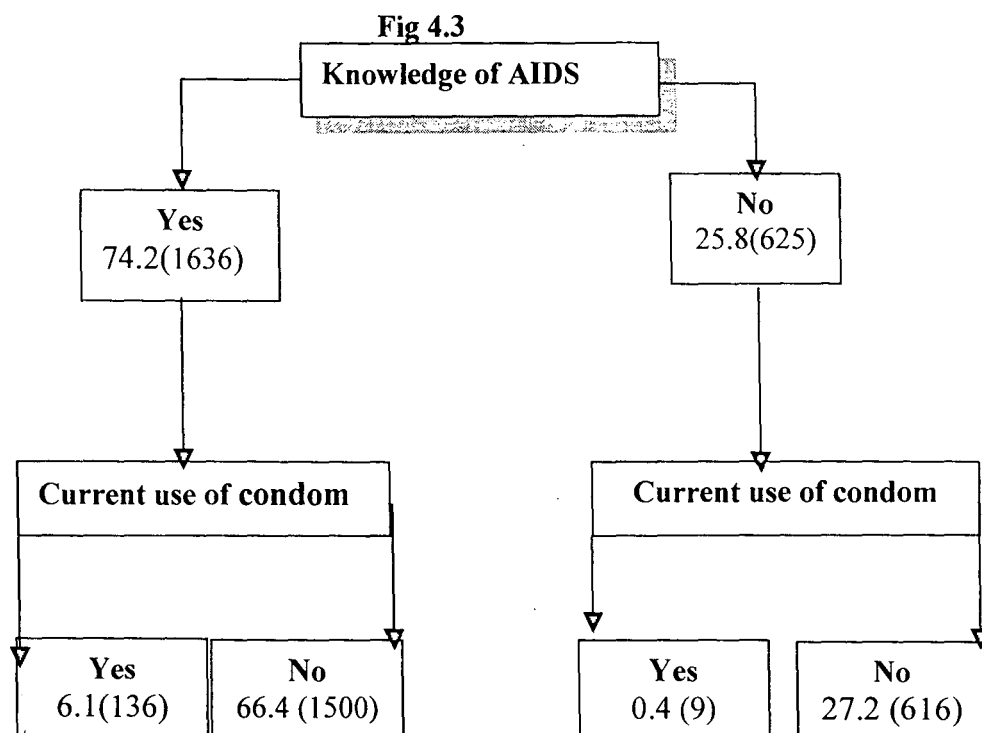


Table 4.8 gives logistic regression estimates of predictors on current use of condom who know about AIDS. Among the predictor age, education, mass media, spousal communication, smoking, recent sexual activity and residence are significantly linked with current use of condom. Men at younger age who know about AIDS are more likely to use condom than men at older ages. Men at age 40 and above are less likely to use condom than other age groups. Some secondary and SLC and above education are significantly linked with current use of condom. Men having attained SLC and above education are more likely (odds ratio, 2.1 times higher) use condom than uneducated men. Similarly, men having attained some secondary education have odds ratio 1.1 times higher than men having no education.

Likewise, men exposed to any two mass media have odds ratio 2.4 times higher than men who have not exposed to any media. Exposure to two mass media exhibits a significant relationship with current use of condom. A statistically significant relationship exists between spousal communication and current use of condom. Among men who discuss about AIDS with their partner have higher probability (odds ratio is 1.5 times) to use condom than who do not discuss with partner. Men who smoke have lower odds (0.75 times) of using condom than men who do not. Men who are not sexually active in the last 4 weeks are less likely (0.58

times) to use condom than men who are sexually active in the last 4 weeks. Men living in rural areas are less likely to report current use of condom than men living in urban areas.

Table 4.8: Logistic regression estimates of predictors on Men who have knowledge of AIDS and currently using condom, 2001

Characteristics	Odds ratio
Age	
15-19 (r)	1
20-29	0.49*
30-39	0.33**
40+	0.17**
Edu. attainment	
No education (r)	1
Primary	0.92
Some secondary	1.03*
SLC and over	2.10**
Mass media index	
None (r)	1
Any one	1.27
Any two	2.38**
All three	1.68
Spousal communication	
No (r)	1
Yes	1.49*
Smoking cigarettes	
No (r)	1
Yes	0.75*
Drink alcohol	
No (r)	1
Yes	1.37
Recent sexual activity	
Active in the last 4 weeks (r)	1
Not active in the last 4 weeks	0.58*
Residence	
Urban (r)	1
Rural	0.99*
-2Log Likelihood	853.1
N	136

Note: ** = P < 1 %, * = p < 5 %, r = reference category

4.7 Summary of findings

The potentiality of HIV / AIDS infection is higher among the sex workers, clients of sex workers, low level of condom use and pockets of intravenous drug users in Nepal. The prevalence rate of condom in Nepal is still low as compared to other developing countries. Table 4.9 gives summary of association between predictors and response variables.

From the analysis it is revealed that higher percent of men at younger age 15-19 years know AIDS than men at the older ages. Education, occupation and mass media exposure are strong predictor of knowledge of AIDS. Higher educational attainment, non-agricultural work and exposure to mass media lead to higher knowledge of AIDS. Smoking cigarettes, drinking alcohol and recent sexual activity do not show significant relation with knowledge of AIDS but the odds ratio from logistic regression indicate that higher percent of men who drink alcohol know about AIDS. Geographical variables are not significant predictors of knowledge of AIDS. However higher proportion of men living in urban areas and Hill region know AIDS than men living in rural areas and Mountain and Terai regions respectively.

Logistic regression estimates of predictors on ways to avoid AIDS shows that personal characteristics viz., education, occupation, mass media exposure, spousal communication, drinking alcohol and geographical characteristics viz., ecological regions and development regions significantly influence on use of condom for prevention from AIDS. From our analysis, we observed that use of condom is significantly related for avoiding AIDS among various ways of avoiding AIDS considered under study.

Almost 33.0 percent men who know about AIDS but they do not know how to avoid AIDS in Nepal. Logistic regression estimates reveal that education, mass media exposure, spousal communication and development regions (EDR and CDR) emerge as a strong influence on ignorance of avoiding AIDS.

One of the most important aspects of the analysis is utilization of condom in the context of HIV / AIDS in Nepal. Logistic regression estimates of predictors on ever use of condom given that they knowledge of AIDS shows that education, occupation, mass media exposure, spousal communication, alcohol drink and development regions are strong predictors. Likewise, age, education, mass media exposure and residence have a strong influence on current use of condom given that they have knowledge of AIDS.

Table 4.9: Summary of relationship of predictors on response variable from binary logistic regression analysis

Characteristics	Knowledge of AIDS	Knowledge of avoiding AIDS (Use of condom)	Ignorance of avoiding AIDS	Ever use of condom who know AIDS	Current use of condom who know AIDS
Age	**		*		**
Education	**	**	**	**	**
Occupation	**	*	-	**	
Mass media exposure	**	**	**	**	**
Spousal communication		**	**	**	*
Smoking cigarettes					*
Drinking alcohol		**		**	
Recent sexual activity					*
Residence					*
Ecological regions		**			
Development regions		**		**	

Note: ** = P < 1 %, * = p < 5 %, r = reference category

The summary of relationship of predictors on response variable from binary logistic regression provides us an opportunity to test the hypotheses. The assumptions of null hypothesis under knowledge of AIDS for characteristics spousal communication, smoking cigarettes, drinking alcohol, recent sexual activity and all the geographical variables are accepted. This indicates that there is no consistent and predictable difference in knowledge of AIDS among these variables. In the same way, the null hypotheses under ever use of condom who know AIDS are accepted for age, smoking cigarettes, recent sexual activity, residence and ecological regions. This implies that there is no significant variation in ever use of condom among age, smoking cigarettes, recent sexual activities, residence and ecological regions.

Among all the predictors, education, occupation, mass media exposure and spousal communication have strong link with knowledge of AIDS, ways of avoiding AIDS and use of condom in the context of HIV / AIDS in Nepal.

Chapter V

CONCLUSION

Nepal is one of the least developed and the poorest countries in the world. According to 2001 census, the population of Nepal is 23.1 million. The mortality rate is still high as compared to other developing countries of Asia and Africa. NDHS 2001 shows that infant mortality rate is 64.0 per thousand and child mortality rate is 91.2 per thousand. Crude birth in 2001 was 9.62 per thousand in Nepal. The life expectancy at birth for male is 59.1 years and 59.8 for females. Nearly, 60.0 percent of all adults are illiterate (*HDR, 2002*).

The first HIV / AIDS case was identified in 1988 in Nepal. Reliable data on AIDS is scarce in Nepal, however limited information from documents show that HIV prevalence is currently 0.3 percent (*NCASC, 2003*) among the general population. As of 2002, the Ministry of Health reported 624 cases of AIDS and 2598 HIV infection. Due to existing medical and public health infrastructure in Nepal and the limitation of national HIV / AIDS surveillance system, the real figure might be many folds higher than existing statistics. An HIV epidemic is centered on injecting drugs users and sex workers and most of them are young at age 15-24 years. Young people are at the nucleus of Nepal's AIDS challenge. Many studies suggest that the knowledge among young people is high although they are at high risk of infection (*Simkhada, 1998, FHI, 2001 and New Era, 1999*). Some researches show that when sexual activity starts early and condom use is very low, which might be the main cause of AIDS in general population (*Simkhada, 1998 and Tamang, 2000*). The dynamics of the epidemic is such that it has drastically increased in Kathmandu valley within very short time. In Kathmandu, HIV epidemic is centered among injecting drugs users and sex workers and the prevalence rate is 68.0 percent and 17.0 percent respectively (*WHO, 2003*). If this continues without any intervention, AIDS will be the major leading cause of death.

Existing health care system is inadequate to care for HIV/ AIDS infected persons in Nepal. A vast sum of money will be needed to strengthen the capacity of existing system (upgrading the physical facilities, training of health professionals and establishment of adequate community based care and support service). This will put a heavy burden on Nepalese economy. It will not only increase the heavy economic burden but it will also increase the lack of economically active population and create a

large number of orphans. In this context, condom is the only male-based method, which can protect HIV / AIDS and STDs. Our study is focused on utilization of condom in the context of HIV / AIDS in Nepal.

It is well recognized that knowledge and utilization of condom is affected by a number of intervening factors viz., age, education, occupation, mass media exposure, spousal communication, drinking alcohol, smoking cigarettes, residence, ecological regions and development regions. These factors might shape the knowledge and utilization of condom, and knowledge and ways of avoiding AIDS. This study tries to explore the influence of intervening factors on utilization of condom in the context of HIV / AIDS.

At a global level, it is argued that age is a significant predictor for knowledge of condom and AIDS. Higher proportion of men at younger ages know condom better than men at older ages. There is a difference in use of condom between younger and older men who had used condom. Younger men mainly use condom to avoid AIDS and STDs, however, men at older ages use condom to prevent pregnancy. Men at the older age should be made aware about importance of condom.

Men at older age know government clinic (government health post/ center) as a main source of condom. Government clinics are the main sources of condom in Nepal. Almost one in three person knows of government health post/center as a main source of condom. The capacity of sub-health post (at VDC level) should be strengthened to distribute condom especially in rural remote parts of the country. On the other hand, men at younger age prefer private clinics (pharmacy and shops). Priority should be given to social marketing of condom, which would help younger men to collect condom from pharmacy and shops.

Educational attainment of men is positively associated with knowledge and utilization of condom (Crosby, 2000). Higher educational attainment leads to higher knowledge and utilization of condom, and knowledge of AIDS and ways of avoiding AIDS. A wide disparity is observed in educational attainment among men in Nepal. To improve the level of knowledge and utilization of condom, and knowledge and ways of avoiding AIDS, educational attainment of men especially, in rural, Mountain region and Central development region should be promoted. Improving school education in remote rural areas of the country would not only increase knowledge about health and AIDS but also other aspects of living a healthy life.

Men working in non-agricultural sector are more likely to use condom for avoiding STDs and AIDS although men working in agricultural sector prefer condom for avoiding pregnancy. This might be as men working in non-agricultural sector are likely to be more mobile than men working in agricultural sector. Men working in agricultural sector need better awareness about utilization of condom and AIDS.

Our data demonstrate that mass media exposure exhibits a strong influence on knowledge and utilization of condom, and knowledge and ways of avoiding AIDS. Men exposed to mass media have higher knowledge and utilization of condom than men who are not exposed to any mass media. Similarly, men exposed to mass media have higher knowledge about AIDS and ways of avoiding AIDS than men who are not exposed to any media. Radio is especially the most effective means of mass media in Nepal. In 2001, 66.5 percent men heard family planning from radio, 29.5 percent heard family planning from TV and the least 24.5 percent from newspaper. The literacy level among men in remote rural parts of country is low - newspaper is an ineffective means of exposure for them and it is not accessible due to geographical inconvenience. Exposure to TV is limited to only in certain urban areas although it is the most effective means of exposure. Spousal communication enforces higher knowledge and utilization of condom and ways of avoiding AIDS. Little attention has been paid to the importance of spousal communication in Nepal. A radio serial SHRIMAN SHRIMATI has been effective in encouraging couple for spousal communication (Saharan, 2003).

It is well documented at a global level that consumption of alcohol and use of condom is inversely related (*Mataure, 2002*). Our analysis reveals that the use of condom among men who drink alcohol is higher than who do not, which is a contradictory result. A large number of earlier researches show that consumption of alcohol leads to less use of condom in Nepal (NEW ERA, 1998, Save the Children US and Tamang, 2000).

It is argued that there is a wide variation in knowledge of contraceptive by residence. This is particularly so in developing countries where a considerable disparity is observed between rural and urban residence. A wide discrepancy is observed in knowledge and utilization of condom by residence. To minimize rural urban disparities in utilization of condom, level of education and mass media exposure should be improved for men living in rural areas.

Indicators of development are not sufficient evidence of higher knowledge of source of condom in Nepal. Government health posts / centers are more popular in western part of the country and pharmacy and shops are more popular in eastern part of the country. There is wide variation in personal characteristics of men among the development regions, which might be the reason for wide variation in knowledge and utilization of condom, and knowledge and ways of avoiding AIDS.

From our study, we found that in order to improve the knowledge of AIDS and usage of condom, the government of Nepal needs to consider the geographical dimension as well as the development regions in Nepal. In additions to providing condoms at a government health centers and pharmacies, the message regarding condom and AIDS need to broadcast to the interior parts of the country to improve awareness of AIDS and usage of condom. If immediate steps are not taken to improve condom use to prevent HIV / AIDS the epidemic will affect the fragile economy of Nepal to a very large extent.

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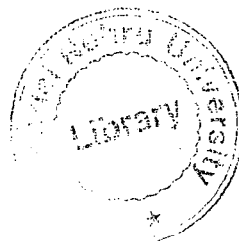
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